

**STRATEGIES CONSIDERED EFFECTIVE BY BUSINESS  
TEACHERS IN SOUTH-SOUTH, NIGERIA FOR TEACHING  
NEW BUSINESS SUBJECTS IN SECONDARY SCHOOLS.**

**BY**

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2012 197011F**

**DEPARTMENT OF VOCATIONAL EDUCATION  
FACULTY OF EDUCATION,  
NNAMDI AZIKIWE UNIVERSITY, AWKA**

**MAY, 2016.**

**TITLE PAGE**

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**A DISSERTATION SUBMITTED TO THE  
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## APPROVAL PAGE

This dissertation has been approved in partial fulfillment of the requirements for the award of Doctor of Philosophy (Business Education), Department of Vocational Education, Nnamdi Azikiwe University, Awka, Anambra State.

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## CERTIFICATION

It is hereby certified that the research study reported in this dissertation is the original work of **Ogwunte, Peter Clinton** (2012197011F). The references to the existing studies were duly acknowledged. To the best of the researcher's knowledge, the work embodied in this dissertation has not been submitted in part or full for other diploma or degree of Nnamdi Azikiwe University or any other Institution.

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## **DEDICATION**

This research work is dedicated to my late father, Mr. Clinton Inemeawaji Ogwunte, my dear mother, Mrs. Grace Clinton Ogwunte and my lovely wife, Mrs. Ubelejit Peter Ogwunte.

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## ABSTRACT

*This study which was on strategies considered effective by business teachers in south-south, Nigeria for teaching new business subjects in secondary schools used the six instructional strategies proposed by Mannison (2009). The study adopted a survey research design. Six research questions and six null hypotheses were tested at 0.05 level of significance. A population of 13,290 business subject teachers in public secondary schools in south-south, Nigeria was used for the study. A sample of 1,329 business subject teachers drawn from the total population of 13,290 constitute the sample size of the study. Data was collected for the study through the administration of validated questionnaire on the respondents. The split-half method was used to determine the reliability of the instrument. The reliability co-efficient of the instrument for the study was found to be 0.86, 0.58, 0.62, 0.97, 0.86 and 0.62 respectively. The mean statistics was used to answer the research questions while Z-test statistic was used to test the hypotheses. Findings of the study revealed that business teachers in south-south, Nigeria secondary schools considered independent and experimental instructional strategies very effective for teaching business subjects, while interactive and indirect instructional strategies were considered generally effective. However, material/visual aid strategies was considered fairly effective and direct instructional strategies was considered ineffective for teaching business subjects at the secondary school level. The implications of the findings have been discussed and conclusion drawn. Relevant recommendations were made towards the improvement of effective teaching of business subjects at secondary school level, which include compulsory application of independent and experimental instructional strategies for teaching business subjects in all secondary schools in south-south, Nigeria.*

# **CHAPTER ONE**

## **INTRODUCTION**

### **Background to the Study**

Education is a key for human development and empowerment which provides an individual for all round development. Section 1 of the Nigerian National Policy on Education (FRN, 2004) states the need for functional education to be relevant, practical and acquisition of appropriate skills and development of competencies as equipment for the individual to live and contribute to the development of his society. This implies that the quality of instruction at all levels has to be oriented towards inculcating the values of acquisition of competencies necessary for self-reliance and reducing poverty.

In Nigeria, our education is made up of informal and formal system. Informal education is a term used to describe any form of learning that is outside the standard school setting while formal education involves learning normally delivered by trained teachers in systematic way within a school, academy, college, institute or university (Marrian & Caffarella, 2007). Formal system of education is design based on standard curriculum for effective teaching and learning process.

Goodlad (2011) defined curriculum as a guided learning experiences and outcomes developed through reconstruction of knowledge and experiences under the support of a school for learners. Curriculum is also perceived as all the learning experience which are planned and guided by the school whether carried out in groups or individually either in school or outside the school (Amuseghan 2007, Adams & Onyene 2001, Obioma 2009, and Aina 2007). In the opinion of Ojekunle (2011), Curriculum is described as an engine which propels education to achieve for both the individual and the society what they hold up as prize.

In the school curriculum, subjects are designed for the attainment of educational goals. One of such subjects is the business subject which is offered in Nigerian Secondary Schools at all levels. For effective educational goal attainment, business subjects need to be effectively taught with effective teaching strategies in order to attain the required goals.

Effectives teaching strategies according to Umezulike (2007) is the process of planning and carrying out teaching task in order to achieve education goals. Effective teaching strategies must not be taken for granted if a nation boast of being economically, technologically and educationally developed (Ferdinand, 2007). In the light of this, Adebayo (2003) stressed that for, teaching and learning of business studies to be

effective and meaningful, there is need for personnel (teachers) to acquire relevant degrees and experience in their profession.

Business subjects' programme requires the services of such specialized, experienced competent male and female personnel who possess the necessary skills and knowledge to ensure that students under them acquire the needed skills and knowledge in order to perform in the world of work after graduation as employees. According to Nigeria Educational Research and Development Council (NERDC) (2008), business subject programme requires personnel that hold the Nigeria Certificate in Education in Business Education, or Higher National Diploma in Business Administration, but should be encouraged to go for one year training in business education.

In the same vein, educators are incessantly concerned about the need to improve academic achievement especially in business education. The plethora of researches on student academic achievement in business education, is a testimony to this concern (e.g. Nwakama, 2012 and Nwogu, 2011). This is not only because a higher achievement especially in business education (business subjects inclusive) is the foundation for technical skills which are in short supply, but also because higher achievement is particularly valued in a society which sets high premium on academic success as a stepping stone for entrance into more prestigious occupations (Ezeude, 2008). The various



biological differences in human make-up particularly between male and female business teachers in most cases have led to the suspicion that one sex may have a “teaching edge” over the other sex. Some people believed (without of course any empirical support) that because male business teachers are regarded as the dominant and even superior sex, they intrinsically have better brains and teach much better than their female counterparts (Nwakama, 2012).

The invaluable and numerous roles which business education has been playing in national development show the needs for conducive and innovational teaching and learning environment. Akpan (2008) opined that school location has a significant effect on the achievement of students. Akpan stated further that it is obvious that the location of a school (rural or urban) affects a child ability to study and perform at the level expected of him. A stimulating school environment arouses the students to learn especially in business education. Hence, the degree of interest a student derived from the learning environment affects his performance.

The neglect for business education in Nigeria occasioned by her dependency on the educational system of her colonial masters prior to her independence in 1960, gave rise to the inability of colonial system of education to solve Nigeria socio-economic problems including vocational skills acquisition among our secondary school leavers in the 20<sup>th</sup>

century. This led to the birth of National Policy on Education which was instrumental to the introduction of Business studies in 1981 in public secondary schools in Nigeria.

Prior to 1977, no subject was called business studies in Nigeria education system. It came into existence as a result of the introduction of Junior Secondary School (JSS) in the 6-3-3-4 system of education in 1981, with five specific subjects area which include: office practice, Book-keeping/Accounting, typewriting, shorthand and commerce. Due to the need to transform our secondary school system to be in tune with global and national demands, the Federal Republic of Nigeria (FRN) through Nigeria Educational Research and Development Council (NERDC) made typewriting an elective subject while insurance and store management were added to Business subjects in 2008 (Okolocha & Onyeneke, 2013).

Business subjects form a means of laying foundation for national, technological, economical advancement and for higher education (NPE, 1981 revised in 2004) and (FGN, 2009). According to Okolocha and Onyeneke (2013), Business subjects equip its recipients with personal skills, consumer skills, and knowledge for clerical and managerial abilities needed to adapt to changing economic and business realities and these skills made them to be wealth and job creators rather than wealth and job seekers. Ethisiemen (2005) and Aliyu (2006) see

business subjects as comprehensive, practical and skill subjects, while Ogben and Amahi (2008) maintained that business subjects equip students with knowledge and skills that will help them to find a job after schooling or create their own employment. Furthermore, this researcher perceived business subjects as that aspect of educational programme designed to provide an individual with the needed business and vocational attitudes, understanding, knowledge and skills necessary for industry and personal use. Business subjects at the junior secondary school level comprised subjects taught at pre-vocational level and as an integrated subject. These include; Book-keeping (Business success), Shorthand (skills for business), Office practice (Effective office practice), Typewriting (Communication tool) and Commerce (the heart of business)

At the Senior Secondary School level as contained in the new Senior Secondary School business subject curriculum launched in September 2011, business subjects include the following; Financial Accounting, Store Management, Insurance, Commerce and Office Practice. Whether at the Junior Secondary School level (Jss1-3) or Senior Secondary School level (SS1-3), the principal objectives of these subjects remain the provision of students with the relevant skills, knowledge and attitude necessary for paid or self-employment as well as for higher education in business areas. Today, any youth without skills is without a future, and any business subject programme which does not

pay adequate attention to how students will acquire and practice technical and vocational skills is not useful. Vocational skills are those skills necessary for getting, keeping and doing well on a job (Robinson, 2010).

Against this backdrop, Ohiwerei (2009), reports that business students trained to teach business studies, or work in industry or be self-reliant complained about lack of jobs, companies complained of receiving applicants without requisite skills. Some of the job skills inherent in business subjects are; Communication skill (ability to write clear and concise sentences, reporting, presentation, telephone skills etc.), Entrepreneurial skills (time management, Marketing, basic accounting, Micro business management etc.), Problem solving skills (Creativity, Practical, Investigating, researching, analyzing, team work etc.) and Basic ICT Skills (key boarding, word processing, data management, internet operations etc.)

As the acquisition of skills for paid or self-employment is at the centre of business studies and youth empowerment, practical skill is not acquired by chance, it is planned, taught, learnt and practiced in a strategic manner especially in Secondary Schools. Some schools of thoughts believe that the growing number of unemployed school leavers in Nigeria is not as a result of scarcity of jobs, but lack of skills. The high

rate of unemployment in the country is so disturbing that parents have started to question the rationale for sending their children to school.

The main objectives of business studies and other related subjects according Okwuanaso and Nwazor (2000) was to instill in the students a pattern of thinking, develop attitudes and values before such habits become unchangeable, since it has become a psychological fact that after few years of one's life, ways of reasoning, behaviors (Khan, Ghouri, Siddqui, Shaikh&Alam, 2010), analysis and economic decisions (Malik, Khan, Bhutto &Ghouri, 2011), somehow follow a fixed pattern. According to the Federal Republic of Nigeria (FRN, 2009), the objectives of business studies are to enable students acquire the basic knowledge of business, to enable students acquire the basic skills in office occupation, to prepare students for further training in business studies, to provide orientation and basic skills to start a life of work for those who may not undergo further training, to provide basic skills for personal use in future, and to relate the knowledge and skills to the national economy.

The objectives stated so far emphasize that whether paid employment or self-employment, business subjects expose individuals to acquire knowledge, skills and attitudes relevant and adequate for employment in specific business occupations. With this, it therefore follows that the value of any business subjects could be determined in its ability to adequately prepare and equip individual in such a manner that

they could fit into specific jobs or establish their own businesses on graduation.

Kang'ahi, Indoshi, Okwach and Osodo (2012) observed that the practical approach to teaching Business subjects in secondary schools is a major missing link. To buttress this fact, they contended that the solution does not lie only with the availability of qualified teachers and modern teaching facilities, but also the effectiveness of the strategies applied in teaching. Ezekwesili (2007) affirmed that the reforms in Nigerian education were aimed at promoting functional education for skill acquisition, job creation and poverty eradication. Teaching strategy is a method, step, means, approach or procedure of achieving the stated goals of education (Marcella & Kysika, 2008). Teaching strategies play very important role in teaching and learning process. Effective strategies are very crucial in teaching and learning business subjects at the Secondary School level. This is because the consequences of lack of effective teaching of subjects are devastating. For instance, lack of effective strategies in teaching business subjects may result to poor skills acquisition among school leavers. Poor skill acquisition may result to unemployment. Joblessness on the other hand results to poverty and social ills.

Agwu (2001), and Uwameiye & Titilayo (2005) observed that the teaching strategies adopted by most business subject teachers are more

of theory rather than practical and inquiry, and the type of teaching materials used are all outdated, therefore, no longer relevant for teaching in the present information technology era. They further stressed that most teachers are not after students' participation and contributions in the class, but are concerned with covering their scheme of work. The type of strategy to be adopted by any teacher depends on the information or skills the teacher is trying to convey. For practical skill acquisition in business education (business subjects inclusive), the Nigeria Educational Research and Development Council (NERDC) (2008), prescribed the following methods as appropriate for teaching business subjects: Discussion, excursion, lecture, chalk board, project, simulation, question and answering, individual learning, demonstration, resource person, text book, explanation, video clip, Field observation, Radio, television, office visit method, dramatization methods, use of local resources, flip chart, CDS, and DVDs.

In terms of the acquisition of practical skills needed for self-reliance and national development, the National Board for Technical Education (NBTE) (2004) modular curriculum on Vocational and Technical Education (VTE) approved the teaching methods for business education (business subjects inclusive) as follows: Demonstration method, Discussion method, Project method, field-trips method, drill and practice method, inquiry method, close circuit television (Electronic

learning) method, survey method, Discovery method, Problem-solving method, Assignment and lecture methods. Also, Yinusa (2014), quoted Ajibade (2009) and Olarewaju (1994) that the teaching method for practical skills acquisition includes: field-trip method, demonstration method, assignment method, lecture method, problem solving method, discussion method, project and electronic learning method.

In regards to teaching strategy, Mannison (2009), proposed six groups of instructional strategies for effective teaching of skills. These include direct, indirect, interactive, experimental, independent and material/visual aids instructional strategies. Direct instructional strategies are highly teacher-centered and very effective for providing instructional information to students, while indirect Instructional Strategies are student-centered strategies that seek a high level of students' involvement in observing, investigating, drawing inferences from data and forming hypotheses. Interactive Instructional Strategies rely heavily on discussion and sharing among participants, while experimental Instructional Strategies are described as learner-centered and activity oriented which involves personal and practical experience of the learner. Independent Instructional Strategies involves range of instructional methods that are purposefully provided to foster the development of individual student initiative, self-reliance and self-improvement and material/ Visual Aid Strategies involves the use of instructional material and visual aids in teaching and learning process.



From the forgoing therefore, it is glaring that the approved teaching methods listed by the Nigerian Educational Research Development Council (NERDC) (2008), and the National Board for Technical Education (NBTE) (2004) agreed with that of Mannison (2009). The choice of Mannison instructional strategies for this study was informed by the author's careful selection and grouping of the Nigeria Educational Research Development Council (NERDC) and National Board for Technical Education (NBTE) approved teaching methods into six instructional strategies. This is not only seen to be appropriate, but in line with the title of the study.

In view of the above scenario, the researcher considered it worthwhile to conduct a study on the effectiveness of the six groups of instructional strategies for teaching business subjects in south-south, Nigeria secondary schools through the opinions of male and female, urban and rural, degree and non-degree holders as well as experienced and less experienced business teachers in south-south, Nigeria. This study is timely, necessary and the right step in the right direction especially now that the nation is facing serious graduate unemployment.

### **Statement of the Problem**

In recent times, the academic performance of post-primary school students, especially in the Internal and external senior school certificate examinations (SSCE) in business subjects has been on the decline (Nwogu 2011). In the same vein, Nwakama (2012) carried out a field

work on West African Examination Council (WAEC) result of 2010 and discovered that out of 9,565 candidates that registered for selected courses, 8,106 students representing 84.75% sat for the examination, 4,218 (52.04%) got credit and the rest either got ordinary pass, failed or were absent. The situation does not only worry government but also parents. Observations by parents, teachers and government shows that there seems to be the absence of effective strategies for teaching business subjects at the secondary school level not only in south-south, Nigeria, but the whole nation. It was also observed that the availability of teachers, provision of teaching facilities and equipment's in south-south Nigeria schools do not seem to match with effective teaching strategies in order to impart the much needed vocational skills to the youths in schools.

Today, unemployment is not only ravaging the youths and future leaders of this country, but also poses one of the greatest challenge to the government and people of Nigeria. These school leavers are unemployed because they seem to lack the necessary skills for paid or self-employment. Skills in business subjects is not by chance, it is effectively planned, taught, learnt and practiced in a strategic manner especially at the secondary school level. Unfortunately, effective teaching strategies which among others include direct, indirect, interactive, experimental, independent and materials/ visual aid that

should be employed to foster the teaching of skills in business subjects at secondary school level and make the school leavers employable on graduation seem not to be properly identified and utilized by business teachers in south-south, Nigeria secondary schools and indeed, the entire country.

It is generally believed that if business subject's students are properly taught the requisite skills before leaving schools, they should certainly acquire the desired job skills necessary for paid or self-employment. Moreover, unemployment and poverty will be eradicated in our society. The problem of this study therefore, is to identify instructional strategies which could best be used to impart the requisite skills on business subject's students among the six groups proposed by Mannison (2009).

### **Purpose of the Study**

The general purpose of this study was to determine strategies considered effective by business subject teachers in south-south, Nigeria for teaching new business subjects in secondary schools. This study specifically seeks to:

1. determine how effective business subjects teachers in south-south, Nigeria consider direct instructional strategy for teaching new business subjects.
2. determine how effective business subjects teachers in South-south, Nigeria consider indirect instructional strategy for teaching new business subjects.

3. determine how effective business subjects teachers in South-south, Nigeria consider interactive instructional strategy for teaching new business subjects.
4. determine how effective business subjects teachers in South-south, Nigeria consider experimental instructional strategy for teaching new business subjects.
5. determine how effective business subjects teachers in south-south, Nigeria consider independent instructional strategy for teaching new business subjects
6. determine how effective business subjects teachers in South-south, Nigeria consider material/ visual aids strategy for teaching new business subjects.

### **Significance of the Study**

The findings of this study will be of immense benefits specifically to business teachers and education authorities. This study would provide facts and information that would assist business subject teachers to choose the best method and strategies for teaching business subjects at the secondary school level so that students will acquire the necessary skills to function in the industry, or to be self-employed on graduation.

Similarly, business subject teachers will be kept abreast with modern equipment, technologies and facilities that should be used for effective teaching strategies to yield excellent results in teaching and learning by the virtue of the information that would be provided by the findings of this investigation.

Again, the finding of the study will also enhance the professional growth of the teachers and bring about interactive business class

through the use of appropriate methods and strategies to improve the teaching and learning of business subjects for the individual and national development.

Finally, researchers and other stakeholders in business education and related fields will be provided with inputs, materials, data, facts and ideas for other researches through the findings of this study.

### **Scope of the study**

The study covered strategies considered effective by business teachers in South-South, Nigeria for teaching new business subjects in secondary schools. Also, the study covered the six groups of instructional strategies proposed by Mannison (2009), viz: direct, indirect, interactive, experimental, independent and material/visual aid strategies. No effort were made to use items outside the above proposed six groups of instructional strategies adapted from Mannison (2009) Moreover, only public secondary school business subject teachers participated in the study.

With regard to content scope, the study covered the following variables of interest: Gender (male/female), location (urban/rural), qualification (degree(s)/non-degree(s) holders), experience (below 5 years/above 5 years), school/level (Junior/senior secondary) etc.

## Research Questions

The following research questions guided the study.

1. How effective do business subject teachers in South-South, Nigeria secondary schools consider direct instructional strategies for teaching the new business subjects?
2. How effective do business subject teachers consider indirect instructional strategies effective for teaching the new business subjects in South-South, Nigeria secondary schools?
3. How effective do business subject teachers in South-South, Nigeria secondary schools consider interactive instructional strategies for teaching the new business subjects?
4. How effective do business subject teachers consider experimental instructional strategies effective for teaching the new business subjects in South-South, Nigeria secondary schools?
5. How effective do business subject teachers in South-South, Nigeria secondary schools consider independent instructional strategies for teaching the new business subjects?
6. How effective do business subject teachers in south-south, Nigeria secondary schools consider material/visual aids instructional strategies for teaching the new business subjects?

## Hypotheses

The study was guided by the six null hypotheses, which were tested at 0.05 level of significance;

1. There is no significant difference in the mean ratings of male and female business subject teachers in South-South, Nigeria secondary schools regarding how effective they consider direct instructional strategy for the teaching of new secondary school business subjects.
2. There is no significant difference in the mean ratings of male and female business subject teachers in South-South, Nigeria secondary schools regarding how effective they consider indirect

instructional strategy for the teaching of new secondary school business subjects.

3. There is no significant difference in the mean ratings of Urban and rural business subject teachers in South-South, Nigeria Secondary schools regarding how effective they consider interactive instructional strategy for the teaching of new secondary school business subjects..
4. There is no significant difference in the mean ratings of degree(s) holders in business education and non-degree(s) business subject teachers in south-south Nigeria secondary schools regarding how effective they consider experimental instructional strategy for the teaching of new secondary school business subjects.
5. There is no significant difference in the mean ratings of business subject teachers who have taught for five years and below and their counterparts who have taught for five years and above in south-south, Nigeria secondary schools regarding how effective they consider independent instructional strategy for the teaching of new secondary school business subjects.
6. There is no significant difference in the mean ratings of Junior and senior secondary school business subject teachers in south-south, Nigeria regarding how effective they consider material/visual aids strategy for the teaching of new secondary school business subjects.

## CHAPTER TWO

### REVIEW OF RELATED LITERATURE

In this chapter, the review of related literature is presented under the following headings and sub-headings:

#### **Conceptual Framework:**

Business Subjects

Curriculum

Teaching Strategies

#### **Theoretical Framework**

Edward Thorndike's theory

Reinforcement theory (B.F. Skinner)

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Objective of business subjects at secondary School Level.

Importance of business subjects in National Development.  
Relevance of effective teaching of business subjects at secondary school level.

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## **Empirical Studies**

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Strategies Considered Effective by Secondary School Teachers in South-East Nigeria for Teaching Accounting

Strategies for Effective Teaching of Accounting in Senior Schools in Kaduna State, Nigeria

Teaching-Learning in Accounting Education in Malaysia Secondary School, Principals' Perception of Business Studies

Teachers' Teaching Effectiveness in Anambra State, Nigeria Teaching Methods and Students' Academic Performance

Teacher-directed, Student-directed Instructional Strategies and Gender as Predictor of Students Entrepreneurship Knowledge in Biology in Oyo State, Nigeria

Teaching Strategies in Business Education for Sustaining Information and Communication Technology Learning in the Niger Delta Tertiary Institutions

Effect of Team Teaching on Secondary School Students' Achievement in Business Studies in Onitsha North LGA of Anambra State, Nigeria

Effect of Application of Instructional Methods on Learner Achievement in Business Studies in Secondary Schools in Kenya

A Comparative Analysis of Two Methods of Teaching Financial Accounting at Senior Secondary Schools in Ondo State, Nigeria

## **Summary of the review of related literature.**

### **Conceptual Framework**

#### **Concept of Business Subjects**

Business subjects represents a broad and divers discipline that is included in all levels of educational delivery systems – elementary, secondary and post secondary (Amesi, 2010). Igboke (2005) sees business subjects as an aspect of the total educational programme that provide the knowledge, skills, understanding and attitudes needed to do well in the business world. Business subjects as perceived by Okoli (2010), is an important part of general education which emphasizes skills and competency acquisition for use in office and business related occupations. Similarly, Ibrahim (2008) stated that business subjects encompasses knowledge, attitude and skills needed by all citizens in order to effectively manage their personal businesses and function effectively in their economic systems. In the view of Osuala (2002), business studies is a training system that will make him/her fit into the world of work. In support of the above, Nwanewezi (2010) describes business subjects as encompassing education for office occupations, business teaching, business administration and economic understanding.

Atakpa (2004) stated that business subject is that aspect of education that concerns itself with vocational and professional preparation for career in business. Emeraton (2008), described business

subjects as that which train the individual on the right attitude and skills for self-employment. Business subjects form a means of laying foundation for national, technological, economical advancement and for higher education (NPE, 1981, revised in 2004) and (FRN, 2009).

According to Okolocha and Onyeneke (2013), Business subjects equip its recipients with personal skills, consumer skills, and knowledge for clerical and managerial abilities needed to adapt to changing economic and business realities and these skills made them to be wealth and job creators rather than wealth and job seekers. For Ethisiemen (2005), and Aliyu (2006), business subject is a comprehensive, practical and skill subjects, while Ogben and Amahi (2008), maintained that business subjects equip students with knowledge and skills that will help them to find a job after schooling or create their own employment. Also, Dike (2009), contained that some basic attitude and skills in business subjects are essential for an individual to respond positively to his environment and explore its potentials. This implies that business subjects prepares the individual to be properly equipped to acquire practical skills which could be used for job creation, instead of job seeker. The researcher perceived business subjects as that education which assists students to develop positive attitudes, and practical skills for self-reliance, rather than depending on the government for employment. These will in-turn produce secondary school graduates

with self-confidence and capacities for independent thought to discover new information leading to economic development (Emeraton, 2008). Business subject from a wider perspective is the type of education designed to change the orientation and attitude of the recipient and the process will equip them with the skills and knowledge to enable them adapt to turbulent environment. In support with Emeraton, Agwu (2001) stated that business subject aim at developing the requisite practical skills, attitudes, competencies and disposition that will pre-dispose the individual to be a driving force in creating job for self-reliant. Ehiamentalor, Osu-Nwufo, Makeri-Yahaya and Oladunjoye (2009), Opined that business studies consist of learning activities in relation to shorthand, and computer education.

The above definitions explains that business subjects seek to provide students with the knowledge, practical skills and attitudes required to survive in the word of work. Business subjects has also been defined as those courses that provide useful and marketable skills for gathering, keeping and doing well on a job (Robinson, 2010). In the summary of the afore-going, Abdulkadir (2011) observed that one remarkable important characteristic of business subjects programme is that, its products can function independently as self employed and employers of labour.

Ekpenyong and Ojo (2008), described business courses as a vital tools for preparing students, for the enterprise as employee, employer, entrepreneur and to be self-employed.

### **Concept of Curriculum**

Curriculum development is not a new concept in educational system today. However, issues of curriculum, either in an explicit or an implicit are inextricably linked to current thinking and action on educational system around the world (Ajibola, 2008). The encyclopedia of educational research gives the following definitions of curriculum as all the experiences a learner has at school under the guidance of the teacher. This implies that the teacher plays a vital role in translating curriculum objectives. The Dictionary of Education defines Curriculum as the total programme designed to achieve the prescribed objectives. Brown (2006) defined curriculum to involve all students school experiences relating to the improvement of skills and strategies in thinking critically and creatively, solving problems, working collaboratively with others, communicating well, writing more effectively, reading more analytically, and conducting research to solve problems.

The definitions given so far implies that curriculum is the sum total of activities which is planned and directed by the school for attainment of educational goals. For Goodlad (2011), curriculum is defined as a guided learning experiences and outcomes developed through reconstruction of

knowledge and experiences under the support of a school for learners. Curriculum is also perceived as all the learning experience which are planned and guided by the school whether carried out in groups or individually either in school or outside the school (Aina 2007, Risk 2012, Obioma 2009, & Amuseghan 2007).

In another perspective, Ojekunle (2011) viewed curriculum as an engine which propels education to achieve for both the individual and the society what they hold up as prize. Historically, the word curriculum was derived from the Latin root *currus* which means a race course or a chariot. "Currus" Originates from the word "Curre" (to run). Thus the term curriculum in its original context means runaway or race course. Offorma (2007), defined curriculum as a planned learning experiences offered to a learner in school, adding that it is a program of studies made up of three components: programme of studies, programme of activities and programme of guidance.

According to Maduewesi (2007), the two basic philosophical issues in Nigerian education emphasize integrating the individual so as to become a sound and effective citizen and providing equal education for all citizens at primary through secondary and tertiary level. Maduewesi reiterated the need for consistent change and review of Nigerian curriculum in order to integrate new areas of concern. In the recent times, human activities and life have been highly industrialized and

technical hence the meaning of the term curriculum has also been changed to meet the needs of education of different courses of studies. Curriculum in fact is an organized plan of course outlined with the objective and learning experiences to be used for achievement of these objectives. In a wider perspective, it is a way of preparing individuals to become productive citizens and useful members of the society to which they belong. Thus, curriculum is a tool of education to educate and humanize the whole man.

### **Concept of Teaching Strategies.**

Uwameiye (2005) defined teaching strategies as methods used to allow learners to access the information taught. Uwameiye further observed that the teaching strategies adopted by most business teachers are more of theory rather than practical and inquiry. In the view of Norman (2011), teaching strategies involves the use of all the instructional materials, methods, and other resources available to teachers that would help them meet the instructional need of all students and enable them to progress from dependent to independent learner. While contributing, Olawodun (2009) opined that teaching strategies refers to the techniques and methods used by the teacher for effective teaching of his students. As a matter of fact, Olawodun viewed teaching strategies as being unique to subject matter and varies from teacher to

teacher, and conclude that strategy could be an experience, talent or trait.

All the views above could not agree less with that of Jayaprakash (2005), who opined that teaching strategies can help almost everyone involved in education. Teachers need to learn about new strategies and techniques to be up-to-date. New teachers may want to have a reference of old theories that have worked well for others. The continuous change in education, business, office work and national economy makes the application of effective strategies for teaching business subjects inevitable so as to impart in the students, realistic and relevant knowledge, skills and competencies required in today's office and business establishment. Nwaokolo and Akilaiya (2004) stated that effective teaching demands effective strategies so as to bring about significant changes in the behavior of students before and after they have learnt. On the other hand, Aworanti (2010) pointed out that for effective teaching to take place, a good strategy must be adopted by the teacher. Also when deciding the strategy to use, a teacher needs to consider students background knowledge, environment and learning goals. Aworanti added that in teaching, a variety of strategies are used to ensure that all students have equal opportunities to learn, which can be done in three major ways:

Auditory, visual and kinesthetic.



The success of teaching business subjects in secondary schools depends to a large extent on effective teaching strategies applied by teachers. More so, any teacher who is not applying effective strategies in teaching business subjects at secondary school is operating below optimum capacity. On this basis, Nwaokolo (1998) was of the opinion that effective teaching of business subjects at secondary school demands the use of appropriate tools, equipment, and effective strategies in order to emphasize learning-by-doing. Ezeom and Afe (2004) stated that teaching and learning are meaningful when the learner is actively engaged in the process and understands the ideas or skills that he is learning.

In the same direction, Okoh (2004) observed that business subjects like keyboarding/Typewriting practical are not adequately handled in our secondary schools. Students are not taught with the necessary strategies that will arouse their interest in the subject. In order to understand effective teaching better, Kang'ahi, Indoshi, Okwach and Osodo (2012) perceived effective teaching as classroom management, the integration and effective use of teachers' three basic qualities, namely; teacher's knowledge of the learner, teachers knowledge of the subject matter and teacher's knowledge of the various teaching methods.

In this context, Nwalado (2008) advocated that a professional teacher should be intelligent so as to promote effective teaching generally; it is worthy to note that many factors need to change in order to ensure the success of effective teaching of business subjects at secondary school level in Nigeria. First, Nwodo (2006) advised that the importance of effective teaching of business subjects in schools need to be addressed, considering the fact that Nigeria is a developing country. On the other hand, Yonker (2003) stated that to revolutionaries the effectiveness of teaching business subjects in secondary schools, the classroom should be made the work place while technologies and strategies made the tools for effective teaching. In this regard, Suleman (2004) suggested a number of ways to enhance effective teaching of business subjects at secondary school level as follows:

- The number of students should be manageable so that there can be effective teaching and learning experience.
- Adequate equipment that will facilitate teaching and learning should be provided for the students.
- Language: when communication is faulty, learning is meaningless; therefore teachers should be able to communicate with the learner in a way that they will easily understand.
- Knowledge of the teacher: the knowledge of the subject matter in addition to continuous education of the teacher through in- service

training, seminars and conferences, will definitely help them to improve professionally. Students learn better when they participate in projects, demonstrations and practical's, in addition to the theoretical knowledge of the subject.

- Interest of the student: for teaching and learning to be effective, the student should develop an interest in subject. While supporting the above views, Omo-ojugo & Ohiwerei (2008) added that learning business subjects cannot be mastered by mere memorization of the learner in the learning process there should be sound theoretical knowledge and intensive practice in application of basic principles.

In a related development, Njoku (1992) expressed fear by stating that another area of current concern in the teaching of business subjects is the use of appropriate strategies. In practice, the teaching of business subjects should involve the use of a number of teaching strategies in addition to normal lectures. These include demonstration, discussion, field trips, role playing and simulation methods. Funsho (2003) observed that teaching methods or techniques are strategies employed by the teachers to enhance learning. Funsho stressed that teaching strategies includes not only the manner of presentation that the teacher employs but everything that he/she does in the way of arranging conditions,

grouping studies, guiding activities, giving assignment and providing information to aid learning.

## **Theoretical Framework**

### **Edward Thorndike's theory**

The theoretical framework of the study is hinged on the theory of learning propounded by Edward L. Thorndike and B.F. Skinner's reinforcement theory of motivation. Edward Thorndike (1874 – 1949) is well known for his laws of learning. One of his major laws of learning includes the law of effect. This law states that an act which results in an animal's experiencing satisfaction in a given situation will generally become associated with that situation so that when it recurs that act will also be likely to recur. The idea is that pleasure and pain as consequences of our acts are important determinations of behaviour. We all do those things that give us pleasure and naturally avoid those things that give us pain.

The law of effect arose as a result of an experiment which Thorndike carried out using a hungry cat locked up in a cage with a tempting morsel of fish outside. The only way to unlock the cage was by pulling a string hanging inside the cage. The cat was able to discover this after several attempts of making frantic efforts to find its way out. Its efforts were rewarded by the door opening and its being able to get at the fish. The test was repeated several times and it was discovered that it

took the cat shorter and shorter time to open the door of the cage and reach the fish outside. After several studies, Thorndike concluded that it was not by the cats reasoning nor by his instinct that he learnt to pull the string rather it was due to the gradual stamping in of the stimulus response connection between seeing the string and pulling it. That is to say, if a stimulus was followed by a response and then by a satisfier, the stimulus response connection would be strengthened. If however, a stimulus was followed by a response and then by an annoyer, the stimulus response connection would be weakened. Thus, satisfying and annoying effects of responses determined whether the stimulus – response connections would be stamped in or stamped out.

The law of effect was later modified to read the law of exercise. This simply means that satisfying consequences serve to re-inforce stimulus response bond. It was further modified to read the law of readiness. This law states that a learner satisfaction is undermined by the extent of his “preparatory set” that is readiness for action. Thorndike theories are of great importance to the teacher. The emphasis on the S-R bond remind teachers of the importance of viewing all his activities as contribution to the learning process. Again, to the teaching of business subjects, Thorndike’s theory have contributed in the following ways.

**Practice:** Business subjects which consist of financial accounting, store management, insurance, commerce and office practice is geared towards skill acquisition. The skills can only be acquired through practice. In the Thorndike experiment, the cat was able to perform less random activity with subsequent trials until it operates the release mechanism once it finds itself in the cage. According to Isiaka and Dagosta (2001), this is analogous to the theory of vocational education which states that training should help the trainee to capitalize his interest and abilities to the highest possible degree. In other words, incorrect experiences will diminish and the correct ones get fixed with constant practice. Business subject is rooted in acquisition of skills and as such learning cannot be effective by watching someone else perform the action. In business education (business subjects inclusive), we learn to do things by actually doing them. Thorndike emphasized the importance of doing and repetition in the learning process.

**Motivation:** Thorndike's theories contain element of motivation. Motivation is a learning process which is constantly applied in business education instruction. This is a way by which an individual is energized so as to learn better. In Thorndike experiment, the visible food was a propelling force for the cat to perform random activities in order to get at it while in the cage since it was hungry, when a good and stimulating

instructional strategies and occupational environment is provided in the classroom, students would be motivated.

**Need for students to work at their own pace:** Another useful outcome of the stimulus response theories is the need for students to work at their own pace. This means that students' stages of development, maturation and environmental differences should be taken into consideration when teaching. Skill subjects for instance should be taught using appropriate teaching method.

**Reinforcement:** Reinforcement is one of the key principles of learning. Food reinforces responses so as to occur again. This also applies to learning business subjects. Reinforcement is a way to encourage what has been learnt in order to make it part of the individual and this is achieved through constant practice. Praise always follows job well done and deep appreciation for efficient mastery of skills has always been part of teaching/learning process for business subject.

### **Reinforcement Theory of Motivation (B.F. Skinner)**

This theory is a popular process theory of motivation. The theory was propounded by B.F. Skinner and his associates. The theory is concerned primarily with behaviour modification; demonstrating the power of extrinsic rewards in changing behaviour and arguing that motivation is basically a non-cognitive form of learning in which one's action is shaped by the scheduling of rewards and punishment

(Peretomode, 1991). Reinforcement theory of motivation considers the use of positive or negative reinforcer to motivate individuals.

The theory states that individual's behaviour is a function of its outcomes (consequences). According to Peretomode (1991), behaviour modification to management is based on two basic principles. The first one is Thorndike "law of effect" which states that individuals behaviour with positive outcome (rewarding consequences) tends to be repeated but individuals behaviour with negative outcome (punishing consequences) tends not to be repeated. The second principle formulated by B.F. Skinner states clearly that by providing properly scheduled rewards, it is possible to influence individual's behaviour. Thus, the theory focuses totally on what happens to an individual when he takes some actions. Therefore, the external environment of the school as an organization must be designed effectively and positively so as to motivate the students.

However, there are four methods or techniques of reinforcement available to the business teacher to motivate or modify the behaviour of subordinates in school (Peretomode, 1991). These are: positive reinforcement, negative reinforcement, punishment and extinction.



## **Positive Reinforcement**

This implies giving a positive response when an individual shows a desired and required behaviour. This reinforcement will increase the probability of the outstanding behaviour occurring again.

## **Negative Reinforcement**

This implies rewarding the students by removing undesirable consequences. Here, the students tend to avoid or escape undesired or negative consequences. Negative reinforcement is also known as avoidance learning. Both positive and negative reinforcement can be used for increasing required or desirable behaviour.

## **Punishment**

It implies removing positive consequences so as to lower the probability of repeating undesirable behaviour in future. In other words, punishment means applying undesirable behaviour.

## **Extinction**

This implies absence of reinforcement. It means lowering the probability of undesired behaviour by removing or withholding reward or positive reinforcement for that kind of behaviour.

## **Relevance of the Theory to the Study**

Reinforcement theory of motivation explains in detail how an individual learns behaviour. Teaching and learning especially in business

education (business subjects inclusive) cannot be effective if the desired and necessary resources are not provided in the school. Business subject programme requires adequate teaching strategies, personnel, facilities, equipment, funding for effective skill acquisition and development. These skills and competencies are regarded as desired behaviours. Hence, all the above variables act as motivators and have to be reinforced to ensure continued desirable behaviours (skills and competencies) in the teaching and learning process. This is why reinforcement theory of motivation by B.F. Skinner was adopted for this study. When the resources are not available, they act as punishment and extinction to the entire teaching and learning process. So, adequate availability of resources – effective teaching strategies, facilities, equipment and personnel will act as a positive reinforcement to the teaching and learning of business subjects in secondary schools.

## **Theoretical Studies**

### **Historical Development of Business Subjects in Nigeria**

Business Subjects are unit of vocational and Technical Education that cut across all facets of educational levels in Nigeria. At the Junior Secondary School Level (JSS), it is called business studies, at the Senior Secondary School (SSS), it is called business subjects and at the tertiary level, it is known as business education (Ubulom,2006). Stating further, Ubulom opined that this programme started late in Nigeria

educational system. Vocational business education started as a commercial education about 1930 at Oshogbo in the then Western Region now Osun state with the establishment of clerical training centres that were needed in the office (Ehiamentolor, 1990).

The aim was to train clerical officers that were badly needed at the time to fill up the vacant positions in the office. Between 1940 and 1960, radical impacts were recorded in the historical evolution of business subjects in Nigeria. During this Period, some private individuals and missions established secondary education based institutes for secretarial studies and accountancy thereby preparing candidates for Royal Society of Arts (R.S.A), Pitman's and other professional commercial examinations. These institutes include Ibadan City Academy, Ibadan -1946, Prince College of Commerce's, Lagos -1947, Saka Tinubu High School, Lagos – 1955, Common Wealth College of Commerce, Sheridan – 1959, Government Commercial College, Zaria - 1960, and King's College of Commerce, Bugama in Rivers State – 1956 (Adidu, 1991).

Another notable initiative in the development of business subject in Nigeria was its delivery through correspondence colleges like Rapid Results College, Bennett College, and Pitman's College all based in Britain and some other colleges in Europe and the Far East, where some

Nigerians enrolled to study business courses like bookkeeping, accounts, salesmanship, marketing, management etc.

The discussion so far revealed that business subjects have not been popular in the Nigerian Secondary Schools. According to Ubulom (2006), the unpopularity of business subjects in Nigerian Secondary Schools is due to the bias against vocational education. The public perception of business subjects, which form part of vocational education, is education for the school dropouts. This is further reinforced by the attitude of the Nigerian parents who prefer the conventional grammar to business schools whose curricula were directed towards the training of secretarial and clerical personnel.

The awareness of importance and impact of business on the Nigerian economy was felt at the expiration of the colonial administration in Nigeria in 1960. The need for vocational education was highlighted in the Ashby report of 1960. In 1969, the National curriculum conference was held in Lagos leading to the production of the National Policy on Education, blueprint of 1981, which led to the introduction of business studies as an indispensable field of study incorporated into the junior and Senior Secondary Schools curricula through the 6-3-3-4 system of education (Okolocha & Onyeneke,2013).Therefore,the1969 National curriculum conference sets the stage for the development and restructuring of business courses at various level of education in Nigeria.

At the Junior Secondary level, Pre-vocational subjects were introduced into the curriculum while vocational subjects were introduced into the senior secondary level. The focus of pre-vocational was to expose students at the junior secondary level to the world of work through exploration. Such exposure would enable junior Secondary Students make intelligent career choice and also intelligent consumption patterns. Among the prevocational subjects are practical Agriculture, Home Economics, Introductory Technology and Business Studies. Business studies consist of aspects of Bookkeeping, shorthand, typewriting, commerce, office practice and computer which are integrated.

At the senior Secondary School level, the focus of vocational subjects is to equip the product both intellectually and vocationally depending on their areas of interest, aptitude and capability. Among the vocational subjects are: Financial Accounting, store management, office practice, insurance and commerce (NPE, 2013)

At this juncture, the introduction of business subjects into the secondary school education level constitute a significant departure of our secondary school system from the original grammar school education fashion for Nigerian Citizenry by the Colonial masters, to vocational business education system with emphasis on occupational or utility education with a delivery system that relies on the extensive acquisition

of vocational skills and competencies. It is clear that business subject has received its full recognition as a group of subjects taught and studied today in Nigerian Secondary Schools.

### **Objectives of Business Subjects at Secondary School level**

The objectives of business subjects (business studies inclusive); seem to have been variously stated in different ways. Malik, Khan, Bhutto and Ghouri (2011), noted that the traditional objective of business subjects has been to equip its recipients with personal skills, consumer skills, and knowledge for clerical and managerial abilities needed to adapt to changing economic and business realities. This was re-echoed when Ojukwu (2000), stated that business studies programme have been generally geared towards preparing secondary school graduates for wage-employment suitable to the requirements of large and medium business establishments.

The main objectives of business studies and other related subjects according to Okwuanaso and Nwazor (2000), is to instill in the students a pattern of thinking, develop attitudes and values before such habits become unchangeable. Ihimekpen (2002) claimed that the general objectives of business studies and other related subjects have been to provide training for specific jobs and to develop ability to use these skills in the environment of business, the education of persons to be intelligent consumers of the services of business and a clear understanding of the

nation's economy. The primary objective of business subjects is to provide opportunities for students to develop occupational competencies (Oyedele, 2002). For Nwosu (2002), its primary aim is to prepare people for roles in business enterprises, such roles could be as employee, entrepreneur/employer or simply as self-employed. In the view of Ibigbami (2003), the objective of business studies (business subject inclusive) has come to mean more than preparing students for specific entry jobs in business. Ibigbami advocated that the programme should help people adapt to occupational changes taking place in the recent years.

The objectives stated so far emphasizes that whether paid-employment or self-employment, business subjects exposes individuals to acquire knowledge, skills and attitudes relevant and adequate for employment in specific business occupations with this, it therefore follows that the value of any business subjects could be determined in its ability to adequately prepare and equip individual in such a manner that they could fit into specific jobs or establish their own business on graduating.

Furthermore, some objectives of business subjects are presented as follows:

1. Training of people for specific occupation (Soyode, 2003).
2. Acquisition of practical and applied skills as well as basic scientific knowledge (FRN, 1998).

3. Giving training and imparting the necessary skills leading to the production of crafts men, technicians and other skilled personnel who will be enterprising and self-reliant (FRN, 1998).
4. Giving intelligent knowledge of the science, arts and commerce, which lie at the bases of the industries (Soyode, 2003 quotes Adeife, 1988).
5. Preparing people for entrance upon a business career (Soyode, 2003).
6. Preparing the individual learner to earn a living or to be self-reliant (Soyode, 2003).

The sum of the above is that business subjects have the objective to produce individuals with specific/employable skills or vocation.

With the understanding so developed, each student is made to be aware of the impact of business and economic systems on his or her life as a consumer of goods and services as well as a working member of the society. At this phase, provision is made through business subjects for all occupational and personal activities. In the same vein, Okoye & Eze (2010) opined that business subjects have two main objectives, namely: the provision of occupational instruction for students desiring careers in business and the development of consumers and economic understanding and competences of student.



The goal of business subjects at all levels, according to Azuka (2003), is to provide training in business skill and to develop ability to use these skills in working environment. At the tertiary level of education, the focus of business education is on career development and specialization (Akhere & Frankie-Dolor, 2003). At this level, according to Okolo and Okoli (2001), its mission is to train the necessary manpower for industry, teaching, business, and public and private business establishment.

Business subjects, as analyzed so far prepared graduates to follow either education or business as a career. It prepares them to perform business activities that are common to many professions and basic for industries.

### **Importance of Business Subjects in National Development**

The need for the individual to obtain a quality and functional education that would equip him with the attitudes, knowledge, understanding and skills to enable him survive in a turbulent business and work environment of ours cannot be overemphasized. Amaewhule (2000) confirmed this assertion while stressing the need for the individual to obtain a type of education that would equip him with knowledge and economic understanding in order for him to be highly functional in the society. This is because education is an important ingredient of national development (Ehiametator, 1990) and its

development in any society is considered vital to the overall development and modernization of that society (Gusua, 2008).

Career in business subject includes knowledge in technical education, commercial education and vocational education, which makes individual involved to be competent and to contribute greatly to the national development through the acquisition of business skills, understanding and ideas to enable him identify problems in a crucial situation and to find solutions to such problems, which will have a beneficial effect on both himself in particular and the society at large (Oyenuga, 2003).

In fact, one of the rationales for the emphasis on business subject is the fact that it is a skill for gainful employment even if the students terminate their formal education prematurely (Aliyu, 2002). Due to its relevance in national development, business subject is an important part of the total education program in most advanced countries of the world (Aina & Olu, 2009), and Nigeria is not excluded. Business subject permeate the entire life of the nation because it touches all of us collectively and individually (Aliyu, 2002). These views therefore stressed the importance of, and roles of business subjects in particular and education in general in national development.

Business subjects can be helpful in the unemployment economy by reversing the trend, which can also reflect in the rural urban drift.

Training in business subject according to Oyenuga (2003), is expected to make the recipients stand on their own because of the knowledge, skills and creative ability they have gained, which are also needed for self-employment without relying on government for salaries jobs and thereby discourage the mass movement of people to the urban areas. When individuals are properly trained in business subjects, they will be able to work for themselves and also employ others to work with them.

Stressing about the importance of business subject's Aliyu (2002) stated that one of the rationales for the emphasis on the programme is that, it is a skill for gainful employment even if the student terminates their formal programme prematurely. Training received through business subjects' programme, it is believed would position the individual to participate or contribute effectively to the economic development of the society. This active participation can be achieved either through paid employment or through self-employment. From the foregoing therefore, this researcher observed that the importance of business subjects to the national development cannot be over-stressed. This is sequel to the fact that the programme plays prominent role in solving problem of manpower development and unemployment of the nation. In all aspects to Nigerian economy business subjects graduate seem to play one role or the other as employees or employers.

## **Relevance of effective teaching of business subject at secondary school level in Nigeria**

The obvious intention of federal government in introducing business subjects in Nigerian Secondary school system was to equip the citizens with appropriate skills for employment; abilities and competencies that will enable them play citizenship roles, be self-reliant and as well engage in higher studies (NPE, 2013). Nurudeen (2011), disclosed that towards producing Secondary School leavers who are well prepared for higher education as well as having relevant functional trade and entrepreneurship skills needed for job creation, poverty eradication and wealth generation, the federal government launched a new curriculum called Senior Secondary Education Curriculum (S.S.E.C).

The curriculum which commences in September 2011 is to equip graduates from senior Secondary School for higher education and at the same time, possess the relevant technical, vocational and entrepreneurship skills. These goes to show that business subjects curriculum at the Secondary School level has the potentials to prepare one to secure a job, establish personal business and as well pursue higher academic career in business area. However, many researchers were of the opinion that these laudable objectives can only be achieved if the proper strategies were employed in teaching and learning business subjects in Secondary Schools.

In the same vein, Shyllon (2006) was of the view that business subjects can develop the employable skills of every individual. Shylon stressed that with the current rate of unemployment in the Country, business subject, stands out to develop and promote employable skills of every students. This objective is achievable if the right teaching strategies are effectively applied in the teaching and learning situation. Against this backdrop, lack of practical skills and unemployment among secondary school leavers also attracted the attention and comments of some well-meaning Nigerian. Shagari (2007) lamented that the unemployment situation in Nigeria is alarming, worrisome and a time bomb waiting to explode.

Fashola (2011), on the other hand, decried the high rate of unemployment in the country despite its abundant resources. Fashola advised education administrators in Nigeria to introduce practical skills acquisition programme and courses in school curriculum in order to empower the students with relevant job and entrepreneurial skills. Fashola disclosed further that many business educators in Secondary schools across the country seem not to be responding to the clarion call by the government, education authority and international communities to be more responsive to students skills acquisition and qualitative education, not only to eradicate unemployment in our society but also to

attend the millennium Development Goals (MDG's) in Nigeria by the year 2020.

Ufomba (2009) stressed the need for students to learn practical skills which makes for life and living while in schools. Ufomba continued by saying that unemployment is on the increase in the country. Our school leavers possess little or no employable skills. Joblessness on its own part has resulted to rising incidence of social ills among young people. To arrest the rising tide of social unemployment and poverty, practical skills acquisition becomes the answer.

Obi (2005), observed that the ineffective teaching strategies used by business teachers in teaching business subjects at the Secondary school level, have failed to produce students with the needed skills for employment or self-employment. Okoh (2004) disclosed that the unemployment of unskilled graduates is due to ineffective teaching of business subjects. The teaching of business subjects at secondary school level supposed to be dynamic, practice-oriented and activities base through the application of different effective teaching strategies. Okoh advised business teachers to be conversant with the use of various teaching strategies and the use of instructional materials in order to make teaching and learning effective. This is important hence the final result of student will also determine the teacher's effectiveness.

In another development, Udoh (2006) clearly stated that acquisition of practical skill for paid or self-employment is at the center of business education and youth empowerment. Udoh stressed further that: any youth without practical skill is without a future and any business studies programme which does not pay adequate attention to how students will acquire and practice practical skills is not useful.

Hanson (2010) added that in teaching practical skills in business subject, many strategies could be used, the major consideration should be effectiveness, because wrongly used strategies leads to poor learning experience and incorrect performance. Therefore, to teach students how to acquire and practice skills in a manner that will produce skillful youths then becomes one of the greatest challenges to business teachers. Hanson concluded by stating that a skillful person performs a task with little or no difficulty, mistake or distraction.

Olaoye (2003) is worried that many business educators in secondary school across the country seem not to be responding to the clarion call from the government and international organizations to be more responsive to student's vocational skill acquisition and how well students are prepared to face the future challenges outside the school system. Ohiwerie (2009), on the other hand remarked that experience has shown that most people are not interested in business subjects as a profession with the mindset that it is a programme which upon

graduation, there is simply no opportunity for securing a job. In the same direction, Oketa (2001) decried the high level of unemployment among youths of this country. Oketa underscores the need for business subject teachers to employ effective strategies in their teaching so that the much needed practical skills will be acquired by the students.

### **Effectiveness of Direct Instructional Strategies in Teaching Business Subjects in Secondary Schools**

Direct instructional strategies are one of the six groups of instructional methods proposed by Mannison (2009), for teaching business subjects at secondary school level. It is highly teacher directed and is among the most commonly used methods of instructional delivery. Kauchak and Eggen (2008) opined that teachers prefer methods that make their work easier based on their beliefs, personal preferences and norms of their discipline. In this regard, some teachers believe that lessons should be teacher-centered, where the teacher is the expert and the authority in presenting information (Ahmad & Aziz, 2009)

Teachers centered method is behaviorist in nature. The teacher direct learning that follows the instructivist approach which involves careful and meticulous planning of the curriculum and purposeful instructional procedures employed by the teacher. Under such circumstance, students have a definite and fixed perception of their roles as listeners, while teachers are expected to be the talkers and



custodians of knowledge (Odundo, 2009). This implies that student's active participation is minimal, until the teacher authorizes them.

Direct instructional methods as perceived by the researcher are known as traditional methods, where teachers are at the center of classroom activities, including explanations and discussions. Tanner (2009), found that teachers dominated classroom discussion and student discussed only when called upon to answer questions. Tanner listed the examples of direct instructional strategies to include: Lecture, Explicit teaching, drill and practice, didactic questions, demonstration and guided instruction. According to Chika (2012), direct instructional strategies are effective for providing information or developing step-by-step skills. It is also effective when actively involving students in knowledge construction as well as developing their abilities and attitudes required for critical thinking and interpersonal learning. In the opinion of Curtin (2005), direct instructional strategies are considered among the easiest strategies in planning and usage. Direct instructional methods are associated with imaginative, critical and creative skills, active participation of students in the learning process through discussion and intellectual engagement, as well as higher learning achievement and effectiveness in addressing problems of humanity (Eken, 2000, Curtin, 2005, Floyd 2007, Ahmad and Aziz, 2009, Dufresne, 2010). However, teacher –centered methods are associated with a number of short comings such as inadequate

stimulation of student innovative capacities, intellectual thinking, memorization, cramming of facts, poor knowledge retention and high dependency among graduates (Adeyemi 2008, Mc Dowell, 2001, Tanner, 2009, Tella, Indoshi & Othuon, 2010).

Adeyemi (2008) noted that lecture, which is the most common method, does not stimulate student's innovation, inquiry and scientific thinking but rather encourages students to cram facts, which are easily forgotten. Based on this, Mc Dowell (2001), decried that instructional methods that encourages memorization and reproduction are short of knowledge that can be used to solve problem in new situations. This makes Tella, Indoshi and Othuon (2010) to state that teacher-centered methods often result to student not enjoying lessons and missing the benefits of intellectual discovery.

In this regard, Nwodo (2006) conducted a study which compared the effectiveness of lecture method and demonstration method in teaching accounting in secondary schools in Lagos State. Notably, account is one of the core business subjects. Nwodo's investigation revealed that lecture method is rarely effective in teaching accounts. Demonstration method was recommended as very effective for teaching accounts in secondary schools based on the finding that students performed better when taught with demonstration method.

## **Effectiveness of Indirect Instructional Strategies in Teaching Business Subjects in Secondary Schools**

Indirect instructional strategies as defined by Ellis and Worthington (2005), involves teaching methods that are effective for fostering creative and development of individual skills and abilities. They observed that these strategies are also effective when seeking a high level of student's involvement in observing, investigating, drawing inference from data and forming hypotheses. Unlike the direct instructional strategy, indirect instruction is more student-oriented and can be used to complement the direct instruction methods (Zeeb, 2004). It encourages students to be more involved by observing, questioning, problem-solving, forming inference. This implies that students can explore their desire to learn.

In the same vein, Tella, Indoshi and Othuon (2010), opined that indirect instructional strategies are effective when thinking outcome, attitudes, value or personal outcomes are desired, as well as when process is as important as product with the focus on personalized understanding and lifelong learning capacity. Teachers prefer methods that make their work easier based on their beliefs, personal preferences and norms of their discipline (Uwaifo & Uwaifo, 2009).

Although teachers have the discretion to choose methods for delivering lessons to their students, Chika (2012), observed that indirect instructional delivery is a powerful strategy for improving learning achievement in examinations and application of knowledge and skills

acquired. Zeeb (2004) stated that indirect instructional methods activity engage students in the learning process for effective mastery of the subject matter and promotion of a positive attitude towards the subject.

According to Odundo (2009), the teaching approaches adopted should make learning more learner-centered in order to promote imaginative, critical and creative skills in students resulting in better achievement of instructional objectives. This implies that indirect instructional strategies avail the student with participatory roles to lead discussion while the teacher becomes the facilitator. In this regard, teachers facilitate students discussion and interject only when necessary, allowing students to put the language to use and explore aesthetics of learning materials (Eken, 2000, Ahmad and Aziz, 2009). Also, Chang (2010) opined that indirect instruction takes advantages of student's interest and curiosity, often encouraging them to generate alternative to solve problems.

In the use of indirect instruction, Adawo, (2011), stated that the role of the teacher shift from lecturer/director to that of facilitator, supporter and resource person. The teacher arranges the learning environment, and, when appropriate, provides feedback to students while they conduct the inquiry. In the view of Froyd (2007) the standard features of indirect instructional strategies include collaborative learning, connecting new information to previous knowledge and critical thinking.

The definitions and explanation given so far of the concept of indirect instructional strategy revealed that indirect instruction pedagogy is an interactive learning process within classroom that encourages students to be more involved. According to Uwaifo, & Uwaifo (2009), indirect instructional strategy is most appropriate when:

1. Thinking outcome is desired.
2. Attitude, value, or interpersonal outcomes are desired
3. Process is as important as product
4. Students need to investigate or discover something in order to benefit from later instruction.
5. There is more than one appropriate answer
6. The focus is personalized understanding and long term retention of concept.
7. Ego involvement and intrinsic motivation are desirable.

Interactive pedagogy may also include the use of media and involvement of student in fieldwork activities (Chika, 2012). Furthermore business subject teachers using indirect instruction methods should allow for diverse learning styles among their students and encourage active involvement of all students while helping them to improve in individual weakness (Curtin, 2005)

Indirect instruction involve concepts like problem solving, case studies, reading for meaning, inquiry, reflective decision, writing to

inform, concept formation, concept mapping, concept attainment and close procedure. Despite the advantage mentioned above, there are some disadvantages to the use of indirect instruction.

Arends (2007) listed them as follows:

- Not very effective for elementary level students
- Time constraints may cut down discussion opportunities
- Teacher needs to be better prepared in handling questions and give proper instructions.
- Needs to be relevant to the students need.

Taylor (2009) found that student learning achievement was significantly related to the instructional methods used by teachers. In this regard, the methods used to deliver lessons had a greater impact than the content covered in a course of study. In another study, Chang (2010) investigated the effectiveness of direct instruction and indirect instruction pedagogical methods on the performance of students. The study found that indirect instructional methods were effective in influencing the perception of students towards science subjects. Students placed more values on active participation in-group discussions than attendance of lectures. Indirect instructional methods foster greater flexibility in teaching a stimulate intellectual engagement with teachers and among students (Chang, 2010).

## **Effectiveness of Interactive Instructional Strategies in Teaching Business subjects In Secondary Schools**

Mannison (2009) defined interactive instructional strategies as one that relies heavily on discussion and sharing among participants. Discussion and sharing provides learners with opportunities to react to the ideas, experience, insights, and knowledge of the teacher or peer learners and to generate alternative ways of thinking and feelings (Adeyemi, 2008). Stressing further, Adeyemi opined that students can learn from peers and teachers to develop social skills and abilities, to organize their thoughts, and to develop rational arguments. According to Chang (2010), the interactive instructional strategy allows for a range of groupings and interactive methods. These may include total class discussions, small group discussion or projects, or students pairs or triads working on assignment together.

In the opinion of McDowell (2001), interactive instructional strategies involves discussion and sharing amongst students, explores their higher-thinking process and gives opportunity to develop social skills. Teachers need to have the expertise to facilitate discussions and manage the group dynamics. The opinions of Mannison (2009) and McDowell (2001) are the same when they emphasized that interactive instructional strategy depends solely on discussion and sharing among students.

Young (2001) was of the view that interactive instructional strategies are very effective for the development of job and social skills. According to Young, interactive instruction has the potentials to organize the learners taught, rational thinking and argument. It is effective in observing, listening, interpersonal learning, Intervention skills and abilities especially in learning practical skills. Young went further to state that under these strategies, learning is an interactive process and students need to be actively involved in tasks that are achievable, useful, relevant and challenging in order to respond positively to the ever changing socio-economic system. However, young noted that the success of the interactive instructional strategies with its many methods is heavily depending upon the expertise of the teacher.

Sequel to this, Nwalado (2008), stated that a business teacher should consider the subject matter, students needs, the programme objectives, time and space in choosing effective strategies. Nwalado advocated that discussion, role play, resource person, question and answer methods grouped under interactive instructional strategies are effective in teaching business subjects in secondary schools.

According to Chang (2010), the advantages of using interactive instructional strategies is to encourage equal participation by students, make the students to be creative and logical in thinking, improve concepts of responsibility and team cooperation. It also create activities



leading to a stimulating and enriching experience for the students, make the students learn to be patient and compassionate with one another and create in the student the idea of sharing of knowledge and experiences leading to enhanced learning.

Apart from the merits mentioned above, there are some demerits to the use of interactive instructional strategies (Arend, 2007). These includes the uncomfortably of students in sharing their experiences with one another due to incompetencies, overshadowing of group efforts by the brighter and aggressive students and the dependencies of value of learning on students capabilities and skills.

### **Experimental Instructional Strategies in Teaching Business Subjects at Secondary School**

Experimental instructional strategy according to Smith (2011), is the process whereby students 'learn by doing' and by reflecting on the experience. Obikwere (2009) disclosed that experimental strategies are very effective in exposing students to a particular skill or experience. It is also very effective when the subject matter requires observation, analyzing, generalizing and application. Obikwere opined further that these strategies are effective in formulation of plans for teaching practical skills as well when teaching is focused on learning process rather than products, and finally classified retention rates as follows:

Lecture 5%, reading 10% Audio visual 20% Demonstration 30% discussion group 50% practice by doing 75% and teaching other 90%.

Imarhiagbe (2003) also carried out an investigation on effectiveness of experimental teaching strategies. Imarhiagbe concluded that workshops or laboratory practice, Demonstration method, field trip, school/industrial co-operative methods are very effective for teaching skills. Stressing further, Imarhiagbe affirmed that the success of a teacher depends not on the possession of skill in a trade or subject alone but, upon the efficiency with which the teacher uses effective methods of organization and presentation of his subject. Stressing further, Imarhiagbe pointed out that most business teachers do not check the effectiveness of the teaching strategies which they use, that this results to failure and poor performance of their students. In the same vein, Chika (2012) described experimental instructional methods as learning methods that focuses more on activities and requires the students to apply their experience to other contexts. It is more about the process of learning rather than focusing on the context. This means that students participate in the activities, reflect and share their experiences, analyze and infer the solutions and formulate plans to apply their learning in new situations. Experimental learning involves field trips, narratives, experiments and stimulations, games, storytelling, role-playing and model building.

According to Curtin (2005) the benefits associated with experimental methods includes improved team building skills and group interaction, problem situation in creative ways to generate interest, encourages self-investigation, acceptance of others point of view as well as exploring solutions to problems. Others includes provision of platform for students to practice skills, face challenges as well as quick grabs of attention and keeps the students focus. Despite the advantages mentioned above, there are some disadvantages associated with the use of experimental instructional methods. According to Chang (2005), shy or self-conscious students may not take an active role during experimental instructional delivery, immediate negative feedback can lead to demotivation of students, experimental instructional method could be time consuming and difficult to arrange, distractions could lead to ineffectiveness and may also focus on the subject. Finally, the efficiency of students depends on teacher's ability to be impartial creative and friendly.

### **Independent Instructional Strategies in Teaching Business Subjects at Secondary School**

Barbra (2009) defined independent instructional strategies as a range of methods that are effective for developing individual student's initiative, self-improvement and self-reliance that are aimed towards self-employment. Barbra stated further that independent instructional strategy assist students to become self-sufficient and responsible

citizens by enhancing individual potentials. More so, to ensure lifelong skills in times of rapid socio-economic changes, students need to acquire lifelong learning capacity.

Independent instructional strategies according to Cummins (2007) encompass a range of teaching methods that develop student's skills like initiative, self-belief, time management and self-improvement. Students are encouraged to undertake a planned activity under the supervision of a teacher or guide. It also involves group study or learning with an assigned partner.

These methods are designed by the teachers carefully to address the specific requirements of a group. Froyd (2007) opined that as a teacher, one would need to plan the feedback collection, monitor performance, and provide the appropriate resources for independent study.

Bush (2006) states that one major hurdle independent study students face is preparation for examination. Independent instructional strategies focus on essays, journals and reports, homework, research projects, assignment. Eken (2000) opined that the advantage of the independent instruction is that it enhances student's rate of leaning, adaptability and self-reliance, give opportunity for a disciplined approach to problem solving and improve their confidence. Since students find solutions to problems independently, the skill and knowledge acquired

are retained easily. Despite the advantages mentioned above, there are some disadvantages to the use of independent study (Arends, 2007). Independent study is not effective for elementary level students and complex subjects that need detailed explanation, requires self-motivation and group skills and efficient planning/monitoring from the teacher.

### **Effectiveness of Materials/Visual Aids Instructional Strategies in Teaching Business Subjects at Secondary School.**

Mannison (2009) defined materials/visual aids instructional methods as strategies which involves the use of instructional materials and visual aids in teaching and learning process. This implies that in the use of this strategy, video tapes, Audio tapes, radio programmes and the use of television are employed to enable the learner to learn through sight and sound.

Tema (2007) posited that the teacher centered methods used in the past are now being relegated in preference to student-centered methods. Tema stressed further by defining instructional strategies as various means of teaching students in order to achieve the desired or stated objective of business studies. Moreover, Tema specifically emphasized on video tape and television which is classified under material/visual aids strategies, stressing that an average Nigeria of secondary school age spends more time watching video and television than reading text books, and therefore suggested that since their interest

is now shifted to watching rather than reading, teachers should also change their strategies towards the same direction.

According to Tema, these methods are most suitable for teaching skill subjects. In this regard, Hanson, (2010) opined that some teachers claimed to get their students stimulated whenever they teach with some leaning aids, and in addition students attitude generate more interest for the lessons they teach, thereby helping to participate better in class. Hanson (2010) stated further the advantages of material/visual aid instructional strategies as follows; audio visual material arouses learner's interest, students get anxious and develop a learning habit when the teaching method or medium appear real to them and are not abstract, the material help the teacher to present his/her lesson clearly and effectively and this in turn catches the attention of the pupils. Moreso, Hanson stressed that instructional materials are important because with them learners have a clear view of what is being taught and to learn well as to reduces the stress involved in the process of teaching and learning. Apart from that, audio visual aids in the classroom enhance teaching methods and improve student's comprehension. The teaching materials help to get the attention of the students, make the class more realistic and it gives a view point to key point on the topic. Finally, instructional materials give proficiency to teachers and also help students to get true picture of what is being taught.

People learn in different ways, some people are good in retaining information passed to them orally, while some others are extraordinary good in retaining information through what they read, and others through picture and some other means. Generally, findings and statistics have shown that the best means of facilitating or enhancing good teaching and learning is through the use of instructional materials which encompass audio visual materials like radio, charts and projector of various kinds.

### **Empirical Studies**

In this section, related empirical studies that have some relationship with this present study are hereunder reviewed. Njoku (1992) conducted a study on effective method of teaching business studies in Imo State of Nigeria. Njoku decried the non-use of appropriate and effective strategies as one of the greatest deficiencies in teaching business studies. The major objective of the study was to determine teacher's views on effective methods for teaching business studies. Two research questions, one hypothesis, survey design and a sample of 90 business teachers were used for the study. Data obtained were analyzed by mean rating and frequency statistics. The data analysis revealed that the predominant method used in teaching business studies was lecture method while demonstration and discussion were sparingly used. Field

trips, laboratory exposure, role play and resource persons methods were not used at all.

However, Njoku's study has its focus on method of teaching business studies, thereby differ from the present study which focuses on strategies considered effective by business teachers in south-south, Nigeria for teaching new business subjects in secondary schools. This is related to the present study in the area of research design, objective of the study and method of data analysis.

In a similar study carried out by Umezulike (2007) on the strategies considered effective by Secondary School teachers in South-East geopolitical zone of Nigeria for teaching accounting. The design for the study was survey, and the study population was 640 teachers. Sample of 220 accounting teachers were used as respondents for the study. Data obtained were analyzed with mean and t-test statistics. The study revealed that computer assisted instruction, inquiry role play, field trips are effective strategies for teaching accounting, but the accounting teachers in South East of Nigeria do not consider project, debates, use of television and lecture methods as effective strategies for teaching accounting at secondary school.

This study is related to the present study in terms of objective of the study, method of data analysis and research design. The most important area of deviation is that while the 2007 study by Umezulike is



directed on effective strategies for teaching accounting as a business subject, the present study is focused on strategies effective by business subject teachers in south-south, Nigeria for teaching new business subject for practical skill acquisition using the six groups of instructional strategies proposed by Mannsion (2009) since the ultimate aim of teaching and learning accounting and other business subjects on individual or group basis is acquisition of vocational skills.

Olowodun (2009) conducted a study on the strategies for effective teaching of accounting in senior secondary schools in Kaduna state of Nigeria. Olowodun was worried about the failure of business as a result of poor and improper keeping of accounting records. The research design was survey, one research question and one hypothesis guided the study. A questionnaire of 14 items was used as instrument with a sample size of 105 accounting teachers in 70 senior secondary schools in five education divisions of Kaduna State.

The data collected were analyzed using mean and standard deviation for research questions and z-test statistics at 0.05 significance level to test the null hypotheses. The result revealed that accounting teachers in Kaduna state use in-effective strategies which have led to poor performance of students in examinations and acquisition of poor accounting skills and competencies for performance on the job after graduation. Olowodun did not state those ineffective strategies which

accounting teachers in Kaduna State used that resulted to failure. The 2009 study by Olowodun is related to the present study in terms of research design, objective of the study and method of data analysis. The most important area of deviation is that while Olowodun study was directed on effective strategies for teaching accounting as a business subject in senior secondary schools in Kaduna State of Nigeria, The present study is focused on strategies considered effective by business subject teachers in south-south, Nigeria for teaching new business subjects (accounting inclusive) for practical skill acquisition.

Another study was conducted by Rosle (2009), titled “Teaching – learning method in accounting education”. The purpose of the study was to determine teacher’s views on effective method of teaching accounting in Malaysia. Accounting was introduced in 1993 in secondary schools in Malaysia, but became critical when the government launched the second industrial master plan which required 79,000 accountants by the year 2020. Two research questions and one hypothesis, 200 accounting teachers and 300 students from all the districts in Malaysia, were surveyed. Rosle found out that experimental or practical independent or investigative and material/visual aid strategies were considered effective for teaching accounting in secondary schools in Malaysia.

This study in Malaysia has relevant areas of relationship with the present one especially in its objective and methodology. The major

difference is that the two studies were conducted in two separate economic and social environments, also, the study by Rosle (2009) was specifically on effective strategies for teaching accounting, while the present study has its focus on effective strategies for teaching business subjects aimed at enhancing the performance of accounting on the job upon graduation. The major challenge to the present study in south-south, Nigeria is to determine whether these recommended strategies in Malaysia could be effective in teaching business subjects in Nigeria specifically in south-south geo-political zone.

In a related study conducted by Okolocha and Onyeneke (2013) on secondary school principals' perception of business studies teachers' teaching effectiveness in Anambra State, Nigeria. The purpose of the study was to determine the perception of Anambra State principals on the effectiveness of business studies teachers in classroom management, time management, and the use of lesson note for instruction. The population of 261 public secondary school principals in Anambra State was used as sample for this study. Four research questions and three null hypotheses guided the study. The study adopted the survey research design. Mean and standard deviation were used to answer research questions while z-test was used to test the hypotheses. This study is related to the present study in terms of research design and method of data analysis. However, Okolocha and

Onyeneke's study focused on the effectiveness of business studies teachers in classroom management, time management and the use of lesson note for instruction thereby differ from the present study on the strategies considered effective by business teachers in south-south, Nigeria for teaching new business subjects in secondary schools.

Ganyaupfu (2013) conducted a study on teaching methods and students' academic performance. The objective of the study was to investigate the differential effectiveness of teaching methods on students' academic performance. A sample of 109 undergraduate students from the college's department of economic and business science was used for the study. Four research questions and four research hypotheses were used for the conduct of the study. A survey research design was adopted. Using the inferential statistics scores, student assessment test scores were derived from the internal class test prepared by the lecturer. The differential effectiveness of the three teaching methods on student academic performance was analyzed using the general linear model based univariate ANOVA techniques. The  $F(2,106)$  Statistics ( $= 10.125$   $P < 0.05$ ) and the turkey HSD post-hoc results indicate significant differences on the effectiveness of the three teaching methods. The mean score result demonstrate that teacher-student interactive method was the most effective teaching methods,

followed by the student centered method while the teacher centered approach was the least effective method.

The study is related to the present study since interactive method of teaching used by this study is an aspect of the six groups of instructional strategies proposed by Mannison (2009), and adopted by the present study. Furthermore, both studies used survey research design. Nevertheless, Ganyaupfu study focused on teaching methods and students academics performance thereby differ from the present study that emphasizes on the strategies considered effective by business teachers in south-south, Nigeria for teaching new business subjects in secondary schools.

In a similar study carried out by Akanbi (2013) on Teacher-directed, student-directed instructional strategies and gender as predictor of students' entrepreneurship knowledge in Biology in Oyo State, Nigeria. The study adopted pretest-posttest, control group-quasi experimental design using 3 x 2 x 2 factorial matrix. 360 students were randomly selected from six secondary schools in four Local Government Area in Ibadan. Three research questions were posed and three research hypotheses were tested at 0.05 level of significance. Data were subjected to analysis of covariance and Schaffer post hoc test. Treatment had significant main effect on students entrepreneurship knowledge ( $F(2,347) = 658.08, P < 0.05$ ). Students in the teacher-

directed group had the highest mean score ( $x=38.04$ ) followed by student-directed ( $x=37.93$ ) and conventional method ( $x=17.33$ ). Gender had a significant main effect on students entrepreneurship knowledge ( $F(1,347)=8.09$ ,  $P<0.05$ ). Teacher-directed and student-directed biology instructional method had positive effects and therefore encouraged entrepreneurship among senior secondary school students taking into cognizance their gender. This study is related to the present study since experimental instructional method of teaching used by this study forms an aspect of the six groups of instructional strategies proposed by Mannison (2009) and adopted by the present study. The most important area of deviation is that the 2013 study of Akanbi emphasizes on teacher directed, student directed instructional strategies and gender as predictor of students entrepreneurship knowledge in biology thereby differ from the present study.

Akpomi and Okwuanaso (2014) studied teaching strategies in business education for sustaining information and communication technology learning in the Niger Delta tertiary institutions. Two research questions were posed to guide the study, and one hypothesis was formulated and tested at 0.05 level of significance. A total of 245 lecturers were studied in the institutions that offer business education within the Niger Delta. There was no sample. Data for the study were analyzed by the use of mean rating and standard deviation. Findings

revealed that teaching strategies adopted by lecturers in business education department are effective for sustaining ICT learning.

The study differs from the present study in the areas of its population, purpose of study and study area. However, the study is related to the present study since it emphasizes on teaching strategies in business education (Business Subject inclusive) which is considered in the present study. The most important areas of disparity is that, while Akpomi and Okwuanaso studied teaching strategies in business education for sustaining information and communication technology learning in the Niger Delta tertiary institution, the present study is focused on the strategies considered effective by business teachers in south-south, Nigeria for teaching new business subjects in secondary schools.

In a similar study carried out by Ibegbu (2010) on the effect of team teaching on secondary school student's achievement in Business studies in Onitsha North Local Government Area of Anambra State in Nigeria, the purpose of the study was to determine the achievement of students taught in secondary school business studies by team teaching and those taught with conventional method. A sample population of 180 students from the Local Government Area was randomly selected for the study and the study adopted quasi experimental design. The instrument for data collection was an achievement test on the subject. Three

research questions were answered using mean and standard deviation while three research hypotheses were tested using t-test. It was discovered that team-teaching has significant effect on the student's achievement and so team teaching was recommended for teaching secondary school business studies. The 2010 study conducted by Ibegbu is related to the present study since it emphasizes on team teaching which is an aspect of indirect instructional strategies considered in the present study. The most important areas of deviation is that, while Ibegbu study sorts to determine the effect of team teaching on secondary school student achievement in Business studies, the present study is focused on the strategies considered effective by business teachers in south-south, Nigeria for teaching new business subjects in secondary schools for practical skill acquisition using the six groups of instructional strategies proposed by Mannison (2009).

Odundo and Gunga (2013) carried out a similar study on the effect of application of instructional methods on learner achievement in business studies in secondary schools in Kenya. Primary data was obtained from 288 form four business studies student across the country. A mixture of probability and non-probability sampling procedure was used to select students and teachers for inclusion in the study, two research questions and two null hypotheses was used for the conduct of the study. A survey research design was adopted for the study. It was



found that take away assignment accounted for largest proportion of variance and improved student performance (9.1%), brainstorming (8.8%), group discussion (7.9%), lecture (6.3%) and chalk board notes (5.9%) thus giving prominence to constructivist approach.

Odundo and Gunga study is related to the present study in the study design. The most important area of differences in their study is that, the present study focused on the strategies considered effective by business teachers in south-south, Nigeria for teaching new business subjects in secondary school for practical skill acquisition using six groups of instructional strategies proposed by Mannison (2009), while Odundo and Gunga study focused on the effect of application of instructional methods on learner achievements in business studies in Kenya's secondary schools.

Uwameiye and Titilayo (2005) conducted a study on the comparative analysis of two methods of teaching financial accounting at senior secondary school. The purpose of the study was to investigate the effect of the conventional method of teaching vis-a-vis the effect of an alternative method of teaching (guided discovery method of teaching) on students' performance in financial accounting. The sample size of the study was 280 senior secondary school two (SS2) financial accounting students drawn from 22 public secondary schools in Okiti pupa Local Government education area of Ondo State in Nigeria. A survey design

was adopted with two research questions and two research hypotheses for the study. Findings of the study indicated a difference in pretest and posttest performance scores of students in control and experimental group, and mean performance score of student taught with guided discovery method and those taught with conventional method in financial accounting achievement post test scores. The study is related to the present study in terms of design and objective. The most important area of deviation is that while Uwameiye and Titilayo study of (2005) investigates the effect of conventional method of teaching vis-a-vis the effect of an alternative method of teaching (guided discovery method of teaching) on students' performance in financial accounting, the present study is focused on strategies considered effective by business teachers in south-south, Nigeria for teaching new business subjects in secondary schools for practical skill acquisition using the six group of instructional strategies proposed by Mannison (2009).

### **Summary of Literature Reviewed**

The reviewed literature revealed that recently, the awareness about the new business subject curriculum in secondary school seem to be high, although several meaning of business subjects exist no generally acceptable definition has been arrived at. This researcher noticed from the reviewed literature that the objectives of business subjects' curriculum center on preparing the beneficiaries for higher

education as well as having relevant functional trade and entrepreneurial skills needed for poverty eradication, job creation and wealth generation. This is an indication that business subject is a dynamic field of study geared towards preparing secondary school graduates to fit into business industries.

The review of literature has revealed that the teaching and learning of business subjects is based on effective teaching strategies. Being a vocational discipline, it requires adequate teaching methods, facilities, personnel and conducive learning environment for effective teaching and learning of its concept and contents. The essence of adequate and sufficient personnel, facilities and effective teaching strategies etc, is to enable it attain its goals and objectives. Unfortunately, it was discovered from the review of literature that business subjects programme is having the challenge of inadequate teaching methods and resources both human and non-human in the various schools of learning.

Furthermore, literatures on related learning and motivational theories were reviewed in course of the study. Moreso, the literature reviewed provided the required help in the compilation and organization of this chapter yet one thing was noticeable. All the studies available to the researcher on teaching business education (business subjects inclusive) were conducted based on teaching methods instead of effective teaching strategies. Again, the contributions of Thorndike and

B.F. Skinner's theories were of immense value to the present study. These are the gaps that the review of literature has uncovered which gave the needed impetus for the present study.

## **CHAPTER THREE**

### **METHOD**

This chapter describes the method that was used to conduct the study. The chapter is presented under the following subheadings: Research design, area of the study, population of the study, sample and sampling techniques, instrument for data collection, validity of the instrument, reliability of the instrument, methods of data collection and method of data analysis.

#### **Research Design**

The design used in this study was a survey research design. The descriptive survey design was considered appropriate for the study because it involves exploration of business teachers in all the public secondary schools in south-south, Nigeria regarding instructional strategies they consider effective for teaching business subjects. Supporting this, Umezulike (2007) in a similar study titled "strategies considered effective by secondary school accounting teachers in the South/East geo-political zone adopted a survey research design because the study was directed towards teachers and their opinion and was found successful. This agrees with the opinion of Amadi (2011), who conceived that the most suitable research design when individual opinions are required should be survey.

## **Area of the Study**

The study was carried out in public secondary schools in south-south geo-political zone of Nigeria. The zone is made up of six States viz: Akwa-Ibom State, Bayelsa State, Cross Rivers State, Edo State, Delta State and Rivers State.

Majority of the people living in south-south zone have passion for fishing, farming and carving/weaving rather than trading. Inclusively, the passion for education cannot be ruled out. Evidently, the increase in the number of public secondary schools that offer business subjects established in south-south geo-political zone indicates the peoples' value for education. The choice of the area for the study was informed by the high value placed on education by the people of the zone.

## **Population of the study**

The population for this study consisted of all the 13,290 business subject teachers in public secondary schools in the South-South geo-political zone of Nigeria. The South-South geo-political zones of Nigeria covered six States as mentioned in the area of the study. Records from the Post primary School Management Board (P.P.S.M.B) of the six states for 2013/2014 academic year indicated that there were 13,290 business subject teachers made up of 4,939 males and 8,351 females. Therefore, 13,290 business subjects' teachers formed the population for this study. See Appendix 1, p.142.

## **Sample and Sampling Techniques**

A sample of 1,329 business subjects teachers were drawn from the total population of 13,290. The 1,329 business subject teachers were selected using the proportionate random sampling techniques. The proportion was based first on the population size of teachers of business subjects in each State and then on gender. This was done by composing the sample size for the study using 10% of business subject teachers population across the secondary schools in the six states of the south-south, Nigeria. This percentage was confirmed by Denga and Ali (1983), as cited by Ogolo (1996), and Ubulom (2006), reported from empirical evidence, that in a situation where the population is known, at least 10% of it should be drawn to constitute a researchable sample. Furthermore, the results produced 1,329 respondents for the study. Again, the proportion to the population of business teachers in each State was determined by the percentage of business teachers per State. Then the sample size for each state was ascertained by taking the proportion to the population per state as a fraction of the study sample. The aggregate of the various sample sizes for the six States affirms the study sample as shown in Appendix 2, p.143

Moreso, the proportion for gender was determined through purposive sampling techniques by taking 40% of the sample size per state as male and 60% of the sample population in each state as female

respectively. This sampling technique ensured greater representativeness of the sample relative to the population and guaranteed that minority constituents of the population be represented in the sample. Amadi (2011) stated that using the proportionate random sampling technique ensures that elements are drawn randomly from each stratum in such a way that the relative proportions of the strata in the resultant sample are the same as exist in the parent population. See appendix 2 for detail sample distribution by proportion. Therefore, 1,329 business subject teachers (made up of 531 males and 798 females) was drawn as sample size of the study.

### **Instrument for Data Collection**

A questionnaire titled: 'Questionnaire on effectiveness of instructional strategies for teaching skills in business subjects in south-south, Nigeria secondary schools (Q.E.I.T.B.S) was the main instrument used for data collection. The questionnaire was divided into two sections, A and B. Section A contain information on personal data of the respondents, including gender, location of school, qualification, school level, and teachers teaching experience. Section B which is the items in teaching business subjects in secondary school was discussed into six sub-sections of instructional strategies. The instrument was structured on a five point scale with the following options: Very Effective (VE), Effective (E), Fairly Effective (F E) Ineffective (IE) and Very Ineffective



(VI). Respondents were instructed to tick in the columns provided to show how effective they consider different components of the strategies for teaching skills in business subjects at secondary school level.

### **Validation of the Instrument**

Instrument for the study was subjected to face validity by two experienced business educators from the Department of Vocational Education, Nnamdi Azikiwe University, Awka and one from Business Education Department, River State University of science and Technology Port-Harcourt. They were presented with statement of the problem, purpose of the study, research questions, hypotheses and a copy of the questionnaire as a guide to the validation process. These experts evaluate the quality and relevance of the items including appropriateness, clarity of the instrument for collecting required information from the respondents for the study. All irrelevant items as directed by the expert were discarded, while their suggestions and recommendations were adequately utilized to modify the instrument which was presented to the supervisor for approval.

### **Reliability of the instrument**

In order to establish the reliability of the instrument, the instrument was tested by the split-half method using twenty randomly selected business subject teachers, other than those for the sample population in Abia State. Spearman rank order correlation co-efficient was used to

determine the degree of linear relationship between the two halves (odd and even items). The reliability co-efficient was computed using the spearman brown's prophesy formula which yielded the score of 0.86, 0.58, 0.62, 0.97, 0.86 and 0.62 respectively.

### **Method of Data Collection**

The researcher administered 1,329 copies of the questionnaire to the respondents with the help of six research assistants. These assistants were drawn among members of staff (business subject teachers) in the six sample states chosen for the study. The use of assistants who are members of staff helped immensely in reaching all the respondents and fast-tracking the administration and collection of the questionnaire. The assistants were properly instructed and guided on the modalities for administering and collection of the questionnaire. However, because of the diverse area to be covered and the nature of their jobs, respondents were allowed for two weeks to enable them fill the questionnaire items properly. All the questionnaires were retrieved.

### **Method of Data Analysis**

The data collected for the study in Section A were analyzed using frequency and simple percentages. The research questions and hypotheses were analyzed using mean rating and z-test inferential statistic. The mean rating was used to answer the research questions, while the hypotheses were tested with z-test statistics. Decisions was

taken based on the mean of the boundary limits of the five response options. This implies that the level of effectiveness of business subjects teacher was considered in the following ways:

<b>Response</b>	<b>Options</b>	<b>Rating</b>	<b>Boundary Limits</b>
Very Effective	(VE)	5	4.50-5.00
Effective	(E)	4	3.50-4.49
Fairly Effective	(FE)	3	2.50-3.49
Ineffective	(IE)	2	1.50-2.49
Very Ineffective	(VI)	1	0.50-1.49

Any value equal to or greater than 4.50 was regarded as very effective; any value from 3.50-4.49 is effective; any value from 2.50-3.49 is fairly effective, any value from 1.50-2.49 is ineffective and any value from 0.50-1.49 is very ineffective. A null hypothesis will be accepted if calculated z-value is less than the critical value of z, and not accepted when calculated z-value is equal or greater than the critical value of z.

## CHAPTER FOUR

### PRESENTATION AND ANALYSIS OF DATA

Data collected for the study were analyzed and the results presented as follows:

Analysis of data relating to research questions:

#### Research Question 1

How effective do business subject teachers in south-south, Nigeria secondary schools consider direct instructional strategies for teaching business subjects?

Data obtained for Research Question 1 were analyzed and presented in Table 1.

Table 1

#### Respondents' mean ratings on the effectiveness of direct instructional strategies for teaching business subjects. N = 1,329.

S/N	Items of direct instructional strategies	Male =531	SD <sub>1</sub>	Female = 798	SD <sub>2</sub>	$\Sigma(X)$	$\Sigma(SD)$	Remarks
1	Lecture method	0.89	0.94	0.91	0.95	0.90	0.95	Ineffective
2	Individualized instruction method	0.41	0.64	1.91	1.38	1.16	1.01	Ineffective
3	Information, advice and guidance (IAG)	1.03	0.91	1.50	1.22	1.27	1.07	Fairly Effective
4	Programmed instruction method	0.71	0.84	1.06	0.02	0.89	0.43	Ineffective
5	Brainstorming method	0.51	0.71	1.03	0.01	0.77	0.36	Ineffective
6	Support (scaffolding) method	0.73	0.47	0.81	0.25	0.77	0.36	Ineffective
7	Seminar method	0.39	0.36	1.15	0.36	0.77	0.36	Ineffective
8	Guided and shared reading method	0.29	0.53	1.13	0.06	0.77	0.29	Very Ineffective
9	Listen and visualize method	0.40	0.63	1.89	0.37	1.15	0.50	Ineffective
10	Model – lead –test instructional method (MLTI)	0.58	0.76	1.09	0.04	0.84	0.40	Ineffective
11	Structure overview method	0.46	0.67	1.12	0.06	0.79	0.37	Ineffective
12	Explicit teaching method	0.51	0.71	1.03	0.01	0.77	0.36	Ineffective
13	Self-questioning method	0.73	0.85	0.63	0.79	0.68	0.82	Very Ineffective
14	Deductive Instructional method	0.21	0.45	1.23	0.10	0.44	0.28	Very Ineffective
15	Peer tutoring method	0.78	0.88	0.64	0.8	0.71	0.84	Very Ineffective
16	Team teaching method	0.81	0.9	0.69	0.83	0.75	0.87	Ineffective
	<b>Aggregate <math>\bar{X}</math> and SD</b>	0.60	0.51	1.11	0.50	1.53	0.76	<b>Ineffective</b>

The information in Table 3 revealed how business subject teachers in south-south, Nigeria consider direct instructional strategies effective for teaching business subjects. Among the items of direct instructional strategies, only item 3, information, advice and guidance instructional method was considered fairly effective for teaching business subjects by business subject teachers. It has mean value of 1.27 and standard deviation of 1.07. Items 1,2,4,5,6,7,9,10,11,12 and 16 were considered to be ineffective for teaching business subjects by business subject teachers with their mean values of 0.90, 1.16, 0.89, 0.77, 0.77, 0.77, 1.15, 0.84, 0.79, 0.77, 0.75 and standard deviations of 0.95, 1.01, 0.43, 0.36, 0.36, 0.36, 0.50, 0.40, 0.37 and 0.87 respectively. Again, item 8, guided and shared reading method, 13, self-questioning method, 14, deductive instructional method, and 15, peer tutoring method were considered very ineffective by business subject teachers with mean values of 0.71, 0.68, 0.44 and 0.71. Their corresponding standard deviations were 0.29, 0.82, 0.28 and 0.84 respectively. No item was considered very effective and effective. A grand mean of 1.53 and a standard deviation of 1.01 implies that direct instructional strategies was considered ineffective for teaching business subjects at secondary school level by business subject teachers in south-south, Nigeria.

## Research Question 2

How effective do business subject teachers consider indirect instructional strategies effective for teaching the new business subjects in south-south, Nigeria secondary schools?

Data gathered in respect of Research Question 2 were analyzed and presented in Table 2.

Table 2  
**Respondents' mean ratings on the effectiveness of indirect instructional strategies.**  
**N = 1,329.**

S/N	Items of indirect instructional strategies	Male =531	SD <sub>1</sub>	Female = 798	SD <sub>2</sub>	$\sum(\bar{X})$	$\sum(SD)$	Remarks
1	Inquiry –based instruction method	1.70	0.30	2.89	1.7	2.29	1.00	Very Effective
2	Assignments or Dalton method	1.65	0.28	1.67	0.29	1.66	0.29	Fairly Ineffective
3	Questioning techniques method	1.06	0.02	2.36	1.53	1.71	0.78	Fairly Effective
4	Read and practice method	1.64	0.28	3.02	1.73	2.33	1.01	Very Effective
5	Report back session method	1.52	0.23	1.59	1.26	1.56	0.75	Fairly Ineffective
6	Questionnaire method	1.68	0.29	2.87	1.69	2.28	0.99	Very Effective
7	Term paper method	1.59	0.26	1.55	1.24	1.57	0.75	Fairly Effective
8	Concept learning method	1.68	0.29	2.89	1.7	2.29	0.99	Very Effective
9	Self-evaluation method	1.58	0.25	1.58	1.25	1.58	0.75	Fairly Effective
10	Use of brochures method	1.57	0.25	3.01	1.73	2.29	0.99	Very Effective
11	Flexible learning method	1.50	1.22	3.06	1.74	2.28	1.48	Very Effective
12	Close test method	0.87	0.93	2.32	1.53	1.59	1.23	Fairly Effective
13	Reference reading method	1.68	0.29	1.63	1.27	1.66	0.78	Fairly Effective
	<b>Aggregate <math>\bar{X}</math> and SD</b>	1.51	0.37	2.34	1.43	3.57	1.01	<b>Effective</b>

Data in Table 2 above revealed that items 1, 4, 5, 8, 10 and 11 have mean values of 2.29, 2.33, 2.28, 2.29, 2.28 and standard deviations of 1.00, 1.01, 0.99, 0.99, 0.99 and 1.48 respectively. They were items of indirect instructional strategies that business subjects teachers in south-south, Nigeria secondary schools considered very effective. On the other hand, items 2, 3, 5, 7, 9, 12 and 13 have mean values of 1.71, 1.56, 1.57, 1.58, 1.59, 1.66 and standard deviations of 0.29, 0.78, 0.75, 0.75, 0.75, 1.23 and 0.78 and were considered to be fairly effective. However, no items of indirect instructional strategies were considered effective, ineffective and very ineffective. Notably, with a grand mean of 3.57 and a standard deviation of 1.01, indirect instructional strategies was considered effective for teaching business subjects at secondary school level.

### **Research Question 3**

How effective do business subject teachers in south-south, Nigeria secondary schools consider interactive instructional strategies for teaching the new business subjects?

Data obtained in respect of Research Question 3 were analyzed and presented in Table 3.

Table 3

**Respondents' Mean Ratings of the effectiveness of interactive instructional strategies.**  
**N = 1,329.**

S/N	Items of interactive instructional strategies	Urban Bus. Teacher =1,212	SD <sub>1</sub>	Rural Bus. Teacher = 117	SD <sub>2</sub>	$\sum(\bar{X})$	$\sum(SD)$	Remarks
1	Discussion method	1.88	1.37	2.89	1.7	2.39	1.54	Very Effective
2	Debates method	1.92	1.38	2.08	1.44	2.00	1.41	Effective
3	Use of guest speaker/ resource person	1.98	1.40	2.76	1.66	2.37	1.53	Very Effective
4	Story –telling method	1.21	0.21	1.97	1.40	1.59	0.81	Fairly Effective
5	Role playing method	1.80	1.34	2.56	1.60	2.18	1.47	Effective
6	Conferencing	2.08	1.44	2.54	1.59	2.31	1.52	Very Effective
7	Jigsaw method	1.60	0.26	3.11	1.76	2.36	1.01	Very Effective
8	Team- based learning (TBL) method	1.84	1.21	1.89	1.72	1.87	1.47	Effective
9	Question and answer (Q&A) method	0.96	0.97	2.11	1.45	1.53	1.21	Fairly Effective
10	Use of Panel of experts	1.57	1.25	3.06	1.73	2.29	1.49	Very Effective
11	Buzz group method	1.48	1.35	2.98	1.37	2.23	1.36	Very Effective
12	Peer partner learning method	1.68	1.29	1.99	1.41	1.84	1.35	Effective
13	Classroom conversation method	1.48	1.21	2.10	1.49	1.79	1.35	Effective
14	Think, pair and share method	1.01	1.00	1.99	1.41	1.50	1.21	Fairly Effective
15	Heterogeneous grouping method	1.05	0.02	1.95	1.39	1.50	0.71	Fairly Effective
16	Tutorial group experience method	1.37	1.17	1.83	1.35	1.60	0.26	Fairly Effective
17	Study groups method	1.67	1.17	2.04	1.42	1.86	1.29	Effective
18	Reciprocal-questioning method	0.99	0.10	2.03	1.22	1.51	0.66	Fairly Effective
	<b>Aggregate <math>\bar{X}</math> and SD</b>	1.53	0.40	2.27	0.31	3.54	0.35	



Data in Table 3 shows that items 1, 3, 6, 7, 8 and 11 have their respective mean values of 2.39, 2.39, 2.31, 2.36, 1.87, 2.23 and standard deviations of 1.54, 1.53, 1.52, 1.01, 1.47 and 1.36. They were considered very effective by business subjects teachers in south-south, Nigeria secondary schools. Items 2, 5, 10, 12, 13 and 17 have mean values of 2.00, 2.18, 2.29, 1.84, 1.79, 1.86 and standard deviations of 1.41, 1.47, 1.49, 1.35, 1.35 and 1.29 respectively. Business subject teachers considered these items effective for teaching business subjects at secondary school level. While items 4, 9, 14, 15, 16, and 18 with their respective mean values of 1.59, 1.53, 1.50, 1.60, 1.51 and standard deviations of 0.81, 1.21, 1.21, 0.71, 1.26 and 0.66 were considered fairly effective for teaching business subjects at the secondary school level by the respondents. However, none of the items were considered ineffective or very ineffective by business subject teachers. Finally, with a grand mean of 3.54 and a standard deviation of 0.35, the respondents considered interactive instructional strategies effective for teaching business subjects at the secondary school level.

#### **Research Question 4**

How effective do business subject teachers consider experimental instructional strategies effective for teaching the new business subjects in south-south, Nigeria secondary schools?

Data derived for Research Question 4 were analyzed and presented in Table 4.

Table 4

**Respondents' mean ratings of Experimental Instructional strategies.**  
**N = 1329.**

S/N	Items of Experimental instructional	Degree(s) =1,231	SD <sub>1</sub>	Non Degree = 98	SD <sub>2</sub>	$\sum(\bar{X})$	$\sum(SD)$	Remarks
<b>Strategies</b>								
1	Demonstration method	1.27	0.12	3.69	1.92	2.48	1.02	Very Effective
2	Field trips/excursion method	1.80	1.34	3.02	1.73	2.41	1.54	Very Effective
3	Workshop method	1.84	1.35	3.10	1.76	2.47	1.56	Very Effective
4	Laboratory exposure method	2.19	1.47	2.58	1.60	2.39	1.54	Very Effective
5	Field interview method	2.39	1.54	2.53	1.59	2.46	1.57	Very Effective
6	Office visits method	1.41	1.18	3.11	1.76	2.26	1.47	Very Effective
7	Survey method	1.37	1.17	1.63	1.27	1.50	1.22	Fairly Effective
8	Inter disciplinary method	0.85	0.92	1.15	1.07	1.00	0.99	Ineffective
9	Industrial cooperative method	1.67	1.29	3.18	1.78	2.43	1.54	Very Effective
10	School affiliations method	2.39	1.54	2.48	1.57	2.44	1.56	Very Effective
11	Simulation method	0.00	0.00	0.00	0.00	0.00	0.00	Very Ineffective
12	Games and play method	2.16	1.46	2.41	1.55	2.29	1.51	Very Effective
13	Drill-and- practice method	1.99	0.41	2.80	1.67	2.39	1.04	Very Effective
14	Narrative method	0.68	0.82	0.92	0.95	0.80	0.89	Ineffective
15	Visits to employment agency /consulting firms	1.42	1.20	3.14	1.77	2.29	1.49	Very Effective
16	Field observation method	1.68	1.29	3.17	1.78	2.43	1.54	Very Effective
17	Filling out forms method	2.32	1.52	2.56	1.60	2.44	1.56	Very Effective
	<b>Aggregate <math>\bar{X}</math> and SD</b>	2.32	1.09	2.43	1.49	4.52	2.01	<b>Very Effective</b>

Information contained in Table 4 showed that out of 17 items of experimental instructional strategies, 13 of them including items 1, 2, 3, 4, 5, 6, 9, 10, 12, 13, 15, 16 and 17 have mean values of 2.48, 2.41, 2.47, 2.39, 2.46, 2.26, 2.43, 2.44, 2.29, 2.39, 2.28, 2.43, 2.44 and standard deviations of 1.02, 1.54, 1.56, 1.54, 1.57, 1.47, 1.54, 1.56, 1.51, 1.04, 1.49, 1.54 and 1.56 respectively. They were considered very effective by the respondents for teaching business subjects at secondary school level. None of the items under these strategies was considered effective. While item 7 with a mean value of 1.50 and standard deviation of 1.22 was considered fairly effective. Items 8 and 14 with their respective mean values of 1.00, 0.80 and standard deviations of 0.99, 0.89 respectively, were considered by business subject teachers to be ineffective. Item 11 with a mean value of 0.00 and standard deviation of 0.00 was also considered to be very ineffective for teaching business subjects at secondary school level. The grand mean value of 4.52 and standard deviation of 2.01 shows that experimental instructional strategies was considered very effective for teaching business subjects at secondary school level.

### **Research Question 5**

How effective do business subject teachers in south-south, Nigeria secondary schools consider independent instructional strategies for teaching the new business subjects?

Data obtained in respect of Research Question 5 were analyzed and presented in Table 5.

Table 5

**Respondents' Mean Ratings on the Effectiveness of  
independent instructional strategies. N = 1,329**

S/N	Items of instructional strategies	Exp.Bus. Teachers =139	SD <sub>1</sub>	Non Exp. Bus. Teachers = 1,190	SD <sub>2</sub>	$\sum(\bar{X})$	$\sum(SD)$	Remarks
1	Critical thinking method	1.85	1.36	3.01	1.73	2.43	1.55	Very Effective
2	E- learning method	1.59	1.26	3.19	1.78	2.39	1.52	Very Effective
3	Problem solving	1.65	1.28	3.15	1.77	2.40	1.53	Very Effective
4	Project method	1.66	1.28	3.12	1.76	2.39	1.52	Very Effective
5	Computer assisted instruction (CAI) method	1.84	1.35	3.01	1.73	2.43	1.54	Very Effective
6	Discovery method	1.95	1.39	2.99	1.72	2.47	1.56	Very Effective
7	Assigned Questions method	1.79	1.33	2.96	1.72	2.38	1.53	Very Effective
8	Cross word puzzles method	1.44	0.20	1.56	1.24	1.50	0.72	Fairly Effective
9	Library research method	0.63	0.79	1.37	1.17	1.00	0.98	Ineffective
10	Exploratory method	1.798	1.34	3.12	1.76	2.46	1.55	Very Effective
11	Correspondence course/ distance learning	0.44	0.66	0.56	0.74	0.50	0.70	Very Ineffective
12	Case study method	2.13	1.45	2.72	1.64	2.43	1.55	Very Ineffective
13	Take home test/ home work method	1.03	0.01	1.97	1.40	1.50	0.71	Fairly Effective
14	Decision-making process method	0.96	0.97	3.89	1.97	2.43	1.47	Very Effective
15	Memorization method	0.00	0.00	0.00	0.00	0.00	0.00	Very Ineffective
16	Text book method	0.23	0.47	1.03	0.01	0.63	0.24	Very Ineffective
17	Manual and student prepared not book	0.36	0.6	1.70	1.30	1.03	0.95	Ineffective
18	<b>Aggregate X and SD</b>	2.33	0.92	2.43	1.37	4.53	2.03	<b>Very Effective</b>

Data contained in Table 5 shows that items 1, 2, 3, 4, 5, 6, 7, 10, 12, and 14 have mean values of 2.43, 2.39, 2.40, 2.39, 2.43, 2.47, 2.38, 2.46, 2.43, 2.43, and standard deviations of 1.55, 1.52, 1.53, 1.52, 1.54, 1.56, 1.53, 1.55, 1.55 and 1.47 respectively. These items of independent instructional strategies were considered very effective for teaching business subjects at the secondary school level. Items 8 and 13, with their mean values of 1.50 each and standard deviations of 0.72 each were considered fairly effective. While items 11, 15 and 16 with mean values of 0.50, 0.00, 0.63 and standard deviations of 0.70, 0.00, 0.24 were considered very ineffective for teaching business subjects. Item 9, and 17 with mean values of 1.00, 1.03 and standard deviations of 0.98 and 0.95, were also considered ineffective for teaching business subjects at secondary school level. A grand mean value of 4.53 and a standard deviation of 2.03 indicates that independent instructional strategies was considered very effective for teaching business subjects at secondary school level.

### **Research Question 6**

How effective do business subject teachers in south-south, Nigeria secondary schools consider material/visual Aids strategies for teaching the new business subjects?

Data generated for Research Question 6 were analyzed and presented in Table 6.

Table 6

**Respondents' Mean Ratings on effectiveness of material/visual aids strategies. N = 1,329.**

S/N	Items of Material/visual Aid instructional Strategies	JSS.Bus Teachers =315	SD <sub>1</sub>	SSS. Bus. Teachers = 1014	SD <sub>2</sub>	$\sum(\bar{X})$	$\sum(SD)$	Remarks
1	Instructional Television	1.87	1.36	2.01	1.41	1.94	1.39	Effective
2	DVDs	1.75	1.32	1.99	0.41	1.87	0.87	Effective
3	Instructional films/ films show	1.76	1.31	2.15	1.46	1.95	1.39	Effective
4	CDs	0.28	0.52	0.72	0.84	0.50	0.68	Very Ineffective
5	Radio programmes	0.97	0.98	1.03	0.0 1	1.00	0.49	Ineffective
6	Work book	1.09	0.04	1.91	1.38	1.50	0.71	Fairly Effective
7	Bulletin board	0.56	0.74	0.62	0.78	0.59	0.76	Very Ineffective
8	Photographs/pictures	1.46	1.20	1.98	0.40	1.70	0.80	Fairly Effective
9	Use of white board	1.46	1.20	1.54	1.24	1.50	1.22	Fairly Effective
10	Use of ICT power point	1.05	0.02	3.18	1.78	2.12	1.90	Effective
11	Flannel boards	0.34	0.58	0.96	0.97	0.65	0.78	Very Ineffective
12	Cartons and comics	0.39	0.62	0.61	0.78	0.50	0.70	Very Ineffective
13	Exhibition and display	1.31	0.55	3.12	1.76	2.22	1.16	Effective
14	Posters	0.98	0.98	1.16	1.07	0.07	1.03	Ineffective
15	Flip charts	0.44	0.66	0.56	0.74	0.50	0.70	Very Ineffective
16	Multimedia projector	1.25	0.11	3.21	1.79	2.23	0.95	Effective
17	Tape recorder	0.62	0.78	0.78	0.88	1.40	0.83	Very Ineffective
18	Video clip method	0.08	0.28	1.10	1.04	0.59	0.66	Very Ineffective
19	Community/Local resources	1.08	0.04	1.06	0.03	0.07	0.04	Very Ineffective
	<b>Aggregate <math>\bar{X}</math> and SD</b>	1.02	0.69	1.63	0.98	2.51	1.03	<b>Fairy Effective</b>

Information contained in Table 6 shows that none of the items of material/visual aid strategies was considered by the respondents to be very effective for teaching business subjects. However, items 1, 2, 3, 10, 13 and 16 with mean values of 1.94, 1.87, 1.95, 2.12, 2.22, 2.23 and standard deviations of 1.39, 0.87, 1.39, 1.90, 1.16 and 0.95 respectively, were considered by business subject teachers as effective. Also, items 6, 8 and 9 have their respective mean values of 1.50, 1.72, 1.50 and standard deviations of 0.71, 0.80 and 1.22. These items were considered fairly effective for teaching business subjects. Only items 5 and 14, with mean values of 1.00, 0.07 and standard deviations of 0.49 and 1.03, were considered ineffective. Items 7, 11, 12, 15, 17, 18 and 19 with their respective mean values of 0.59, 0.65, 0.50, 0.50, 1.40, 0.59, 0.07 and standard deviations of 0.76, 0.78, 0.70, 0.70, 0.83, 0.66 and 0.04, were considered very ineffective for teaching business subjects at secondary school level. The grand mean of 2.51 and standard deviation of 1.03 shows that material/visual aid strategies was considered fairly effective for teaching business subjects at secondary school level.

### **Results of Test of Hypotheses**

The six null hypotheses formulated for the study were tested in this section. The Z – test statistical tool was used to analyze data relating to the six hypotheses at 0.05 level of significance.

### Null Hypothesis 1:

There is no significant difference in the mean ratings of male and female business subject teachers in south-south, Nigeria secondary schools regarding how effective they consider direct instructional strategy for the teaching of new secondary school business subjects.

Data generated in respect of hypothesis 1 were shown in Table 7.

Table 7

#### **Z – test Analysis of Mean Scores of Male and Female Business Subject Teachers in South-South, Nigeria on the effectiveness of Direct Instructional strategies. N = 1,329**

Gender	N	$\bar{X}$	SD	DF	$\alpha$	Z-Cal	Z-Crit.	Remarks
Male Business Subject Teachers	531	0.60	0.77					
				1,327	0.05	0.17	1.96	Accept
Female Business Subject Teachers	798	1.11	0.50					

The data in Table 7 shows the Z – calculated value of 0.17 at 1,327 degree of freedom and 0.05 level of significance, while the Z-critical value is 1.96. Since the calculated Z – value of 0.17 is less than the Z – critical value of 1.96, the null hypothesis was accepted. This means that the male and female business subject teachers do not differ significantly in their mean rating on the effectiveness of direct instructional strategies for teaching business subjects at the secondary school level in south-south, Nigeria.



## Null Hypothesis 2:

There is no significance difference in the mean ratings of male and female business subject teachers in south-south, Nigeria secondary schools regarding how effective they consider indirect instructional strategy for the teaching of ne

w secondary school business subjects.

Data obtained in respect of hypothesis 2 were analyzed and presented in Table 8.

Table 8

**Z – test Analysis of Mean Scores of Male and Female Business Subject Teachers in South-South, Nigeria on the effectiveness of Indirect Instructional Strategies. N = 1329.**

Gender	N	$\bar{X}$	SD	DF	$\alpha$	Z-Cal	Z-crit.	Remarks
Male Business Subject Teachers	531	1.51	0.37					
				1,327	0.05	0.36	1.96	Accept
Female Business Subject Teachers	798	2.34	1.43					

The data in Table 8 indicates that the Z – calculated value is 0.36 at 1,327 degree of freedom and 0.05 level of significance. This value is less than the Z- critical value of 1.96. Therefore, the null hypothesis was accepted. This implies that male and female business subject teachers do not differ significantly in their mean ratings on the effectiveness of indirect instructional strategies for teaching business subjects at the secondary school level.

### Null Hypothesis 3:

There is no significant difference in the mean ratings of urban and rural business subject teachers in south-south, Nigeria secondary schools regarding how effective they consider interactive instructional strategy for the teaching of new secondary school business subjects.

Data obtained for hypothesis 3 were analyzed and presented in Table 9.

Table 9

**Z – test Analysis of Mean Scores of Urban and Rural Business Subject Teachers in South-South, Nigeria on the effectiveness of Interactive Instructional strategies. N = 1329.**

Location	N	$\bar{X}$	SD	DF	$\alpha$	Z-cal	Z-crit.	Remarks
Urban Business subject Teachers	1,212	1.53	0.40					
				1,327	0.05	5.16	1.96	Reject
Rural Business Subject Teachers	117	2.27	0.31					

Analysis of data in Table 9 shows that the calculated Z – value is 5.16 and Z – critical value is 1.96 at 1,327 degree of freedom and 0.05 level of significance. Since the calculated Z – value of 5.16 is greater than the critical value of 1.96, the null hypothesis was rejected. This indicates that urban and rural business subject teachers differ significantly, in their mean ratings concerning the effectiveness of interactive instructional strategies for teaching business subjects at the secondary school level.

#### Null Hypothesis 4:

There is no significant difference in the mean ratings of degree(s) holders in business education and Non-degree(s) business teachers in south-south, Nigeria secondary schools regarding how effective they consider experimental instructional strategy for the teaching of new secondary school business subjects

Data obtained in respect of hypothesis 4 were analyzed and presented in Table 10.

Table 10

**Z – test Analysis of Mean Scores of Degree(s) holders and Non-degree(s) Business Subject Teachers in South-South, Nigeria on the effectiveness of Experimental Instructional strategies. N =1329**

Educational attainment	N	$\bar{X}$	SD	DF	$\alpha$	Z-Cal	Z-Cal	Remarks
Business Education degree(s)	1,231	2.32	1.09					
Teachers				1,327	0.05	0.04	1.96	Accept
Non-degree(s) Business Teachers	98	2.43	1.49					

The data in Table 10 indicates that the calculated Z – value is 0.04 and Z- critical value is 1.96 at 1,327 degree of freedom and 0.05 level of significance. Here, the Z – calculated value of 0.04 is less than the critical value 1.96 therefore, the null hypothesis was accepted. This means that degree(s) and non-degree(s) business subject teachers do not differ significantly in their mean ratings on the effectiveness of experimental instructional strategies for teaching business subjects at secondary school.

### Null Hypothesis 5:

There is no significant difference in the mean ratings of business subject teachers who have taught for five years and below and their counterparts who have taught for five years and above in south-south, Nigeria secondary schools regarding how effective they consider independent instructional strategy for the teaching of new secondary school business subjects.

Data obtained for hypothesis 5 were analyzed and presented in Table 11.

Table 11

**Z – test Analysis of Mean scored of Business Subject Teachers on the effectiveness of Independent Instructional strategies for teaching Business Subjects as a result of years of Experience. N = 1,329.**

Years of Experience	N	$\bar{X}$	SD	DF	$\alpha$	Z-cal	Z-cal	Remarks
Business Teachers with Teaching Experience of 5 yrs and below	139	2.33	0.92					
Business Teachers with Teaching Experience above 5yrs	1,190	2.43	1.37					
				1,327	0.05	4.72	1.96	Reject

Data in Table 11 shows that the calculated Z- value is 4.72 while Z – critical value is 1.96 at 1,327 degree of freedom and 0.05 level of significance. Since the calculated Z – value 4.72 is greater than the critical Z – value 1.96, the null hypothesis was rejected. This indicates that business subject teachers with five years teaching experience and below differ significantly with their counterparts with five years teaching experience and above in their mean ratings on the effectiveness of

independent instructional strategies for teaching business subjects at the secondary school level.

### **Null Hypothesis 6:**

There is no significant difference in the mean ratings of Junior and Senior Secondary school business subject teachers in south-south, Nigeria secondary schools regarding how effective they consider material/visual aids strategy for the teaching of new secondary school business subjects.

Data obtained for hypothesis 6 were analyzed and presented in Table 12.

Table 12.

### **Z – test Analysis of Junior and Senior Secondary School Business Subject Teachers in their Mean Ratings on the effectiveness Of Materials/Visual Aids Strategies. N = 1329**

<b>Variables</b>	<b>N</b>	<b><math>\bar{X}</math></b>	<b>SD</b>	<b>DF</b>	<b><math>\alpha</math></b>	<b>z-cal</b>	<b>z-cal</b>	<b>Remarks</b>
<b>Junior Secondary School Business Teachers.</b>	315	1.02	0.55					
<b>Senior Secondary school Business subjection Teaching</b>	1,014	1.63	0.52	1,327	0.05	0.18	1.96	Accept

Analysis of data in Table 12 shows that the calculated Z – value is 0.18 and the critical Z – value is 1.96 at 1,327 degree of freedom and 0.05 level of significance. In this case, the calculated Z – value 0.18 is less than the critical Z – value 1.96, the null hypothesis was accepted. This implies that Junior and Senior secondary school business subject teachers do not differ significantly in their mean ratings on the

effectiveness of materials/visual aid strategies for teaching business subjects at secondary school level.

### **Summary of Major Findings**

The major findings of the study are as follows:

1. Business subject teachers in south-south, Nigeria considered direct instructional strategies ineffective for teaching business subjects at the secondary school level.
2. Business subject teachers in south-south, Nigeria considered indirect instructional strategies effective for teaching business subjects.
3. Business subject teachers in south-south, Nigeria considered interactive instructional strategies effective for teaching business subjects.
4. Business subject teachers in south-south, Nigeria considered experimental instructional strategies very effective for teaching business subjects.
5. Business subjects teachers in south-south, Nigeria considered independent instructional strategies very effective for teaching business subjects.

6. Business subject teachers in south-south, Nigeria considered material/visual aid instructional strategies fairly effective for teaching business subjects at secondary school level.
7. Male and female business subject teachers in south-south, Nigeria do not differ significantly in their mean ratings regarding the effectiveness of direct and indirect instructional strategies for teaching business subjects.
8. Business subject teachers in urban and rural secondary schools in south-south, Nigeria differ significantly in their mean ratings concerning the effectiveness of interactive instructional strategies for teaching business subjects.
9. Business subject teachers with degree(s) in business education and their counterparts with degree(s) not in business education do not differ significantly in their mean ratings concerning the effectiveness of experimental instructional strategies for teaching business subjects.
10. The opinion of business teachers who have taught for 5 years and below and their counterparts who have taught for 5 years and above differ significantly in their mean ratings concerning the effectiveness of independent instructional strategies for teaching business subjects.

11. Junior and senior secondary school business subject teachers do not differ significantly in their mean ratings concerning the effectiveness of material/visual aid strategies for teaching business subjects at the secondary school level.

In the final analysis, business subject teachers in south-south, Nigeria accorded top priority to independent and experimental as instructional strategies for teaching business subjects. They are followed by interactive, indirect, material/visual aid and direct instructional strategies in ranking order.



## **CHAPTER FIVE**

### **DISCUSSION, CONCLUSION AND RECOMMENDATIONS**

This chapter presents the discussion of result, conclusions, implications of the study, recommendations, limitations of the study and suggestions for further research.

#### **Discussion of Results**

The discussion of the results obtained from the presentation and analysis of the study were based on the six research questions and six null hypothesis presented in chapter One.

#### **Direct Instructional strategies:**

The result of the analysis of research question one revealed that business subject teachers in south-south, Nigeria secondary schools did not consider the use of direct instructional strategies effective for teaching business subjects. This is in accord with the view of Nwodo (2006) who did not agree that mere giving instructional information to student is enough to impart vocational skills particularly in business education (business subjects inclusive). It was found that one of the most commonly used methods in teaching skill subjects is lecture. This could be responsible for the high rate of unskilled and unemployed youths in our society. Based on this, Nwodo (2006) added that lecture method which is a key component of direct instructional strategies is

rarely effective for teaching skill subjects such as Accounting, keyboard etc. In a related view, Njoku (1992) disclosed that the predominant method used in teaching business subjects in secondary schools in Imo State of Nigeria is lecture. However, Njoku guided that to promote a secure and sustainable future for the youths, teachers must possess adequate knowledge and skills necessary for teaching business subject. Finally, Njoku advised that the teaching of skills in business subjects should not be left in the hands of incompetent teachers.

The tested hypothesis on Table 9 indicated that there was no significant difference in the mean ratings of male and female business subject teachers on the effectiveness of direct instructional strategies for teaching business subjects at the secondary school level. This led to the null hypothesis being accepted. Mannison (2009) upheld the results and the ineffectiveness of direct instructional strategies for teaching business subjects by stating that direct instructional strategies are teacher – centre, and can only be effective in providing instructional information to students and not in teaching skills. Results of the Z-test analysis equally showed that the gender of the respondents did not influence their ratings of direct instructional method.

## **Indirect Instructional Strategies**

Effective teaching and learning requires indirect instructional strategies. Indirect instructional strategies involves teaching methods that are effective for fostering creative and development of individual skills and abilities.

The analysis of the result of research question two indicated that business subject teachers in south-south, Nigeria secondary schools confirmed that indirect instructional strategies are effective for teaching business subjects. Arends (2007), Ellis and Worthington (2005) corroborated this finding by stating that indirect instructional strategies are effective for teaching where skills and competencies are fundamental. Also, Nwalado (2008) observed that indirect instructional strategies are designed approach to learning in which the learner is the active agent in discovering concepts and ideas. It discourages memorization of facts and concepts, but rather encourages critical thinking and skills acquisition. In the same vein, Mannison (2009) revealed that the application of indirect instructional strategies requires conducive environment and enough time in order to foster creativity and development of individual skills.

The results of the null hypothesis two indicated that there was no significant difference in the mean ratings of male and female business subject teachers in south-south, Nigeria secondary schools concerning

the effectiveness of indirect instructional strategies for teaching business subjects. As a back up to these results, Mannison (2009) described indirect instructional strategies as student – centred strategy which seeks a high level of students' involvement in observing, investigating, drawing inferences from data and forming hypothesis of their own. Therefore, they are effective in teaching business subjects.

### **Interactive Instructional Strategies**

Interactive instructional strategies involve discussion and sharing amongst students, explore their higher – thinking process and gives opportunity to develop social skills. The analysis of the result of research question three showed that business subject teachers in south-south, Nigeria secondary school considered interactive instructional strategies for teaching business subjects. The grand mean figure shown on Table 5 confirmed the effectiveness of interactive instructional strategies for teaching business subjects. The analysis also revealed that discussion method dominated interactive strategies. The reason could be that interactive instructional strategies rely heavily on discussion, participation and sharing among the students and teacher. Here, the students learn from each other, the teacher and guest speakers coming from outside the school system through discussions, debates, brainstorming, Jigsaw, buzz grouping, peer learning, invitation of resource person etc.

This is in agreement with the opinion of Okwuanaso and Nwazor (2000) that identified discussion as one of the teaching strategies that prepares business students to learn to give and take ideas, work in teams or with others. In the same vein, Nwalado (2008) urged that in using group discussion, each group should operate under a leader and every student should be encouraged to participate by playing a role while ensuring that no single student dominates the group discussion or execution of the assigned project.

The result of the null hypothesis three revealed that business subjects teachers in Urban and rural secondary schools in south-south, Nigeria differ significantly in their mean ratings concerning the effectiveness of interactive instructional strategies for teaching business subjects. A reviewed literature of Nwalado (2008) attested to the effectiveness of interactive strategies in teaching business subjects. Nwalado stated that invitation of resource person(s) to deliver lecture(s) and interact with students on related business topic is an effective way of teaching business subjects as well as provide the latest job information and requirements to the students.

## **Experimental Instructional Strategies**

Experimental instruction is the process whereby students “learn by doing” and reflecting on the experience. This strategies are very effective in exposing students to a particular skill or experience.

The analysis on Table 6 indicated that business subject teachers in south-south, Nigeria secondary schools considered experimental instructional strategies very effective for teaching business subjects. Some of the methods of Experimental instructional strategies includes demonstration, field trip/excursion, workshop practice, field interview, industrial co-operative, filling out forms etc. These methods involve the teaching of theoretical and practical aspects of business subjects within and outside the school. This could be the reason why experimental strategies were rated very effective. The researcher believed that if these methods are properly and adequately applied in teaching business subjects, youth’s unemployment will be reduced to a very low level in Nigeria.

Arends (2007) supported the effectiveness of experimental strategies by stating that business teachers can only teach skill subjects effectively with demonstration method. Arend added that teachers should demonstrate the skills, knowledge, and competencies and values in question while the students watch, and perform the same operation for mastery learning. Also, Nwalado (2008) identified field trip/excursion as

an out of class teaching – learning experience undertaken by business teachers and students with the aim of acquiring knowledge, skills and values in any given subject. All these are in line with Mannission (2009) who described experimental instructional strategies as learner – centred and activity oriented.

The results of the analysis on Table 12 indicated that there was no significant difference in the mean ratings of degree(s) and non-degree(s) business subject teachers concerning the effectiveness of experimental instructional strategies for teaching business subject at the secondary school level. The result of the analysis disclosed further that the qualification(s) of the teachers had no effect on their mean ratings of the methods under experimental instructional strategies.

Agwu (2001) confirmed in his book titled “Teaching in Nigeria, a dynamic approach” that demonstration method which is an aspect of experimental instructional strategies is effective for teaching skills. Agwu recommended that in using this method, the teacher demonstrates and explains the skills, knowledge, competences and process involved while students watch and perform the same operation(s) for internalization and mastering learning.

## **Independent Instructional Strategies**

Independent instructional strategies involves a range of methods that are effective for developing individual student's initiative, self-improvement and self-reliance that are aimed towards self-employment.

The result of the analysis in respect of research question five showed that business subject teachers in south-south, Nigeria secondary school considered independent instructional strategies very effective for teaching business subjects. The finding also indicated that independent methods which are intended to lead the students into independent learning, discovery, critical thinking, problem solving, project execution and related assignments, case studies as well as effective decision making are poorly used in teaching business subjects in schools. As a result, many unskilled and unemployed school leavers abound in our society.

Imarhiagbe (2003), while confirming the effectiveness of project method, observed that it provides opportunity for students to make essential application of the knowledge and skills they have learnt in practical situation. Imarhiagbe added that project help to develop the skills implied in the stated course objectives. In a related development, Amadi (2011) asserted that critical thinking is a method of teaching employable skills for wide range of jobs. While Okwuanaso and Nwazor



(2000) pointed out that problem solving method when effectively used, help to develop students' independent thinking and effective decision making. Chang (2010) finally noted that problem solving method involves the students into discovery instead of absorbing knowledge.

The result of the null hypothesis five showed that more experienced business subject teachers (5 years and above) differ significantly from their less experience counterparts (5 years and below) in their mean ratings regarding the effectiveness of independent instructional strategies for teaching business subjects at the secondary school level. This means that experience influenced their responses. A reviewed literature, Barbra (2009) pointed out that the use of independent instructional strategies will certainly assist the students not only to become more autonomous learner but also self-sufficient and responsible citizens by enhancing individual potential. In the same manner, it will enable students to analyze problems, make responsible decisions, and take purposeful actions. Barbra concluded by alerting that to ensure long-life skills in times of rapid socio-economic changes, students need to be taught with life-long learning strategies.

**Material/Visual Aid Strategies:**

Material/Visual Aid Strategies is involves the use of instructional materials and visual aids in teaching and learning process. These methods are most suitable for teaching skill subjects.

The result of the analysis of research question six indicated that material/visual aid instructional strategies are fairly effective for teaching business subjects. The result further revealed that materials/visual aid methods that are commonly used by the teachers to supplement oral teaching are often being abused by teachers who use them to entertain students, thereby defeating the aim of using these methods.

Reviewed literature (Tema, 2007), confirmed that material/visual aid methods are commonly used by teachers to complement their lesson and make it more explanatory, talk less in the class and make teaching more interesting. Obikwere (2009) observed that television/video are dominating the attention of the students by observing that today, Nigeria child of secondary school age spend more time watching television/video than reading books. Obikwere suggested that teachers should re-direct their teaching strategies towards the same direction. However, Obikwerre regretted that many teachers abuse these methods because they use them to entertain students instead of using them to achieve the stated educational objectives.

The results of the analysis in Table 14 revealed that there was no significant difference in the mean ratings of Junior and senior secondary school business subject teachers concerning the effectiveness of materials/visual aid instructional strategies for teaching business subjects at the secondary school level. In this regard, the lower and upper secondary school divisions did not influence the results of this hypothesis. The finding conforms to the previous study of Hanson (2010), who found that some teachers get their students stimulated whenever they teach with some learning aids, and in addition students attitude generate more interest for the lessons they teach, thereby helping to participate better in class.

## **Conclusion**

Based on the results of the findings and the test of hypothesis, it is pertinent to conclude that business subjects teachers in south-south, Nigeria secondary schools identified direct instructional strategies as ineffective, material/visual aid strategies as fairly effective, indirect and interactive strategies as effective, while independent and experimental instructional strategies were also identified as very effective for teaching business subjects at the secondary school level.

Business subject teachers have attained substantial progress in the area of awareness and identification of effective strategies for

teaching business subjects but more need to be done in area of effective application. This is because business subject's teachers suffer from lack of focus and proper direction on how to use effective instructional strategies for teaching business subjects at the secondary school level.

Lack of vocational skills among our school leavers was traced back to the absence of effective strategies in teaching skill subjects in secondary schools and was responsible for the high level of unemployment in south-south, Nigeria and the whole country. However, the use of effective strategies for teaching business subjects become inevitable in all secondary schools for the achievement of goals of the New business subject curriculum.

### **Implications of the study:**

There are two instructional strategies which this study revealed as very effective (independent and experimental) for teaching business subjects. Another two (indirect and interactive) were identified to be effective. If these strategies are used individually or jointly in teaching business subjects at the secondary school level, the following would be achieved; better performance by the students in examinations and on the job, better job satisfaction for the teachers, the students would acquire the necessary vocational skills intended to turn them from job seekers to job creators. This will go a long way in eradicating

unemployment, poverty and crimes in our society, thereby achieving one of the major educational objectives of introducing business subjects in all public secondary schools in Nigeria. Moreover, there will be no need for the government to make extra budgetary provisions for building, equipping and running a separate skills acquisition centers across the country since secondary schools would serve the purpose.

### **Recommendations**

Based on the findings, conclusion and implications of the study, recommendations were made as follows:

1. Independent and experimental instructional strategies which were adjudged to be very effective are recommended for compulsory application in teaching business subjects in all secondary schools in South-South, Nigeria. This framework would enable the students to acquire the necessary skills for paid or self-employment. Skill acquisition is a sustainable way of making the students perform on the job after graduation, become job creator instead of job seekers, thereby contributing positively to national development through eradication of unemployment, poverty and crimes.
2. Government should appoint independent supervisors to monitor and evaluate business subject teachers in secondary schools in

respect of effective teaching of business subjects because of its strategic importance to national development.

3. Government should use secondary schools as skill acquisition centre which is more accessible to the students instead of building, equipping and managing separate centers for skill acquisition.
4. Government should make teaching facilities adequately available as well as financial provisions for field-trips, office visits and other out of classroom teaching/learning activities.
5. School authorities should provide enough time in the school time tables for teaching the practical aspects of business subjects for mastery learning and sustainable acquisition.

#### **Limitations of the study:**

There are basically two fundamental limitations of the study:

1. Some business subject teachers in the rural areas were not comfortable in making available some information to the researcher such as academic qualifications, years of experience amongst others. The researcher spent an extra time to plead with the principals who in turn convinced them to supply the required information. This in part delayed the study.

2. Business subject teachers chosen for the study as respondents in some public secondary schools in the urban areas were indisposed. This made the researcher to visit and revisit the affected schools to ensure that their responses were captured. This also delayed the completion of the study.

### **Suggestions for Further Studies**

The researcher suggests the following areas for further study:

1. Assessment of the level of application of effective teaching strategies in business education in Nigeria.
2. Strategies for overcoming the factors militating against effective teaching of business subjects at secondary school level in South-South, Nigeria.
3. Basic competencies and desired training programmes necessary for business teachers for proper utilization of effective strategies in teaching business subjects at secondary school level.
4. Causes and implications of students' poor vocational skill acquisition in business education at secondary school level.

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## APPENDIX 1

### Population distribution by States

<b>S/N</b>	<b>STATES</b>	<b>MALES</b>	<b>FEMALE</b>	<b>TOTAL</b>
1	Akwa-Ibom State	1006	1104	2110
2	Bayelsa State	320	1695	2015
3	Cross-River State	1010	1420	2430
4	Delta State	801	1404	2205
5	Edo State	806	1519	2325
6	Rivers State	996	1209	2205
	<b>Total</b>	<b>4,939</b>	<b>8,351</b>	<b>13,290</b>

**Source:** PPSMB, (2013/2014)

## APPENDIX 2

### Sample Distribution by proportion

S/N	STATES	POPULATION	PROPORTION TO THE POPULATION	SAMPLE	MALE	FEMALE
1	Akwa-Ibom State	2110	16%	213	85	128
2	Bayelsa State	2015	15%	199	80	119
3	Cross River State	2430	18%	239	96	143
4	Delta State	2205	17%	226	90	136
5	Edo State	2325	17%	226	90	136
6	Rivers State	2205	17%	226	90	136
	<b>Total</b>	<b>13,290</b>	<b>100%</b>	<b>1,329</b>	<b>531</b>	<b>798</b>

**Source:** PPSMB, (2013/2014)

## APPENDIX 3

### LETTER OF PERMISSION

Department of Vocational Education,  
Nnamdi Azikiwe University,  
Akwa.

20<sup>th</sup> May, 2015.  
08033446792

The Chairman,  
Post Primary School Management  
Board,

Sir,

#### **PERMISSION TO ACCESS INFORMATION FOR RESEARCH**

I am a post graduate student of the above university and department, conducting a research on strategies considered effective business teachers in south-south, Nigeria for teaching new business subjects in secondary schools.

Kindly allow me access to the following information:

- 1) The number of public senior secondary schools in your state.
- 2) Number of Business subject teachers in these school with their academic qualification(s)
- 3) Other relevant information relating to this study.

This information is purely for research purposes.

Thanks for your co-operations.

Yours Faithfully,

**Ogwunte Peter Clinton**

## APPENDIX 4

### TRANSMITTAL LETTER

Department of Vocational Education,  
Nnamdi Azikiwe University,  
Akwa.

20<sup>th</sup> May, 2015.  
08033446792

Dear colleague,

I am a post graduate student of the above named institution and department, currently conducting a research to ascertain the strategies considered effective for teaching business subjects at secondary school level in south-south, Nigeria.

As one of the best professionals in the field, you have been selected to supply useful information for the study. Please respond to the attached questionnaire as sincerely as possible.

You are assured that your responses will be treated in strict confidence for the purpose of this research study.

Yours Faithfully,

**Ogwunte Peter Clinton**

## APPENDIX 5

Department of Vocational Education  
Nnamdi Azikiwe University, Awka

May 13<sup>th</sup>, 2015.

Dear .....

### REQUEST FOR VALIDATION OF INSTRUMENT

I am a post-graduate student (Ph.D) of the above named institution and department, currently conducting a research to find out the strategies considered effective by business teachers in south-south, Nigeria for teaching new business subjects in secondary schools.

Kindly validate the attached questionnaire to determine its face and content validity, relevance and reliability in relation to the study. I will be pleased to accept any criticism and corrections that you may come up with.

Attached herein are the vital information to guide you in the validation process.

1. Statement of the problem
2. Purpose of the study
3. Research question
4. Hypotheses

Yours Faithfully,

**Ogwunte Peter Clinton**



## APPENDIX 6

### QUESTIONNAIRE ON EFFECTIVENESS OF INSTRUCTIONAL STRATEGIES FOR TEACHING BUSINESS SUBJECTS IN SOUTH-SOUTH, NIGERIA SECONDARY SCHOOLS

#### SECTION A: PERSONAL DATA

##### INSTRUCTION:

Please tick (√) the information that is applicable to you.

1. Gender:      Male:                       Female
2. Location:    Urban                       Rural
3. Academic qualification:
  - Business education graduates Degree(s)
  - Non-business education graduates Degree(s)
4. Teaching experience: Below 5yrs                       Above 5yrs
5. School level:              Junior                       Senior secondary

#### QUESTIONNAIRE

##### SECTION B:

##### INSTRUCTION:

The following are six groups of instructional strategies use by business subject's teachers at the secondary school level. Please indicate the level of effectiveness of each item in the respective groups.

Use the following rating scale:

1. Very Effective              (VE)                      5points
2. Effective                      (E)                      4points
3. Fairly Effective              (FE)                      3points
4. Ineffectively              (IE)                      2points
5. Very ineffective              (VI)                      1point

## APPENDIX 6 (A)

### QUESTIONNAIRE ON EFFECTIVENESS OF INSTRUCTIONAL STRATEGIES FOR TEACHING BUSINESS SUBJECTS IN SOUTH-SOUTH, NIGERIA SECONDARY SCHOOLS.

#### SECTION B (1): Direct Instructional Strategies

S/N	Items of direct instructional strategies	VE 5	E 4	FE 3	IE 2	VI 1
1	Lecture method					
2	Individualized instruction method					
3	Information, advice and guidance (IAG)					
4	Programmed instruction method					
5	Brainstorming method					
6	Support (scaffolding) method					
7	Seminar method					
8	Guided and shared reading method					
9	Listen and visualize method					
10	Model – lead –test instructional method (MLTI)					
11	Structure overview method					
12	Explicit teaching method					
13	Self questioning method					
14	Deductive instruction method					
15	Peer partner learning method					
16	Team teaching method					

## APPENDIX 6 (B)

### Section B (2): Indirect Instructional Strategies

S/N	Items of indirect instructional strategies	VE 5	E 4	FE 3	IE 2	VI 1
17	Inquiry –based instruction method					
18	Assignments or Dalton method					
19	Questioning technique					
20	Read and practice method					
21	Report back session method					
22	Questionnaire method					
23	Term paper method					
24	Concept learning method					
25	Self evaluation method					
26	Use of Brochures method					
27	Flexible learning method					
28	Close test method					
29	Reference reading method					

## APPENDIX 6 (C)

### Section B (3): Interactive Instructional Strategies

S/N	Items of interactive instructional strategies	VE 5	E 4	FE 3	IE 2	VI 1
30	Discussion method					
31	Debates method					
32	Use of guest speaker/resource person					
33	Story –telling method					
34	Role playing method					
35	Conferencing					
36	Jigsaw method					
37	Team- based learning (TBL)method					
38	Question and answer (Q&A) method					
39	Use of Panel of experts					
40	Buzz group method					
41	Peer partner method					
42	Classroom conversation method					
43	Think, pair and share method					
44	Heterogeneous grouping method					
45	Tutorial group experience method					
46	Study groups method					
47	Reciprocal questioning method					

## APPENDIX 6 (D)

### Section B (4): Experimental Instructional Strategies

S/N	Items of experimental strategies	VE 5	E 4	FE 3	IE 2	VI 1
48	Demonstration method					
49	Field trips/ excursion method					
50	Workshop method					
51	Laboratory exposure method					
52	Field interview method					
53	Office visits method					
54	Survey method					
55	Inter disciplinary method					
56	Industrial cooperative method					
57	School affiliations method					
58	Simulation method					
59	Games and play method					
60	Drill-and- practice method					
61	Narrative method					
62	Visits to employment agency /consulting firms					
63	Field observation method					
64	Filling out forms method					

## APPENDIX 6 (E)

### Section B (5): Independent Instructional Strategies

S/N	Items of Independent instructional strategies	VE 5	E 4	FE 3	IE 2	VI 1
65	Critical thinking method					
66	E- learning method					
67	Problem solving					
68	Project method					
69	Computer assisted instruction (CAI) method					
70	Discovery method					
71	Assigned Questions method					
72	Cross word puzzles method					
73	Library research method					
74	Exploratory method					
75	Correspondence course/ distance learning					
76	Case study method					
77	Take home test/ home work method					
78	Decision-making process method					
79	Memorization method					
80	Text book method					
81	Manual and student prepared note book					

## APPENDIX 6 (F)

### Section B (6): Instructional Material/Visual Aids Strategies

S/N	Items of Material/Visual Aids strategies	VE 5	E 4	FE 3	IE 2	VI 1
82	Instructional television					
83	DVDs					
84	Instructional films/ films show					
85	CDs					
86	Radio programmes					
87	Work book					
88	Bulletin board					
89	Photographs/pictures					
90	Use of white board					
91	Use of ICT power point					
92	Flannel boards					
93	Cartons and comics					
94	Exhibition and display					
95	Posters					
96	Flip charts					
97	Multimedia projector					
98	Tape recorder					
99	Video clip method					
100	Community/local resources					

## APPENDIX 7 (A)

### CALCULATION OF RELIABILITY COEFFICIENT USING RANK ORDER CORRELATION

#### SECTION A

S/N	ODD SCORES	EVEN SCORES	ODD SCORES RANK	EVEN SCORES RANK	DIFFERENCE IN RANK (D)	SQUARE OF DIFFERENCE (D) <sup>2</sup> .
<b>SECTION A</b>						
1	2.00	2.70	17	11	6	36
2	3.29	3.14	5.5	7	-1.5	2.25
3	3.43	3.14	3.5	7	-3.5	12.25
4	3.14	3.43	7.5	4.5	3	9
5	2.14	2.14	15	17	-2	4
6	3.29	3.86	5.5	1.5	4	16
7	1.29	2.00	20	18	2	4
8	3.86	3.43	1	4.5	-3.5	12.25
9	2.57	2.86	13	10	3	9
10	2.71	2.57	11.5	12	-0.5	0.25
11	2.71	2.29	11.5	1.5	10	100
12	1.57	1.71	18	19	-1	1
13	3.00	3.14	9	7	2	4
14	1.43	1.43	19	20	-1	1
15	3.43	3.57	3.5	3	0.5	0.25
16	2.14	2.43	15	13.5	1.5	2.25
17	3.57	3.00	2	9	-7	49
18	3.14	3.86	7.5	1.5	6	36
19	2.86	2.43	10	13.5	-3.5	12.25
20	2.14	2.29	15	15.5	-0.5	0.25
311						

Using Spearman Rank Order Correlation Coefficient 311

$$S = 1 - \frac{6 \sum D^2}{N(N^2-1)} = 1 - \frac{6 \times 311}{20(20^2-1)} = 1 - \frac{1.866}{7,980} = 1.0.23$$

$$S = 0.77$$

Using spearman Brown prophecy formula:

$$R = \frac{2s}{1+s} = \frac{2 \times 0.76}{1 + 0.76} = \frac{1.52}{1.76} = 0.86$$



**APPENDIX 7 (B)**  
**CALCULATION OF RELIABILITY COEFFICIENT**  
**USING RANK ORDER CORRELATION**  
**SECTION B**

S/N	ODD SCORES	EVEN SCORES	ODD SCORES RANK	EVEN SCORES RANK	DIFFERENCE IN RANK (D)	SQUARE OF DIFFERENT (D) <sup>2</sup> .
<b>SECTION B</b>						
1	0.5	0.75	8	7.5	0.5	0.25
2	0.25	0.75	14	7.5	6.5	42.25
3	0.25	0.75	14	7.5	6.5	42.25
4	0.75	0.75	2.5	7.5	-5	25
5	0	0.75	18.5	.5	11	121
6	0.75	0.75	2.5	7.5	-5	25
7	0	0	18.5	20	-1.5	2.25
8	0.25	0.75	14	7.5	6.5	42.25
9	0.5	1	8	1.5	6.5	42.25
10	0.5	0.25	8	18	-10	100
11	0.5	0.75	8	7.5	0.5	0.25
12	0	0.25	18.5	18	0.5	0.25
13	0.5	0.5	8	14.5	-6.5	42.25
14	0	0.25	18.5	18	0.5	0.25
15	0.25	0.75	14	7.5	6.5	42.25
16	0.75	0.75	2.5	7.5	-5	25
17	0.75	0.5	2.5	14.5	-12	144
18	0.5	0.5	8	14.5	-6.5	42.25
19	0.25	0.5	14	14.5	-0.5	0.25
20	0.5	1	8	1.5	6.5	42.25
781.5						

Using Spearman Rank Order Correlation Coefficient:

$$S = 1 - \frac{6 \sum D^2}{N(N^2-1)} = 1 - \frac{6 \times 781.5}{20(20^2-1)} = 1 - \frac{4689}{7,980} = 1.059$$

$$S = 0.41$$

Using spearman Brown prophecy formula:

$$R = \frac{2s}{1+s} = \frac{2 \times 0.41}{1 + 0.41} = \frac{1.82}{1.41} = 0.58$$

**APPENDIX 7 (C)**  
**CALCULATION OF RELIABILITY COEFFICIENT**  
**USING RANK ORDER CORRELATION**

**SECTION C**

S/N	ODD SCORES	EVEN SCORES	ODD SCORES RANK	EVEN SCORES RANK	DIFFERENCE IN RANK (D)	SQUARE OF DIFFERENT (D) <sup>2</sup> .
<b>SECTION C</b>						
1	2	2	16.5	14	2.5	6.25
2	2	1.8	16.5	16.5	0	0
3	2.4	2.6	6	7.5	-1.5	2.25
4	2.2	3.4	12.5	2	10.5	110.25
5	2.4	1.8	6	16.5	-10.5	110.25
6	3	3.8	1	1	0	0
7	1.4	1.2	20	20	0	0
8	2.6	2.8	2	5.5	-3.5	12.25
9	1.8	2.8	18.5	5.5	13	169
10	2.4	1.6	6	19	-13	169
11	2.2	2.4	12.5	9.5	3	9
12	2.4	2.2	6	12.	-6	36
13	2.4	3.2	6	13	3	9
14	2.2	1.8	12.5	16.5	-4	16
15	2.4	3	6	4	2	4
16	2.2	2.4	12.5	9.5	3	9
17	2.4	2.2	6	12	-6	36
18	2.2	2.2	12.5	12	0.5	0.25
19	2.2	2.6	12.5	7.5	5	25
20	1.8	1.8	18.5	16.5	2	4
727.5						

Using Spearman Rank Order Correlation Coefficient:

$$S = 1 - \frac{6 \sum D^2}{N(N^2-1)} = 1 - \frac{6 \times 727.5}{20(20^2-1)} = 1 - \frac{4.365}{7,980} = 1.055$$

$$S = 0.45$$

Using spearman Brown prophecy formula:

$$R = \frac{2s}{1+s} = \frac{2 \times 0.45}{1 + 0.45} = \frac{0.9}{1.45} = 0.62$$

## APPENDIX 7 (D)

### CALCULATION OF RELIABILITY COEFFICIENT USING RANK ORDER CORRELATION

#### SECTION D

S/N	ODD SCORES	EVEN SCORES	ODD SCORES RANK	EVEN SCORES RANK	DIFFERENCE IN RANK(D)	SQUARE OF DIFFERENT (D) <sup>2</sup> .
<b>SECTION D</b>						
1	2.42	1.92	11	15	-4	16
2	2	1.9	16.5	16	0.5	0.25
3	2.33	2.3	12.5	12	0.5	0.25
4	3.58	3.46	4	5	-1	1
5	1.83	1.85	19	17	2	4
6	3.17	2.62	7.5	10	-2.5	6.25
7	2	2.08	16.5	13	3.5	12.25
8	4.17	3.8	1	2	-1	1
9	3.92	3.85	2	1	1	1
10	3	2.69	9	8.5	0.5	0.25
11	1.92	1.77	18	18.5	-0.5	0.25
12	2.08	2	15	14	1	1
13	3.5	3.62	5	3.5	1.5	2.25
14	1.58	1.15	20	20	0	0
15	3.17	3.08	75	6	1.5	2.25
16	3.33	2.85	6	7	-1	1
17	2.67	2.69	10	8.5	1.5	2.25
18	3.67	3.62	3	3.5	0.5	0.25
19	2.17	1.77	14	18.5	-4.5	20.25
20	2.33	2.31	12.5	11	1	2.25
74						

Using Spearman Rank Order Correlation Coefficient:

$$S = 1 - \frac{6 \sum D^2}{N(N^2-1)} = 1 - \frac{6 \times 74}{20(20^2-1)} = 1 - \frac{444}{7,980} = 1 - 0.0556 = 0.9444$$

$$S = 0.45$$

Using spearman Brown prophecy formula:

$$R = \frac{2s}{1+s} = \frac{2 \times 0.94}{1 + 0.95} = \frac{1.88}{1.94} = 0.97$$

## APPENDIX 7 (E)

### CALCULATION OF RELIABILITY COEFFICIENT USING RANK ORDER CORRELATION

#### SECTION A

S/N	ODD SCORES	EVEN SCORES	ODD SCORES RANK	EVEN SCORES RANK	DIFFERENCE IN RANK (D)	SQUARE OF DIFFERENCE (D) <sup>2</sup> .
<b>SECTION A</b>						
1	2.00	2.70	17	11	6	36
2	3.29	3.14	5.5	7	-1.5	2.25
3	3.43	3.14	3.5	7	-3.5	12.25
4	3.14	3.43	7.5	4.5	3	9
5	2.14	2.14	15	17	-2	4
6	3.29	3.86	5.5	1.5	4	16
7	1.29	2.00	20	18	2	4
8	3.86	3.43	1	4.5	-3.5	12.25
9	2.57	2.86	13	10	3	9
10	2.71	2.57	11.5	12	-0.5	0.25
11	2.71	2.29	11.5	1.5	10	100
12	1.57	1.71	18	19	-1	1
13	3.00	3.14	9	7	2	4
14	1.43	1.43	19	20	-1	1
15	3.43	3.57	3.5	3	0.5	0.25
16	2.14	2.43	15	13.5	1.5	2.25
17	3.57	3.00	2	9	-7	49
18	3.14	3.86	7.5	1.5	6	36
19	2.86	2.43	10	13.5	-3.5	12.25
20	2.14	2.29	15	15.5	-0.5	0.25
311						

Using Spearman Rank Order Correlation Coefficient 311

$$S = 1 - \frac{6 \sum D^2}{N(N^2-1)} = 1 - \frac{6 \times 311}{20(20^2-1)} = 1 - \frac{1.866}{7,980} = 1.0.23$$

$$S = 0.77$$

Using spearman Brown prophecy formula:

$$R = \frac{2s}{1+s} = \frac{2 \times 0.76}{1+0.76} = \frac{1.52}{1.76} = 0.86$$

**APPENDIX 7 (F)**  
**CALCULATION OF RELIABILITY COEFFICIENT**  
**USING RANK ORDER CORRELATION**

**SECTION C**

<b>S/N</b>	<b>ODD SCORES</b>	<b>EVEN SCORES</b>	<b>ODD SCORES RANK</b>	<b>EVEN SCORES RANK</b>	<b>DIFFERENCE IN RANK (D)</b>	<b>SQUARE OF DIFFERENT (D)<sup>2</sup>.</b>
<b>SECTION C</b>						
1	2	2	16.5	14	2.5	6.25
2	2	1.8	16.5	16.5	0	0
3	2.4	2.6	6	7.5	-1.5	2.25
4	2.2	3.4	12.5	2	10.5	110.25
5	2.4	1.8	6	16.5	-10.5	110.25
6	3	3.8	1	1	0	0
7	1.4	1.2	20	20	0	0
8	2.6	2.8	2	5.5	-3.5	12.25
9	1.8	2.8	18.5	5.5	13	169
10	2.4	1.6	6	19	-13	169
11	2.2	2.4	12.5	9.5	3	9
12	2.4	2.2	6	12.	-6	36
13	2.4	3.2	6	13	3	9
14	2.2	1.8	12.5	16.5	-4	16
15	2.4	3	6	4	2	4
16	2.2	2.4	12.5	9.5	3	9
17	2.4	2.2	6	12	-6	36
18	2.2	2.2	12.5	12	0.5	0.25
19	2.2	2.6	12.5	7.5	5	25
20	1.8	1.8	18.5	16.5	2	4
727.5						

Using Spearman Rank Order Correlation Coefficient:

$$S = 1 - \frac{6 \sum D^2}{N(N^2-1)} = 1 - \frac{6 \times 727.5}{20(20^2-1)} = 1 - \frac{4.365}{7,980} = 1.055$$

$$S = 0.45$$

Using spearman Brown prophecy formula:

$$R = \frac{2s}{1+s} = \frac{2 \times 0.45}{1+0.45} = \frac{0.9}{1.45} = 0.62$$

## APPENDIX 8

### SUMMARY OF DATA COLLECTED FOR RESEARCH QUESTION 1

How effective do business subject teachers in south-south, Nigeria Secondary schools consider direct instructional strategies for teaching the new business subjects? N = 1,329

S/N	MALE BUSINESS TEACHERS = 531							FEMALE BUSINESS TEACHERS = 798							$\sum(\bar{X})$	$\sum(Sd)$	REMARK	
	VE	E	FE	IE	VI	$\bar{x}$	SD <sub>1</sub>	VE	E	FE	IE	VI	$\bar{x}$	SD <sub>2</sub>	XX			
1	251	50	180	30	20	0.89	0.94	608	65	42	39	44	0.91	0.95	<b>0.90</b>	0.95	Ineffective	
2	238	62	181	29	21	0.41	0.64	602	70	46	41	39	1.91	1.38	1.16	1.01	Ineffective	
3	230	70	181	28	22	1.03	0.91	611	62	44	42	39	1.50	1.22	1.27	1.07	Fairly Effective	
4	240	60	180	30	20	0.71	0.84	622	78	40	30	28	0.06	0.02	1.89	0.43	Ineffective	
5	296	102	81	27	25	0.51	0.71	616	62	42	40	38	1.03	0.01	0.77	0.36	ineffective	
6	290	108	80	27	26	0.73	0.47	618	60	48	40	32	0.81	0.25	0.77	0.36	Ineffective	
7	298	100	80	28	25	0.39	0.36	610	60	48	49	31	1.15	0.36	0.77	0.36	Ineffective	
8	239	59	182	30	20	0.29	0.53	609	73	46	40	30	1.13	0.06	0.77	0.29	Very Ineffective	
9	240	180	61	28	22	0.40	0.63	610	62	46	40	40	1.89	0.37	1.15	0.50	Ineffective	
10	230	183	70	26	22	0.58	0.76	700	44	20	18	16	1.09	0.04	0.84	0.40	Ineffective	
11	300	103	80	25	23	0.46	0.67	698	40	22	18	20	1.12	0.06	0.79	0.39	Ineffective	
12	296	102	81	27	25	0.51	0.71	616	62	42	40	38	1.03	0.01	0.77	0.36	Ineffective	
13	241	178	60	31	20	0.73	0.85	603	68	47	41	39	0.63	0.79	0.68	0.82	Very Ineffective	
14	282	125	63	41	20	0.21	0.45	608	74	44	42	30	1.23	0.10	0.44	0.28	Very Ineffective	
15	230	180	71	28	22	0.78	0.88	702	40	22	20	14	0.64	0.8	0.71	0.84	Very Ineffective	
16	239	184	57	29	21	0.81	0.9	613	60	45	42	38	0.69	0.83	0.75	0.87	Ineffective	
<b>Aggregates <math>\bar{x}</math> &amp; SD<sup>2</sup></b>						7.81	6.71							14.83	6.63	22.64	16.2	<b>Ineffective</b>
						0.60	0.51							1.11	0.50	1.33	0.76	

## APPENDIX 9

### SUMMARY OF DATA COLLECTED FOR RESEARCH QUESTION 2

How effective do business subject teachers consider indirect instructional strategies effective for teaching the new business subjects in south-south, Nigeria secondary schools? N = 1,329.

S/N	MALE BUSINESS TEACHERS = 531							FEMALE BUSINESS TEACHERS = 798							$\sum(\bar{x})$	$\sum(SD)$	REMARK	
	VE	E	FE	IE	VI	$\bar{x}$	SD <sub>1</sub>	VE	E	FE	IE	VI	$\bar{x}$	SD <sub>2</sub>	$\bar{x} \bar{x}$			
1	231	184	58	38	20	1.70	0.30	680	60	26	18	14	2.89	1.7	2.29	1.00	Vary Effective	
2	250	183	50	26	22	1.65	0.28	670	58	40	16	14	1.67	0.29	1.66	0.29	Fairly Effective	
3	230	70	181	28	22	1.06	0.02	611	62	44	42	39	2.36	1.53	1.71	0.78	Fairly Effective	
4	253	50	178	30	20	1.64	0.28	606	67	42	39	44	3.02	1.73	2.33	1.01	Very Effective	
5	296	104	81	25	25	1.52	0.23	616	60	44	40	38	1.59	1.26	1.56	0.75	Fairly Effective	
6	239	184	60	30	21	1.68	0.29	613	60	43	44	38	2.87	1.69	2.28	0.99	Very Effective	
7	241	179	60	31	19	1.59	0.26	603	68	47	41	39	1.55	1.24	1.57	0.75	Fairly Effective	
8	242	60	180	28	20	1.68	0.29	622	78	40	30	28	2.89	1.7	2.29	0.99	Very Effective	
9	300	103	80	24	24	1.58	0.25	698	38	20	18	20	1.58	1.25	1.58	0.75	Fairly Effective	
10	230	181	70	28	22	1.57	0.25	704	40	20	20	14	3.01	1.73	2.29	0.99	Very Effective	
11	303	100	78	26	24	1.50	1.22	698	42	20	18	20	3.06	1.74	2.28	1.48	Very Effective	
12	240	60	180	30	20	0.87	0.93	620	80	40	30	28	2.32	1.53	1.59	1.23	Fairly Effective	
13	239	182	58	29	21	1.68	0.29	613	62	44	40	41	1.63	1.27	1.66	0.78	Fairly Effective	
<b>Aggregates <math>\bar{x}</math> &amp; SD<sup>2</sup></b>						19.51	4.89							30.44	18.66	50.16	23.42	<b>Effective</b>
						1.51	0.37							2.34	1.43	3.57	1.01	



## APPENDIX 10

### SUMMARY OF DATA COLLECTED FOR RESEARCH QUESTION 3

How effective do business subject teachers in south-south, Nigeria secondary schools consider interactive instructional strategies for teaching the new business subjects?  
N = 1,329

S/N	URBAN BUSINESS SUBJECTS TEACHERS = 1,212							RURAL BUSINESS SUBJECT TEACHERS = 117							$\Sigma(\bar{x})$	$\Sigma(SD)$	REMARK	
	VE	E	FE	IE	VI	$\bar{x}$	$SD_1$	VE	E	FE	IE	VI	$\bar{x}$	$SD_2$	xx			
1	300	250	239	229	194	1.88	1.37	55	39	8	7	8	2.89	1.7	2.39	1.54	Very Effective	
2	304	259	239	220	190	1.92	1.38	64	30	10	5	8	2.08	1.44	2.00	1.41	Effective	
3	309	250	234	220	199	1.98	1.40	63	32	9	7	5	2.76	1.66	2.37	1.53	Very Effective	
4	330	254	238	200	190	1.21	0.21	62	33	10	6	5	1.97	1.40	1.59	0.81	Fairly Effective	
5	309	250	239	220	194	1.80	1.34	64	30	8	7	8	2.56	1.60	2.18	1.47	Effective	
6	304	254	230	229	190	2.08	1.44	59	34	8	9	7	2.54	1.59	2.31	1.52	Very Effective	
7	330	254	238	210	180	1.60	0.26	50	39	13	7	8	3.11	1.76	2.36	1.01	Very Effective	
8	302	259	239	222	190	1.48	1.21	62	30	13	6	5	2.98	1.72	1.87	1.45	Effective	
9	309	250	230	229	194	0.96	0.97	55	30	17	7	8	2.11	1.45	1.53	1.21	Fairly Effective	
10	338	254	230	200	190	1.57	1.25	52	33	18	7	7	3.01	1.73	2.29	1.49	Very Effective	
11	300	250	239	229	194	1.84	1.35	59	33	18	7	-	1.89	1.37	2.23	1.36	Effective	
12	330	254	238	200	190	1.68	1.29	64	30	10	7	6	1.99	1.41	1.84	1.35	Effective	
13	309	259	230	220	194	1.48	1.21	65	31	10	6	5	2.10	1.49	1.79	1.35	Effective	
14	304	259	235	224	190	1.01	1.00	63	32	9	7	5	1.99	1.41	1.50	1.21	Fairly Effective	
15	309	254	233	226		1.05	0.02	62	33	10	6	5	1.95	1.39	1.50	0.71	Fairly Effective	
16	300	250	234	229	199	1.37	1.17	55	39	8	9	7	1.83	1.35	1.60	1.26	Fairly Effective	
17	309	254	230	229	190	1.67	1.17	59	34	8	9	7	2.04	1.42	1.86	1.29	Effective	
18	304	259	230	220	199	0.99	0.10	63	37	8	5	5	1.50	1.22	1.51	0.66	Fairly Effective	
<b>Aggregates <math>\bar{x}</math> &amp; <math>SD^2</math></b>						27.57	7.26							40.93	5.57	69.39	12.79	<b>Effective</b>
						1.53	0.40							2.27	0.31	3.54	0.35	

## APPENDIX 11

### SUMMARY OF DATA COLLECTED FOR RESEARCH QUESTION 4

How effective do business subject teachers consider experimental instructional strategies effective for teaching the new business subjects in south-

S/N	DEGREE(S) BUSINESS SUBJECTS TEACHERS = 1,231							NON-DEGREE(S) BUSINESS SUBJECT TEACHERS = 98							$\sum(\bar{x})$	$\sum(SD)$	REMARK	
	VE	E	FE	IE	VI	$\bar{x}$	$SD_1$	VE	E	FE	IE	VI	$\bar{x}$	$SD_2$	$\bar{x}$	$\bar{x}$		
1	256	246	245	240	244	1.27	0.12	36	28	13	11	10	3.69	1.92	2.48	1.02	Very Effective	
2	257	250	240	244	240	1.80	1.34	35	29	14	12	8	3.02	1.73	2.41	1.54	Very Effective	
3	256	253	242	244	236	1.84	1.35	33	29	13	13	11	3.10	1.76	2.47	1.56	Very Effective	
4	259	250	240	242	240	2.19	1.47	39	26	14	12	8	2.58	1.60	2.39	1.54	Very Effective	
5	253	247	246	242	240	2.39	1.54	33	30	14	12	9	2.53	1.59	2.46	1.59	Very Effective	
6	257	246	244	242	242	1.41	1.18	36	29	12	11	10	3.11	1.76	2.26	1.47	Very Effective	
7	259	244	244	243	241	1.37	1.17	31	32	14	12	9	1.63	1.27	1.50	1.22	Fairly Effective	
8	256	250	245	243	237	0.85	0.92	35	30	14	13	7	1.15	1.07	1.00	0.99	Ineffective	
9	258	245	243	242	243	1.67	1.29	39	26	14	8	12	3.18	1.78	2.43	1.54	Very Effective	
10	253	247	246	240	242	2.39	1.54	36	28	12	12	10	2.48	1.57	2.44	1.56	Very Effective	
11	259	250	240	242	240	0.00	0.00	33	29	13	13	11	0.00	0.00	0.00	0.00	Very Ineffective	
12	256	246	245	240	244	2.16	1.46	35	29	14	12	8	2.41	1.55	2.29	1.51	Very Effective	
13	253	247	246	242	240	1.99	0.41	36	28	14	11	9	2.80	1.67	2.39	1.04	Very Effective	
14	259	250	240	240	242	0.68	0.82	36	27	13	12	10	0.92	0.95	0.80	0.89	Ineffective	
15	257	250	240	244	240	1.42	1.20	35	30	17	10	7	3.14	1.77	2.28	1.49	Very Effective	
16	256	250	245	240	240	1.68	1.29	39	26	14	12	8	3.17	1.78	2.43	1.54	Very Effective	
17	256	253	242	244	236	2.32	1.52	35	30	14	13	7	2.56	1.6	2.44	1.56	Very Effective	
<b>Aggregates <math>\bar{x}</math> &amp; <math>SD^2</math></b>						27.43	7.51							41.47	5.97	69.41	43.99	<b>Very Effective</b>
						2.32	1.09							2.43	1.49	4.52	2.01	

## APPENDIX 12

### SUMMARY OF DATA COLLECTED FOR RESEARCH QUESTION 5

How effective do business subject teachers in south-south, Nigeria secondary schools consider independent instructional strategies for teaching the new business subjects? N = 1,329

S/N	BUSINESS TEACHERS WITH EXPERIENCE OF 5YRS AND BELOW = 139							BUSINESS TEACHERS WITH EXPERIENCE OF 5YRS AND ABOVE = 1,190							$\Sigma(\bar{x})$	$\Sigma(SD)$	REMARK	
	VE	E	FE	IE	VI	$\bar{x}$	$SD_1$	VE	E	FE	IE	VI	$\bar{x}$	$SD_2$				$\bar{x}$
1	51	36	20	17	15	1.85	1.36	240	216	213	211	210	3.01	1.73	2.43	1.55	Very Effective	
2	56	37	20	16	10	1.59	1.26	254	220	200	210	206	3.19	1.78	2.39	1.52	Very Effective	
3	50	37	26	13	13	1.65	1.28	243	216	210	211	210	3.15	1.77	2.40	1.53	Very Effective	
4	64	35	20	10	10	1.66	1.28	253	226	200	211	200	3.12	1.76	2.39	1.52	Very Effective	
5	51	36	20	18	10	1.84	1.35	250	229	210	200	201	3.01	1.73	2.43	1.54	Very Effective	
6	57	30	20	17	15	1.95	1.39	240	216	213	211	210	2.99	1.72	2.47	1.56	Very Effective	
7	64	30	25	12	8	1.79	1.33	250	229	200	210	201	2.96	1.72	2.38	1.53	Very Effective	
8	61	33	20	12	13	1.44	0.20	253	226	200	211	200	1.56	1.24	1.50	0.72	Very Effective	
9	64	30	20	10	15	0.63	0.79	254	220	200	210	206	1.37	1.17	1.00	0.98	Ineffective	
10	62	32	22	10	13	1.798	1.34	240	216	213	211	210	3.12	1.76	2.46	1.55	Very Effective	
11	50	37	25	17	10	0.44	0.66	250	229	200	210	201	0.56	0.74	0.50	0.70	Very Ineffective	
12	51	36	20	18	14	2.13	1.45	243	216	210	211	210	2.72	1.64	2.43	1.55	Very Effective	
13	54	36	20	18	10	1.03	0.01	240	219	210	213	208	1.97	1.40	1.50	0.71	Fairly Effective	
14	56	31	22	16	14	0.96	0.97	253	226	200	211	200	3.89	1.97	2.43	0.47	Very Effective	
15	68	34	23	9	6	0.00	0.00	240	216	213	221	200	0.00	0.00	0.00	0.00	Very Ineffective	
16	66	34	22	10	8	0.23	0.47	250	229	200	210	201	1.03	0.01	0.63	0.24	Very Ineffective	
17	64	35	20	10	10	0.36	0.6	253	226	200	211	200	1.70	1.30	1.03	0.95	Ineffective	
<b>Aggregates <math>\bar{x}</math> &amp; <math>SD^2</math></b>						48.35	7.19							49.35	7.88	97.7	39.18	<b>Very Effective</b>
						2.33	0.92							2.43	0.37	4.53	2.03	

## APPENDIX 13

### SUMMARY OF DATA COLLECTED FOR RESEARCH QUESTION 6

How effective do business subject teachers in south-south, Nigeria secondary schools consider material/visual aids instructional strategies for teaching the new business subjects? N = 1,329

S/N	JUNIOR SECONDARY SCHOOL BUSINESS SUBJECT TEACHERS = 315							SENIOR SECONDARY SCHOOL BUSINESS SUBJECT TEACHERS = 1,014							$\Sigma(\bar{x})$	$\Sigma(SD)$	REMARK	
	VE	E	FE	IE	VI	$\bar{x}$	SD <sub>1</sub>	VE	E	FE	IE	VI	$\bar{x}$	SD <sub>2</sub>				$\bar{x}$
1	96	63	59	49	48	1.87	1.36	360	189	166	150	149	2.01	1.41	1.94	1.39	Effective	
2	106	61	67	41	40	1.75	1.32	369	186	168	148	143	1.99	0.41	1.87	0.87	Effective	
3	159	59	40	32	25	1.76	1.31	372	188	166	148	140	2.15	1.46	1.95	1.38	Effective	
4	151	64	40	30	20	0.28	0.52	376	188	168	144	138	0.72	0.84	0.50	0.68	Very Ineffective	
5	155	60	38	31	21	0.97	0.98	384	180	169	143	138	1.03	0.01	1.00	0.49	Ineffective	
6	106	61	67	43	38	1.09	0.04	393	180	164	143	134	1.91	1.38	1.50	0.71	Fairly Effective	
7	156	68	30	30	21	0.56	0.74	393	183	164	140	134	0.62	0.78	0.59	0.76	Very Ineffective	
8	151	64	40	30	20	1.46	1.20	397	183	160	144	130	1.98	0.40	1.72	0.80	Fairly Effective	
9	96	63	59	49	48	1.46	1.20	400	180	160	142	132	1.54	1.24	1.50	1.22	Fairly Effective	
10	159	49	50	32	25	1.05	0.02	402	181	160	140	131	3.18	1.78	2.12	1.90	Effective	
11	99	60	59	49	48	0.34	0.58	401	182	155	145	131	0.96	0.97	0.65	0.78	Very Ineffective	
12	150	65	39	30	21	0.39	0.62	406	187	150	140	131	0.61	0.78	0.50	0.70	Very Ineffective	
13	106	67	61	41	40	1.31	0.55	422	180	157	140	120	3.12	1.76	2.22	1.16	Effective	
14	99	69	50	49	48	0.98	0.98	425	180	154	135	125	1.16	1.07	0.07	1.03	Ineffective	
15	155	60	38	31	21	0.44	0.66	372	188	166	148	140	0.56	0.74	0.50	0.70	Very Ineffective	
16	151	60	40	30	24	1.25	0.11	393	183	164	140	134	3.21	1.79	2.23	0.95	Effective	
17	99	69	50	57	40	0.62	0.78	376	188	168	144	138	0.78	0.88	1.40	0.83	Vary Ineffective	
18	154	60	40	30	21	0.08	0.28	397	183	160	140	134	1.10	1.04	0.59	0.66		
19	155	68	31	30	21	1.08	0.04	369	186	168	148	143	1.06	0.03	0.07	0.04		
<b>Aggregates <math>\bar{x}</math> &amp; SD<sup>2</sup></b>						19.41	6.37							31.03	6.91	50.42	32.09	<b>Fairly Effective</b>
						1.02	0.69							1.63	0.98	2.51	1.03	

## APPENDIX 14

$$Z - \text{cal} = \frac{\bar{x}_1 - \bar{x}_2}{\sqrt{\frac{(SD_1)^2}{n_1} + \frac{(SD_2)^2}{n_2}}}$$

$$Z - \text{cal} = \frac{0.60 - 1.11}{\sqrt{\frac{(0.51)^2}{531} + \frac{(0.50)^2}{798}}}$$

$$Z - \text{cal} = \frac{0.51}{\sqrt{\frac{(0.51)^2}{531} + \frac{0.25}{798}}}$$

$$Z - \text{cal} = \frac{0.51}{\sqrt{4.898305085 + 3.13283208}}$$

$$Z - \text{cal} = \frac{0.51}{\sqrt{8.031137165}}$$

$$Z - \text{cal} = \frac{0.51}{2.833926104}$$

$$Z - \text{cal} = \underline{\underline{0.17}}$$

## APPENDIX 15

$$Z - \text{cal} = \frac{\bar{x}_1 - \bar{x}_2}{\sqrt{\frac{(SD_1)^2}{n_1} + \frac{(SD_2)^2}{n_2}}}$$

$$Z - \text{cal} = \frac{1.51 - 2.34}{\sqrt{\frac{(0.37)^2}{531} + \frac{(1.43)^2}{798}}}$$

$$Z - \text{cal} = \frac{0.83}{\sqrt{\frac{0.1369}{531} + \frac{2.0449}{798}}}$$

$$Z - \text{cal} = \frac{0.83}{\sqrt{2.578154426 + 2.562531328}}$$

$$Z - \text{cal} = \frac{0.83}{\sqrt{5.140685754}}$$

$$Z - \text{cal} = \frac{0.83}{2.267308041}$$

$$Z - \text{cal} = \underline{\underline{0.36}}$$

## APPENDIX 16

$$Z - \text{cal} = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\frac{(SD_1)^2}{n_1} + \frac{(SD_2)^2}{n_2}}}$$

$$Z - \text{cal} = \frac{1.53 - 2.27}{\sqrt{\frac{(0.40)^2}{1,212} + \frac{(0.31)^2}{117}}}$$

$$Z - \text{cal} = \frac{0.74}{\sqrt{\frac{0.16}{1,212} + \frac{0.0961}{117}}}$$

$$Z - \text{cal} = \frac{0.74}{\sqrt{1.268646865 + 0.019230769}}$$

$$Z - \text{cal} = \frac{0.74}{\sqrt{0.020499415}}$$

$$Z - \text{cal} = \frac{0.74}{0.143176167}$$

$$Z - \text{cal} = \underline{\underline{5.16}}$$

## APPENDIX 17

$$Z - \text{cal} = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\frac{(SD_1)^2}{n_1} + \frac{(SD_2)^2}{n_2}}}$$

$$Z - \text{cal} = \frac{2.32 - 2.43}{\sqrt{\frac{(1.09)^2}{1,231} + \frac{(1.49)^2}{98}}}$$

$$Z - \text{cal} = \frac{0.11}{\sqrt{\frac{1.1881}{1,231} + \frac{2.2201}{98}}}$$

$$Z - \text{cal} = \frac{0.11}{\sqrt{9.651502843 + 0.02265408}}$$

$$Z - \text{cal} = \frac{0.11}{\sqrt{9.674156924}}$$

$$Z - \text{cal} = \frac{0.11}{3.110330678}$$

$$Z - \text{cal} = \underline{\underline{0.04}}$$



## APPENDIX 18

$$Z - \text{cal} = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\frac{(SD_1)^2}{n_1} + \frac{(SD_2)^2}{n_2}}}$$

$$Z - \text{cal} = \frac{2.33 - 2.43}{\sqrt{\frac{(0.92)^2}{139} + \frac{(1.37)^2}{1,190}}}$$

$$Z - \text{cal} = \frac{0.19}{\sqrt{\frac{0.8464}{139} + \frac{(1.37)^2}{1,190}}}$$

$$Z - \text{cal} = \frac{0.19}{\sqrt{447.3026}}$$

$$Z - \text{cal} = \frac{0.19}{21.14952955}$$

$$Z - \text{cal} = \underline{\underline{4.72}}$$

## APPENDIX 19

$$Z - \text{cal} = \frac{\bar{X}_1 - \bar{X}_2}{\sqrt{\frac{(SD_1)^2}{n_1} + \frac{(SD_2)^2}{n_2}}}$$

$$Z - \text{cal} = \frac{1.02 - 1.63}{\sqrt{\frac{(0.69)^2}{315} + \frac{(0.98)^2}{1,014}}}$$

$$Z - \text{cal} = \frac{0.61}{\sqrt{\frac{0.4761}{315} + \frac{0.9604}{1,014}}}$$

$$Z - \text{cal} = \frac{0.61}{\sqrt{1.511428571 + 9.471400394}}$$

$$Z - \text{cal} = \frac{0.61}{\sqrt{10.98282897}}$$

$$Z - \text{cal} = \frac{0.61}{3.314035149}$$

$$Z - \text{cal} = \underline{\underline{0.18}}$$

