CHAPTER ONE

INTRODUCTION

Background to the Study

At the College of Education level, business education is one of the programmes that provide its recipients with knowledge, skills, understanding and attitude needed to compete favourably in the business world as producers or consumers of goods and services. According to Iwu (2016), business education is an academic programme that is designed to develop the individual's cognitive, psychomotor and affective domains in following skills: teaching skills, secretarial/office skills, marketing skills, entrepreneurial skills, human relation/ communication skills, general business knowledge and accounting skills for self –reliance. One of the major courses under a well-planned business education programme is Financial Accounting.

Financial Accounting, according to Agboh (2017) is the classification and recording of monetary transactions and presentation of the financial results of the activities of an entity. It deals with the process of capturing, processing and communicating financial information. It is an information system that measures, processes and communicates financial information of an identifiable economic entity for use by management and other interested parties. Aghoh also opined that Financial Accounting is very imperative to the Nigerian economy as it provides the basis for preparing future entrepreneurs, accountants, managers, and financial controllers. The knowledge of Financial Accounting is necessary in every endeavour because it deals with records of one's income and

expenditure which are very vital in any serious business. This is why Talatu (2014) posited that everybody irrespective of the social class requires the knowledge of Financial Accounting to meet every day-to-day activities.

The objectives of Financial Accounting, according to Agboh (2017) include: to give students additional vocational skills that will enhance their opportunities for future occupational success, so that the students will become proficient in financial transactions and management and also to equip students with better understanding of business practices and procedures and provide vocational training in the practical knowledge of daily book-keeping activities. Thus, the students will understand the cycles and steps involved in Financial as well as their relations. It is expected that the business Accounting accounting graduates of Colleges of education would be able to successfully manage their own business outfit with the acquired Financial Accounting skills. in order to contribute their quota to Nigeria's economic growth and development. Unfortunately, one may be constrained to contend that the achievement of the above elaborated objectives is defeated as a result of the continuous poor achievement and low retention of students in Financial Accounting (Azih & Nwosu, 2011).

Achievement scores represents performance outcomes and indicates the extent to which a person has accomplished specific goals that were the focus of activities in instructional environments, specifically in school, college, and university (Okolocha & Okeke, 2018). Achievement scores in the context of

this study is the outcome of students' effort or achievement in examination. It could be high, average or low/poor. Oladejo, Olosunde, Ojebisi and Isola (2011) described poor achievement scores as any achievement that falls below a desired standard. Students' poor achievement scores in Financial Accounting has been observed from literature to be caused by many factors such as teachers' insensitivity to the nature of Financial Accounting when planning instructional activities in classroom (Miles, 2015), inadequate instructional materials and ineffective/poor teaching methods (Obidile, Amobi, Uzokwe & Akuezilo, 2017). Umar (2017) observed that teachers' predominant usage of conventional method of instruction in Financial Accounting may be a contributory cause of students' failure in the course. The resultant effect is low achievement scores and low retention ability in students' learning outcome.

According to Safo, Ezenwa and Wushishi (2013), retention is the ability to keep or retain the knowledge of what is learnt and able to recall it when it is required. It is the ability of a student to recall and apply knowledge acquired in school to similar situations outside the school. Some studies have reported the effects of different forms of pedagogy on retention of learning. For instance, Aina and Keith (2015) reported retention of learning was more with one method of teaching than the other. Also, Wynn, Mosholderand and Larsen (2014) found out that there was no significant difference in students' knowledge retention using different methods of teaching except after a long time. Retention helps in knowledge development. Knowledge development can be guaranteed when effective teaching method(s) is/are used in the teaching and learning to enable students internalize what has been taught. The teaching method employed by the teacher could be a strong determinant of students' level of retention and achievement scores.

Ezenwosu and Nworgu (2013) noted that most teachers in Colleges of education adopted traditional lecture method which is an oral presentation of ideas, concepts and principles to the students. Jimoh (2014) noted lecture method is a teaching method where a pre-packaged instructional content is delivered by the teacher to a large audience. Jimoh also noted that the lecture method provides an economical and efficient method for delivering substantial amounts of information to large number of students. In the word of Atieh (2013), explained that lecture method is an instructional strategy which affords teacher the opportunity to present a wide content to a large class of students with minimal students-teacher interaction. The characteristics of lecture method include the following: teacher-centred, teacher-active, learner-passive, content emphasis, large class size, wide content of instruction and minimal use of chalkboard and low level of interaction (Abdullahi 2013). Ezenwosu and Nworgu opined that the strategy is concerned with how much ground is covered by the teacher before examination. Going by the above features, lecture method is inappropriate for teaching some skill oriented subjects like Financial Accounting because students are deprived of active participation in the learning process and they have very little or no interaction among themselves and the teacher.

To improve on students' achievement scores and retention in Financial Accounting, there is need for student centred teaching methods that enable the learners to reason, develop creative skills, discover facts and develop self-confidence in solving problems . Eze, Ezenwafor and Obidile (2016) opined that student-centred methods/strategies could improve students' academic performance in different subjects better than teacher-centred methods/strategies. The authors stressed further that student-centred teaching methods/strategies are characterized by active involvement of students in the teaching and learning process. Examples of student-centred teaching methods/strategies include Just-in-time teaching, Peer Instructional strategy, problem-based method among others. This study will focus on Just-in-time teaching and Peer instructional strategies because they are not only student centred, but also innovative, constructive and cooperative teaching and learning strategies.

Just in Time Teaching Strategy (JiTT) is a teaching and learning strategy based on the interaction between web-based study assignments and an active learner classroom (Novak, 2014). It embodies a combination of a flipped classroom and technological and formative assessments to create an interactive learning experience for students. Just-in-time teaching actively involves students in the learning process through a two-step series of learning activities. In the first step, students complete a focused set of activities outside of class (usually via interactive Web documents) and submit their work to the instructor. In the second step, the instructor (often just hours before the next lecture) collects the students' responses and identifies areas of understanding and misunderstanding to adjust the next lesson so that students can receive specific "just-in-time" feedback on those particular areas. Just-in-time Teaching (JITT), which is an exciting new strategy engages students by using feedback from preclass web assignments. In this process, the students are more in control of the learning process and become more active and interested learners (Brame, 2019). This is unlike the Peer Instructional Learning Strategy

Peer Instructional (PI) Strategy on the other hand is an interactive teaching strategy that promotes classroom interaction to engage students and address difficult aspects of the material (Mazur & Watkins 2010). PI provide a structured environment for students to voice their idea and resolve misunderstanding by talking with their peers. PI is more effective at developing students' conceptual understanding than traditional lecture-based instruction. PI therefore increases conceptual learning and traditional problem-solving skills. Gok (2012) explained that PI encourages students to take responsibility for their learning and emphasize understanding. According to Abubakar and Arshad (2015), students could learn more when they take responsibility for their learning. This they could do irrespective of their gender.

Gender refers to all the characteristics of male and female which describes behaviours or attributes expected of individuals on the basis of being either a male or female in a given society (Eze, 2014). Gender differences and achievement scores of student in schools have been one of the topical issues in the academic debate currently. Gender as adopted in this study refers to categorization of human beings into males and females. There have been conflicting findings on how gender influences the achievement scores of students. It seems that gender varies according to subjects. For instance, Olorode and Jimoh (2016) found that male and female students achieve and retain concepts differently as a result of cultural and traditional reasons. Adebayo and Judith (2014)found that male students achieved and retained higher in Financial Accounting than female students. However, Olarinye (2015) reported no significant difference in the academic performance of students in accounting as a result of gender.

Relative effectiveness is the extent to which an intervention does more good than harm compared with one or more alternative interventions under the usual circumstance (Jimoh, 2014). Relative effectiveness of JiTT and PI strategies on students' achievement scores and retention in Financial Accounting therefore can be seen as the extent to which JiTT strategy improved students' achievement scores and retention in Financial Accounting more than PI strategy and vice versa. JiTT and PI strategies are both cooperative teaching and learning strategies that can improve students' achievement and retention in Financial Accounting. It is with this background that this study on relative effectiveness of JiTT and PI on students' achievement and retention in Financial Accounting in colleges of education in Anambra State was conceived.

Statement of the Problem

Accounting courses are introduced at Colleges of Education to give students additional vocational skills that will enhance their opportunities for future occupational success, to enable students become proficient in financial transactions and management and to equip students with better understanding of business practices and procedures. Also to provide vocational training to students in the practical knowledge of daily book- keeping activities and to help students understand the cycles and steps involved in accounting so that the relations of each step to all other steps are properly understood. Hence, it is expected that students of accounting on graduation from tertiary institutions should be able to secure paid job or be self-employed. Equally, it is expected that these graduates would be able to successfully manage their own business outfit with the acquired accounting skills, thus contribute their quota to Nigerian economic growth and development. Unfortunately, these objectives are still far from being achieved most importantly when one looks at the performances of NCE accounting graduates in their examinations and also most of these graduates do not perform academically up to their abilities.

Consequently, many of them are unemployed and a few that managed to be employed are disengaged too early by their employers because of lack of or poor quality of accounting skills. The employers see majority of the graduates as incompetent in the work to which they are employed. Even those that are self-employed have been observed to close down their business as a result of poor patronage occasioned by poor performance. The poor performances and incompetence of the graduates may be due to the level of instructions and level of academic performance they obtained in the College of Education. For example, records available to the researcher showed that there have been decline in academic achievement and retention level of College of Education recently (Aghoh, 2017 & Umar, 2017). This claim was also supported by pilot study conducted by the researcher see Appendix 1 page 116. It is common place in the College of Education that the students are taught Financial Accounting courses through the lecture method, which is teachercentered.

It is worrisome that from literature and observation by the researcher, that the teaching of Financial Accounting in many College of Education especially in Anambra State, Nigeria is based more on lecture method. Parents, employers of labour lecturers and researchers are not very certain if this would be wholly responsible for students' poor academic achievement and retention in Financial Accounting. The problem of this study therefore is that teacher-centered method of teaching Financial Accounting does not yield better performances and high retention for student. Hence, would the adoption of innovative teaching strategies that are student-centered yield relative improvement on students' academic achievement and retention in Financial Accounting? It is in view of this concern that this study was carried out to determine the relative effectiveness of Just-in-Time teaching (JiTT) and Peer Instructional (PI) strategies on students' achievement and retention in Financial Accounting in College of Education in Anambra State.

Purpose of the Study

The purpose of this study was to determine the relative effectiveness of JiTT and PI strategies on students' achievement and retention in Financial Accounting in College of Education in Anambra State. Specifically, the study determined:

- 1. Relative effectiveness of JiTT and PI strategies on students' mean achievement scores in Financial Accounting.
- Relative effectiveness of JiTT and PI strategies on students' mean retention scores in Financial Accounting.
- 3. Relative effectiveness of JiTT and PI strategies on male students' mean achievement scores in Financial Accounting.
- 4. Relative effectiveness of JiTT and PI strategies on female students' mean achievement scores in Financial Accounting.
- 5. Relative effectiveness of JiTT and PI strategies on male students' mean retention scores in Financial Accounting.
- 6. Relative effectiveness of JiTT and PI strategies on female students' mean retention scores in Financial Accounting.
- 7. Interaction effect of teaching strategy and gender on students' mean achievement scores in Financial Accounting.
- 8. Interaction effect of teaching strategy and gender on students' mean retention scores in Financial Accounting.

Significance of the Study

Findings of the study, when published would be of immense benefit to accounting students, accounting lecturers, management of colleges of education curriculum planners and researchers.

The accounting students would benefit from the findings of the study as they would be exposed to instructional approaches that would enhance motivation for greater academic achievement and retention in Financial Accounting and related subjects. Students would be repositioned with confidence for further studies in business disciplines to meet the challenging needs of modern society.

The findings of this study would be of great benefit to accounting lecturers in College of Education (COE) in adopting the most effective method for teaching Financial Accounting. The method when adopted would help to improve their students' achievement and retention.

The findings of this study would also be of immense benefit to the Management of COE through the information provided on administrative and supervisory strategies that could be adopted for improving teaching of Financial Accounting.

Curriculum planners would also benefit from the findings of this study because, it will provide relevant information for curriculum review and update to meet societal needs for improved teaching and learning of Financial Accounting. Finally, the findings would help to provide useful research information to fellow researchers with keen research interest into identifying effective strategy for improving teaching of any College of Education subject in Nigerian school system.

Scope of the Study

The study focused on the relative effectiveness of JiTT and PI strategies on the students' achievement and retention in Financial Accounting in COE. The content was delimited to manufacturing accounts, trading, profit and loss account (income statement) and balance sheet (statement of financial positions) in the second semester course outline of Financial Accounting II (BED 221) of business education (accounting) programme in Colleges of Education. Variables were delimited to teaching strategies (JiTT and PI strategies), student's academic achievement, retention and gender. Only COE in Anambra State, namely: the Federal College of Education (Technical), Umunze (FCET) and the Nwafor Orizu College of Education, Nsugbe (NOCE) were used for the study and only NCE year two (II) students participated because that is the level at which the topics covered in the study are offered.

Research Questions

The following research questions guided the study:

- 1. What is the relative effectiveness of JiTT and PI strategies on students' mean achievement scores in Financial Accounting?
- 2. What is the relative effectiveness of JiTT and PI strategies on students' mean retention scores in Financial Accounting?

- 3. What is the relative effectiveness of JiTT and PI strategies on male students' mean achievement scores in Financial Accounting?
- 4. What is the relative effectiveness of JiTT and PI strategies on female students' mean achievement scores in Financial Accounting?
- 5. What is the relative effectiveness of JiTT and PI strategies on male students' mean retention scores in Financial Accounting?
- 6. What is the relative effectiveness of JiTT and PI strategies on female students' mean retention scores in Financial Accounting?

Hypotheses

The following hypotheses were tested at 0.05 level of significance:

- There is no significant difference in the relative effectiveness of JiTT and PI strategies on students' mean achievement scores in Financial Accounting.
- There is no significant difference in the relative effectiveness of JiTT and PI strategies on students' mean retention scores in Financial Accounting.
- Significant difference does not exist in the relative effectiveness of JiTT and PI strategies on male students' mean achievement scores in Financial Accounting.
- Significant difference does not exist in the relative effectiveness of JiTT and PI strategies on female students' mean achievement scores in Financial Accounting.
- 5. The difference in the relative effectiveness of JiTT and PI strategies on male students' mean retention scores in Financial Accounting is zero.

- 6. The difference in the relative effectiveness of JiTT and PI strategies on female students' mean retention scores in Financial Accounting is zero.
- 7. There are no interaction effect of teaching strategy and gender on students' mean achievement scores in Financial Accounting.
- There is no interaction effect of teaching strategy and gender on students mean retention scores in Financial Accounting.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

The review of related literature for this work was organized under the following subheadings:

Conceptual Framework

Just-in-Time Teaching Strategy

Peer Instructional Strategy

Financial Accounting

Academic Achievement

Academic Retention

Theoretical Framework

Vygotsky's Social Constructivist Theory.

Theoretical Studies

Objectives of Accounting in College of Education Overview of Just-in- Time Teaching Strategy Overview of Peer Instructional Teaching Strategy Gender Issue in Financial Accounting

Empirical Studies

Just-in-time Teaching Strategy and Students' Academic Achievement Just-in-time Teaching Strategy and Students' Academic Retention Peer Instructional Strategy and Students' Academic Achievement Peer Instructional Strategy and Students' Academic Retention Gender, Students' Academic Achievement and Retention

Summary of Review of Related Literature

Conceptual Framework Just-in-Time Teaching Strategy

Just-in-Time Teaching (JiTT) is a pedagogical technique that emerged in the 1990. It was later developed by Novak, Patterson, Gavrin, and Christian (1999), and was first implemented in a physics course where the instructor wanted to find a different way to meet students' learning needs (Novak, 2017). During that time there was a concern among professors related to students' mastery of key concepts, thus professors began to evaluate the quality of the pedagogical techniques used in the classroom and started to explore new strategies to be implemented in the lessons.

According to Watkins and Mazur (2010), JiTT is a teaching and learning strategy based on the interaction between web-based study assignments and an active learner classroom. Students respond electronically to carefully constructed web-based assignments which are due shortly before class, and the instructor reads the student submissions "just-in-time" to adjust the classroom lesson to suit the students' needs. Thus, the heart of JiTT is the "feedback loop" formed by the students' outside-of-class preparation that fundamentally affects what happens during the subsequent in-class time together.

The JiTT system is built around web-based preparatory assignments called "warm-ups", which are exercises given a few hours before class. The students complete these assignments individually, at their own pace, and submit them electronically. Upon reading through the students' responses before class, the teacher then adjusts and organizes the classroom lessons in response to the student submissions "Just-in-Time." This establishes a feedback loop between the classroom and the web. Each lesson is preceded and informed by an assignment on the web. The feedback cycle occurs several times each week, encouraging students to stay current and to do so by studying in several sessions that are short enough to avoid fatigue.

In the context of this work, JiTT strategy is a combination of the traditional learning strategies with network learning, teachers guiding, inspiring, monitoring the teaching process, the students actively extra-curricular self-learning, using of students' feedback to guide the classroom teaching, and then stimulating the students' learning motivation.

Peer Instructional (PI) Strategy

Peer Instructional (PI) strategy is a form of both cooperative and collaborative learning techniques. It is an instructional strategy for engaging students during class through a structured questioning process that involves every student (Crouch et al, 2017). Peer Instructional strategy (PI) is also an interactive strategy of teaching delivery which encourages in-class interactivity to engage students and address topics which students find difficult (Mazur, 2014; Watkins & Mazur, 2010; Crouch, Watkins, Fagan & Mazur, 2017; Crouch & Mazur, 2012).

Peer instructional strategy (PI) is mainly based on the constructivist approach, which is an active process based on student-centred learning in which learners construct their own meaning of knowledge instead of knowledge transfer from instructors (Gok & Gok 2016). It was originally used to teach fundamental physics concepts using multiple-choice test items in a large-enrolment introductory undergraduate physics course (Mazur, 2014). PI consists of three stages, which are the set up stage, the response stage and the solution/discussion stage of the concept tests/problems.

Operationally, peer instructional (PI) strategy is a student-centred approach in which lectures are interspersed with short conceptual questions designed to challenge students to think about the material as it is being presented.

Financial Accounting

Financial Accounting is an academic course that equips students with relevant skills and knowledge needed for occupation in accounting field. Olorode and Jimoh (2016) defined Financial Accounting as a service activity which provides social communication through which changes and improvements in business activities are communicated to various users in order to allow them make informed decision. Akinbuli in Umar (2017) stressed that Financial Accounting is a branch of accounting that enables business managers to report their stewardship, keep records of all financial transactions, provides records for tax assessment, planning and decision making. Thus, Financial Accounting helps business managers perform their jobs in effective and efficient manner. Financial Accounting is the process of identifying, measuring, and communicating economic and financial information to permit informed judgments and decision by the users of the information (Okwoli, 2010). Ezeagba (2014) also explained that Financial Accounting involve a process of recording, classifying, selecting, measuring, interpreting, summarizing and reporting financial data of an organization to users for objective assessment and decision making. In summary, financial accounting is defined as the field of accounting concerned with summary, analysis and reporting of financial transactions related to a business.

Academic Achievement

Academic achievement generally refers to the degree or level of success or proficiency attained in some academic work. It encourages the students to work hard and learn more. Academic Achievement is the status of a student's learning and refers to knowledge attained and skills developed during their academic career which are assessed by school authorities with the help of teacher- made or standardized tests.

Achievement is an important educational variable that expresses the success or failure of teaching and learning process. It is a process that involves the adolescents developing a stable sense of themselves, graduating from being dependent on parents to depending on themselves (Umar, 2017). Aghor (2017) referred to academic achievement as the outcome of a teaching and learning process. It is a measure of the extent to which a student, teacher or institution

has achieved academically depends on the educational goals. Similarly Okoli and Egbunonu (2012) described academic achievement as the scholastic standing of a student at a given moment which states the individual's intellectual abilities; which can be measured by grades obtained from examinations or continuous assessments (tests or quiz).

Academic achievement is one of the most important goals of education. The success or failure of a student is measured in terms of academic achievement. It means development of skills in school subjects. Academic achievement is the criterion for selection, promotion or recognition in various walks of life. Academic achievement is based on the assumption that there are differences within an individual from time as behavioural oscillations. The academic achievement of the same individual differs from time to time, from one class to another and from, one educational level to another. Academic achievement is one part of the wider term of educational growth. It refers to what a student has achieved in different subjects of studies, during the course of academic year. Academic achievement is affected largely due to the intra individual differences, (differences within the individual from time to time) or with individual differences, i.e. between one individual and another, between one group and another. Besides areas of functioning, individuals of the same group, same grade and same potential ability may differ in their academic proficiency due to many factors. At each stage in the schools some measure of achievement is used as determiner of the student's status and as a basis for

decisions about the further opportunities for learning to be provided in subsequent stages.

Operationally, academic achievement is the sum total of information gained after completing a course of instruction (partially or fully) in a particular grade that he has obtained on an achievement test.

Academic Retention

Abbas and Habu (2014) defined academic retention as the maintenance of knowledge acquired through instruction for an extended period of time. The length of time the content is retained signifies the level of thinking at which the students acquired the information. Jessica (2010) opined that academic retention is the continued capacity to behave in particular way that has been learnt.

Academic retention is also the process of maintaining the availability of a replica of the acquired new meaning or some part of them(Elliot, Katochwil &Travers, 2000). They further suggested that the amount of the original meaning that will be retained at any point in time is a variable of the quantity of hand. Gambari and Yusuf (2014) defined academic retention as the ability to memorize difficult subject by rote learning and is considered as a way of exercising the mind and developing the muscle of the mind and brain. Jessica noted that man is endowed with limited capacity for memorization. Based on this, the task before any teacher is to help students improve on their abilities to assimilate information which is retention. The ability to remember takes place more effectively when experiences are passed across to the learner through an

appropriate instructional model (Chibabi, Umoru, Onah & Itodo, 2018). Therefore, academic retention is a crucial construct that every teacher should strive to maximize among his students.

In this study, academic retention is the ability of student to recall an acquired new meaning or knowledge either partly or in full when needed in future. In this light, the students of Financial Accounting need to possess the ability to recall the learned knowledge of Financial Accounting for use when needed through the process of retention.

Theoretical Framework

Vygotsky's Social Constructivist Theory

This theory was propounded by the Russian Psychologist Lev Vygotsky (1869 -1934). Vygotsky's work was largely unknown to the west until it was published in 1962. Vygotsky's theory was one of the foundations of constructivism. It asserts three major themes regarding social interaction, the more knowledgeable other and the zone of proximal development (Vygotsky, 1978).

1. Social Interaction: Vygotsky holds that social interaction plays a fundamental role in the process of cognitive development. Vygotsky opined that every function in the child's cultural development appears twice, first, on the social level, and later on the individual level. First, between people (inter psychological) and then inside the child (intra psychological).

2. The More Knowledgeable Other(MKO): The MKO refers to anyone who responds to a particular task, process, or concept. The MKO is normally thought of as being a teacher, an expert, coach, or older adult, but the MKO could also be peers, a younger person or even computers

3. The Zone of Proximal Development (ZPD): The ZPD is defined as the distance between a student's ability to perform a task under adult guidance and/or with peer collaboration and the student's ability in solving the problem independently. This is an important concept for which Vygotsky is well known, that relates the difference between what a learner can achieve independently and what a learner can achieve with guidance, assistance and encouragement from a skilled partner.

Vygotsky saw the ZPD as the area where the most sensitive instruction or guidance should be given thereby allowing the learner develop skills they will then use on their own while developing hyper mental functions. Vygotsky's theory promotes learning contexts in which students play an active role in knowledge construction from several experiences and in groups. The theory emphasizes students' active involvement, social interaction and negotiation among students and teachers in the teaching/learning process.

The relevance of this theory to the study is evident in the fact that Vygotsky's cognitive and social constructivism has changed the role of the teacher from that of a drill master to a facilitator. Therefore, a teacher no longer projects himself as the repository, fountain or source of knowledge or as the avenue by which information is dispensed, instead, the role is to prompt, facilitate, guide and challenge the learning process for maximum conceptual change and retention in student.

Furthermore, in constructivist classrooms, unlike the conventional lecturer, the teacher is a facilitator and a guide, who plans, organizes, guides, and provides directions to the learner, who is accountable for his own learning. The teacher supports the learner by means of suggestions that arise out of ordinary activities, by challenges that inspire creativity, and with projects that allow for independent thinking and new ways of learning information. Students work in groups to approach problems and challenges in real world situations. This in turn leads to the creation of practical solutions and a diverse variety of student products.

Constructivist theories have found more popularity with the advent of personal computers (PCs) in classrooms and homes. PCs provide individual students with tools to experiment and build their own learning at their own pace. With the use of the web, the learner can now conduct research, interact with diverse populations, share ideas, and work on group projects.

Implications of Vygotsky's Social Constructivist Theory to the Study.

The following are the implications of the theory to the study:

 The JiTT strategy was designed based on constructivist theory. Thus, all Financial Accounting students enter the classroom with some background knowledge and all students use this knowledge to construct more knowledge. Under this perspective, the JiTT strategy is considered imperative to use Financial Accounting students' previous knowledge in order to enhance the learning of Financial Accounting course material.

- JiTT strategy as the theory implies, encourages students to actively interact with assigned readings, Financial Accounting data and web based resources. Thus, using them to solve unfamiliar problems.
- 3. JiTT strategy as the theory implies that scaffolds are provided to help students with learning styles. Most JiTT exercises emphasize concrete application of concept and encourage students to discuss the concepts in their own words or by relating those concepts to experiences from their own lives. These linkages between newly introduced concepts and previous knowledge increase the potential for deeper and long term learning.
- 4. PI is grounded in the constructivism theory which emphasizes the importance of prior experience as a springboard on which the construction of new knowledge stands. Both social and cognitive constructivisms are relevant in PI. Students learn through social interaction as well as individual conceptions in the learning environment.
- 5. Constructivism allows students to be in control of their learning and with PI students are at the helm and in control of their thinking.
- 6. The use of peer instructional strategy promotes met cognition by allowing students to evaluate their scientific thinking.
- 7. PI allows for instructors to be aware of students' conceptual understanding through the use of interactive engagement in the classroom.

- 8. PI gives students individual time to think about their beliefs and write them down. They are then allowed to share that concept with their peers and have conversations about their beliefs. This allows students to construct their own meanings and scaffold what they are learning with their peers.
- 9. PI gives students a better understanding of fundamental concepts by discouraging bad study habits and rote learning.
- 10. In peer instructional strategy, as this implies, a teacher acts as a facilitator who encourages students to discover principles for themselves and to construct knowledge by working to solve realistic problems.

Theoretical Studies

Objectives of Accounting in College of Education

Accounting Education encompasses all designed activities of learning aimed at inculcating qualitative knowledge and skill on the ethics, principles and practice of accounting. Accounting is very important term to our modern society. It is the career for men and women who at the start have their eyes set on top positions in industry, management, government, educational career and general business. Accounting is a basic need of every business education student in the business world. According to Eze (2014)accounting is one of the disciplines of study that all people, regardless of job position, should have some knowledge. Accounting education is important to every field of specialization. Secretaries must use accounting skills to manage the company cheque book and orders, auditors have to study financial statements to evaluate the accuracy and integrity of the business, and

executives need to judge the success of their business using Accounting statements from the past and present. However, despite the importance accounting to individual and nation at large, it is a pity to observe that significant numbers of students cannot cope up with the challenges of skills and technicalities in Accounting. Ekwere (2015) asserted that accounting has its primary objectives, the measurement of economic effect and as communication of the economic results to the external decision makers. Other general objectives of Financial Accounting as given by Ekwere are to provide (a) reliable financial information of an organization (b) information that assists in estimating the earning potential of an enterprise (c) reliable information in assessing management ability (d) the external and internal users with information for predicting, comparing and evaluating an organizational earning power and (e) to disclose information that is relevant to financial statement users.

The objectives of accounting at College of Education according to Umar (2017) include the following: to give students additional vocational skills that will enhance their opportunities for future occupational success, to enable students become proficient in financial transactions and management, to equip students with better understanding of business practices and procedures, to provide vocational training to students in the practical knowledge of daily book-keeping activities, and to help students understand the cycles and steps involved in Financial Accounting so that the relations of each step to all other steps are properly understood.

Similarly, Agara (2015) stated that accounting is important to employees, general public, government, investment analysts, lenders, managers/directors, shareholders and suppliers. He further explained that Financial Accounting helps employees to assess the potential for providing continued employment and assess levels of remuneration. Adebiyi (2011) added that accounting enables the general public to assess general employment opportunities, social, political and environmental issues, and to consider the potential for investment.

Accounting helps government in determining its value added tax (VAT) and corporate taxation, government statistics, grants and financial assistance, monopolies and mergers (Agara, 2015). According to Agara, accounting enables investment analysts to determine investment potentials for individuals and institutions with regard to past and future performance, strength of management as well as risk versus reward. He also added that Financial Accounting enables lenders to assess the capacity and the ability of a company to service debt and repay capital.

Longe and Kazeem (2014), in their own views, stated that accounting is important in that it (i) provides information for decision making (ii) provides permanent records for all transactions (iii) helps to determine the profitability of a business concern (iv) provides records for tax purposes (v) helps in preventing fraudulent activities (vi) provides information on assets and liabilities, and income and expenditure. Generally Accepted Accounting Principles (GAAP) Financial data are processed into accounting information through the use of accounting principles and conventions. Adebiyi (2011) defined a principle as a broad general law or rule adopted or professed as a guide to action, a settled ground or basis of conduct or practice.

Broad general rules developed through years of practice are, however, available to the accountant to help him exercise the much needed judgment in the application of accounting concepts, methods and bases. To this end, Ama (2012) stated that accounting principles are broad rules adopted by the accounting profession as guides in measuring, recording, and reporting the financial affairs and activities of an organization or entity. These principles are referred to as Generally Accepted Accounting Principles (GAAP).

Generally Accepted Accounting Principles as simply stated in Eze (2014) are the conventions, rules, procedures and broad guidelines adopted in the preparation and presentation of financial statements in a given jurisdiction, for example, Nigeria. The principles include broad ideas of measurement and classifications, as well as detailed rules and procedures used by accountants in preparing and presenting accounting reports. The rules followed by accountants in the preparation of financial statements are contained in the accounting standards issued by the standard-setting body in a given jurisdiction.

Some of these Generally Accepted Accounting Principles include principles of: (a) substance over form (b) objectivity (c) fairness (d) materiality (e) prudence (f) full disclosure (g) double entry.

A. Principle of Substance over Form

Different businesses or industries require different accounting formats and peculiar treatments. The same applies to different types of organizations. Hence, there are the Companies and Allied Matters Act of 1990 as amended in 2004 and the Banks and Other Financial Institutions Act (BOFIA) of 1991 that regulate the businesses and accounting for companies and financial institutions respectively. However, in keeping the accounts of organizations, the accountant appreciates the peculiar nature of the respective business instead of just what the law dictates. Thus, Ama (2017) reported that accounts of organizations are presented in accordance with the substance and financial reality and not necessarily or simply with the legal forms.

B. Principle of Objectivity

This is, in other words, called the principle of objective evidence. It is the preference of objective evidence to subjective judgment in determining the amount used in recording events in the account. According to Adebiyi (2011), the principle connotes independence of judgment on the part of the accountant preparing the financial statements. The objective judgment of the accountant is normally vouched by the source documents – receipts, invoices, et cetera. Adebiyi added that the result is that accounts prepared by independent practitioners from those documents will produce essentially the same result. He also stated that the principle of objectivity underlies the usefulness of accounting information. It makes the product of the accounting information system to be devoid of the whims, fancies and idiosyncrasies of either the organization in general or the accounting staff in particular.

C. Principle of Fairness

This principle helps to emphasize the principle of objectivity. Stressing this point, Agara (2015) maintained that the principle of fairness in particular states that all parties interested in the accounting information must be borne in mind while preparing the accounts. Having taken the interest of all users at heart, Agara explained that the accounts are said to have presented a fair view of all transactions of the organization, as well as a fair view of the position of the assets and liabilities at a given date. Once the principle of fairness has been followed, no party is favoured at the detriment of others.

D. Principle of Materiality

Information is said to be material if it can affect the decision to be taken. Evidence is immaterial to the extent that it will not sway judgment to any direction. Therefore, the principle of materiality in accounting presupposes that only material items are accorded their strict accounting. For instance, taxes on accrued wages may not be strictly matched against revenues of the same period because its effect is seen not to be material enough. This negates the matching concept but nevertheless does not affect accurate reporting since the difference in taxes on accrued wages of different periods may be negligible. In short, a strict adherence to any accounting principle is not required if the lack of adherence does not materially affect the financial statements (Igboke, 2012). In other words, failure to adhere to this principle is only considered wrong when the error or mis-statement resulting there-from is large enough to influence a financial statement reader's understanding of a given situation.

E. Principle of Prudence

This principle is also called the principle of conservatism. According to Igboke (2012), conservatism principle is the accounting principle that guides accountants to select the less optimistic estimate when two estimates of amounts to be received or paid are about equally likely. Igboke stated further that accountants are by this principle supposed to be pessimistic in anticipating profits but very eager in recognizing all losses no matter how far-fetched they may be. Thus, only profits that have actually been earned are recognized and recorded. But losses that are only contingent are equally immediately recognized and recorded.

Igboke gave instances of the application of the principle of prudence to include (i) recognition of the lower-of-cost or market value in stock pricing (ii) provision of contingent disclosure of all or every information, it demands as a matter of compulsion, the disclosure of all material information.

Any material information must be disclosed both fully and completely. The disclosure needs not be detailed. It only needs to be such that will enable the reader of the records to appreciate completely the current position (financial) of the entity concerned. Following the disclosure principle, NASB (SAS 2) enumerates both the general and specific disclosures. These have been found to be complementary to disclosure requirements of the Companies and Allied Matters Act of 2004 and in accordance with the requirements of the International Accounting Standards No. 5 - Information to be Disclosed in Financial Statement.

G. Principle of Double Entry

This principle presupposes the double entry accounting system. According to Asaolu (2015), the principle dictates that each transaction affects and is recorded in two or more accounts with equal debit and credit entries. The principle of double entry, therefore, ensures that each transaction affects more than one item in the accounting equation such that in spite of any transaction and the number of such transactions, the equation must always balance.

Asaolu also added that the principle of double entry engenders the modern accounting system which is based on the accounting equation of Assets = Liabilities + Owners Equity. Essien (2014) agreed that this principle subsumes all classes of accounts – personal, non-personal, real and nominal – into the equation and presents each in a T-form or T-account. One side of the T-account is called the debit side while the other side is the credit side. Essien added that the T-account goes further to prescribe that the account which receives value be debited while the account that gives out value be credited.

Purpose of Generally Accepted Accounting Principle (GAAP)

The Nigerian Accounting Standards Board according to Eze (2014) provides that adherence to generally accepted accounting principles serves five important purposes as follows:

- 1. It provides reasonable degree of comparison between financial reports presented by entities since they adopt a standard framework or guidelines.
- 2. It increases the confidence of investors, markets, and indeed the general public, which the financial statements issued by a reporting entity faithfully represent its transactions.
- 3. Preparers of financial statements have a set of guidelines which can be readily referred to in accounting and reporting their financial transactions.
- 4. External auditors need GAAP to guide them in reporting on the truth and fairness or otherwise of the financial transactions of different entities.
- 5. External auditors need GAAP to guide them in reporting on the truth and fairness or otherwise of the financial transactions of different entities.

Overview of Just-in-Time Teaching Strategy

Some new learner-centred strategies emerged to replace traditional lectures. One of those strategies is JiTT. This pedagogical technique was designed based on the constructivism theory. Constructivism states that all learners have some background knowledge and they use it to generate new information. The initiators of JiTT considered the students' background knowledge extremely important in enriching the learning course material (Guertin, 2014). The authors of this strategy took into account that a student's learning process is facilitated when there is active participation. They wanted students to be engaged, prepared for class discussions, motivated during and outside class time, and be curious about course content. Likewise, the authors of this strategy used web-based technology in order to foster communication between students and teachers when they are not in class hours. This type of communication could provide teachers valuable information related to students' performances and concerns about classroom topics. Their intention was on structured teaching and learning strategy that makes use of students' responses to web-based questions covering upcoming course material to: (1) promote time on task; (2) encourage better preparation for course meetings, (3) provide prompt feedback on students' conceptual understanding, and (4) inform "justin-time" modifications of in--class (or online) activities and discussion.

Just-in-Time Teaching is a pedagogical technique that was first implemented in the late 1990s in an introductory physics course to address nontraditional students' needs (Novak, 2011). Around that same time, higher education was experiencing a paradigm shift in which instructors began to critically evaluate the effectiveness of the traditional auditorium-style class lecture as the default pedagogical strategy (Johnson, Johnson, & Smith, 2011; Laurillard, 2010). Many professors were growing dissatisfied with students' level of mastery of key concepts upon exiting introductory courses; consequently, instructors began to examine the quality of pedagogical techniques implemented in the classroom. Throughout the academy, a variety of innovative, learner-centred strategies began to replace the traditional lecture (Herman, 2012), and JiTT was among the practices introduced to captivate university students with diverse learning styles and a variety of academic and social backgrounds.

Just-in-Time Teaching (JiTT) is a teaching and learning approach that combines the best features of traditional in-class instruction with the communication and resource potential available via the web. A key characteristic of JiTT is the creation of a feedback loop between the classroom and the Web using Internet "Warm Up" assignments that are due prior to class time. By examining student responses to Warm Up exercises before class, faculty members can determine the level of understanding, prior knowledge, and misconceptions that students bring to class. Classroom time can then be spent addressing these misconceptions while discussing course content. In class cooperative learning exercises reinforce course content in an informal group setting. Assessment results have been positive, including decreased attrition rates, increases in student attitudes, interactivity, study habits, and cognitive gains in classrooms using JiTT.

Just-in-time teaching can also be seen as a teaching and learning strategy that consists of two components: classroom activities that promote active learning and World Wide Web resources that are used to enhance the classroom component. More specifically, JiTT involves a fusion of high-tech and low tech elements. The high-tech element involves use of the world web to deliver curricular materials and to manage communication among school and students. The low-tech element requires a school to maintain a classroom environment that emphasizes personal instructor-student and student-student interaction. This
fusion of high-tech and low-tech elements produce a learning environment that students find engaging and interactive. Most importantly, instructors use JiTT to combine high-speed communications on the web with their ability to adjust content, thereby making classroom activities more efficient and more closely tuned to meet students' needs. The essential element in JiTT is the establishment of a feedback loop between the web-based and classroom activities. Essentially, it is the feedback between the web and classroom activities that increases interactivity and allows rapid response to students' academic problems.

The JiTT originators designed their strategy based on constructivist theory: all students enter the classroom with some background knowledge and all students use this knowledge to construct more knowledge. Under this perspective, the JiTT team considered it imperative to use students' previous knowledge in order to enhance the learning of course material (Guertin, Zappe, & Kim, 2013). In addition, since educational research has convincingly shown that students learn more and are more motivated in a course in which they are active participants as opposed to passive learners (Darcy & Henderson, 2010), the JiTT originators wanted to create a strategy that engaged students, prepared them for class discussion, motivated them in and out of class, and stimulated curiosity about course content.

The JiTT strategy is straightforward. Between classes, students complete carefully constructed exercises and submit them using Learning Management

System (LMS) (e.g. edomdo) by a pre assigned time a few hours before class. Edmodo is a free social learning platform that allows students to access the course content uploaded by their teachers. The platform allows teachers and students to communicate with each other via messages, thus providing learners with the chance to communicate and collaborate in a virtual classroom environment (Balasubramanian, Jaykumar & Fukey, 2014; Ekmekçi, 2016; Mokhtar, 2016).

These JiTT exercises, or "JITTs," are short assignments typically focusing on the material that will be covered in the next class –that is, students are required to read ahead on their own to answer the questions. Once submitted, instructors review students' JiTT responses a few hours prior to class and use the responses to organize and modify the upcoming classroom session – hence the "just-in-time" label. Excerpts from students' submissions are presented during the class as the basis for discussion, replacing the traditional lecture, and are used to develop follow up exercises that groups of students work on in class.

While JiTT was developed with face--to--face courses in mind, JiTT techniques are easily adapted for online courses. The principle is the same: students respond to intentionally--designed questions by a specific deadline and the responses are used to dynamically inform and adjust upcoming course activities –synchronous or asynchronous –focusing on specific learning issues uncovered by the JiTT responses.

The main idea of JiTT pedagogy is to develop a direct link between pre- and in-class activities by making use of preparatory web-based assignments commonly referred to as "JiTT exercises" (Novak and Patterson, 2010). These exercises usually require students to read, view, or to carry out an activity and to answer related questions. The web-based resources therefore function as a pedagogical resource, acting both as a communication tool and as an organiser. A lot of learning takes place outside of the classroom, so those using the JiTT approach regard their pedagogical strategy as a feedback loop between pre- and in-class experiences (Figure 1).

Figure 1: The JiTT Feedback Loop (adapted from (Novak and Patterson, 2010)

JiTT exercises work best when they include short, stimulating questions which, upon full discussion, usually give rise to complex answers (Novak and Patterson, 2010). The expectation is that students develop answers to their JiTT questions on their own, so far as possible, taking into account that the material will not yet have been formally taught on the course. JiTT assignments have a deadline a few hours before class, allowing the teacher sufficient time to adapt the forthcoming class taking the student responses into account. The students' responses to the JiTT assignments become an integral part of the class by acting as a focal point for further discussion. Often exemplar student responses are shown at the start of class thus prompting small group or full class discussions. Misconceptions or areas of difficulty are also identified in the students' responses hence are used to determine the appropriate choice of classroom activities.

JiTT classes are different from traditional lectures for two important reasons. Firstly, students enter class having very recently completed the webbased assignment and so have undergone the preparation needed to take part in classroom activities. The second point relates to the sense of ownership which the students have towards the classes as the activities are tailored to their specific understanding of the topics. The exact format of classes varies depending on a number of points such as the number of students, the learning space and the personalities of both the students and their teacher. Examples of use of time in class include whole-class discussions, demonstrations, or groupbased learning activities to facilitate cooperative learning. It is important to note that JiTT can also be used to motivate student learning (Camp, Middendorf & Sullivan, 2010). In addition, JiTT can be used at different levels and in a wide range of disciplines for example Biological Sciences (Marrs, 2010), Geosciences (Guertin, 2010), Physical Sciences (Gavrin, 2010) and Humanities (Cookman, 2010).

Furthermore, since Web-based technology had become readily available, the creators capitalized on these technological tools in order to increase communication between students and instructors outside of class; this feedback would provide instructors vital information regarding students' performance, progress, and remaining concerns.

The JiTT technique starts with a pre-class activity (or "JiTT"), which is a Web-based exercise. The JiTT activity contains two or three multiple-choice questions or short-answer questions that target essential concepts. As described in Novak and Middendorf (2011), the two most integral forms of JiTT exercises are warm-ups (designed to introduce new concepts and stimulate class discussion) and puzzles (designed to integrate various concepts and to assess student learning following their working with material), though JiTT questions can exist in a variety of forms, depending on the academic discipline and the specific topic of study. Regardless of their form, "writing good JiTT questions is one of the most important and challenging aspects of implementing JiTT pedagogy" (Marrs & Novak, 2014). Effective JiTT questions are ones that "yield a rich set of students responses for classroom discussion, encourage students to examine prior knowledge and experience, require an answer that cannot easily be looked up," evoke an emotional response, connect previously learned material and newly acquired information, and require students to use their own words (Novak & Patterson, 2010). Students must complete the questions approximately two to three hours before class time and turn them in through a learning management system (LMS) (e.g edmodo) or another Internet-based program. It is highly recommended for the JiTT exercises to factor into students' grades on some level, and instructors can use a variety of scoring rubrics to assess students' performance on JiTT exercises (Marrs, Blake, & Gavrin, 2013). The instructor receives students' answers to the JiTT activity just in time to fine-tune his or her lesson based on this feedback, hence the name of the technique. The teacher can then decide how to use class time in order to best address specific misconceptions, gaps in learning, and students' concerns about content (Camp, Middendorf, & Subiño Sullivan, 2010).

On the same day that students complete the JiTT, the instructor begins the class by projecting a representative sample of open-ended responses or the distributions of answers to multiple-choice questions for the entire class to see; these responses serve to stimulate class discussion and are a point of departure for the teaching of key topics. Subsequently, instructors can choose to implement cooperative learning activities in class based on the JiTT questions and responses, which can decrease the amount of time spent lecturing to students and help them learn from one another, thus activating the ZPD.

The teaching/learning feedback loop" facilitated through the pre-class JiTT activity is the crux of JiTT pedagogy (Novak & Patterson, 2010). Since students come to class prepared with the course material already activated, they participate more in class discussions and learn more from in-class assignments. From an instructor's point of view, JiTT practitioners are more aware of students' progress and can appropriately dedicate class time to the specific concepts or material with which their students need assistance. From a student's point of view, learner shave multiple chances to receive formative feedback before a major assessment, which in theory should inform their study habits outside of class as well as enhance learning (Cookman, 2010). When implemented correctly, JiTT is a highly successful technique.

The Just-in Time Teaching (JiTT) Implementation Procedure.

- Materials and small sets of web questions were posted in a learning management system called 'edmodo'. This exercise is usually repeated at the commencement of each lecture.
- 2. Students answer a small set of web-based questions on upcoming course material outside of class and submit their responses online a day before class begins. Once submitted, the instructor reviews the students' JiTT responses and develops in-class active-learning exercises targeting learning gaps identified in the JiTT responses "just in time" for class. As usual this exercise is also repeated for each lesson.
- **3.** The lecturers implement JiTT in the classroom by showing a sample of students' responses (anonymously) at the front of the room and following up with classroom discussion asking students to point out incomplete or incorrect thought processes, expand on submitted responses, or extend the highlighted concept. This step is also repeated for each lesson.



JiTT was originally developed at Indiana University and Purdue University at Indianapolis (IUPUI) and the United States Air Force Academy to help students and faculty in physics (Novak et al 1999)

Figure 2: The Just-in Time Teaching (JiTT) Implementation Procedure.

Benefits for Students

According to Marrs, Blake, & Gavrin, 2013 the following are the benefits of JiTT to students:

Improving Pre-Class Preparation

- i. **Structuring out-of-class learning to increase time on task-** JiTT exercises are designed to focus student attention, scaffold effective learning processes, promote interactive engagement with course material, and encourage reflective learning. All of these behaviours are positively associated with effective learning.
- ii. Increasing motivation for out-of-class preparation- Students see a direct connection between their out-of-class effort and in-class instruction. Students' JiTT responses inform classroom activities, which are focused on the learning challenges highlighted in their responses, building a positive feedback loop that encourages completion of future

JiTT exercises and greater student-faculty interaction. In short, students see that their out-of-class efforts make a real difference in what happens in class, which in turn is focused on addressing their most important learning challenges.

Improving In-Class Learning

- i. **Increasing learning in the classroom** Students who come to class prepared are able to learn more and contribute more to others' learning in the classroom. JiTT exercises require students to interact with course material prior to the upcoming class, increasing the efficiency and effectiveness of classroom activities.
- ii. Providing frequent and immediate feedback on learning- JiTT makes learning gaps visible – to both instructors and students – through review and posting of students' JiTT responses in class. Follow-up in-class exercises based on these responses provide additional opportunities for students to obtain feedback on their thinking processes and gauge their level of understanding relative to their peers.
- iii. Confronting mis/preconceptions- JiTT exercises are most helpful when they make visible students' current mental models and thinking processes.
 Often these thought processes inhibit student learning and lead to the alltoo-common result that what students are learning is not the same as what we are teaching. Once student pre/misconceptions are identified, in-class

exercises can be developed that lead students to contradictory outcomes, providing an opportunity for effective knowledge-building.

Promoting Long-term Learning

- Developing meta cognitive skills- Including a JiTT question such as "After completing this assignment, I am still unsure of..." helps students to develop reflective skills that promote self-directed and self-monitoring learning, skills critical for advanced and life-long learning.
- ii. **Improving transfer of knowledge** Effective JiTT exercises require students to explain not only their answers, but also the thought process that led them to those answers. By focusing on thinking processes as well as content, students begin to develop transferable thinking skills that they can apply in a variety of settings and to problems that they have not encountered previously.
- iii. Linking new information and concepts to prior knowledge and realworld issues- JiTT exercises are often most effective when students are asked to relate new course material and concepts to prior experiences and relevant real-world issues and events. This helps to create a knowledgemaking bridge that promotes durable, long-term learning.

Benefits for Instructors

The benefits of JiTT to instructors according to Marrs, Blake and Garvin (2013)include the following:

- i. JiTT provides a window into student learning processes- Student responses to JiTT exercises provide a never-ending stream of surprises about student thinking processes – that would otherwise remain hidden until an exam, quiz, or homework assignment. Making these learning processes visible allows us to develop in-class activities aimed at improving those skills.
- ii. **JiTT is a flexible teaching technique** JiTT can be implemented incrementally and in conjunction with current teaching practices; used in any discipline and any course level, including both undergraduate and graduate-level courses; and combined with other pedagogical innovations.
- iii. **JiTT increases teaching efficiency and effectiveness** Instructors are often concerned that JiTT will take more time relative to lecturing, leading to less content coverage. On the contrary, using JiTT exercises to determine areas where students are having the most difficulty means that you can focus classroom attention where it has the biggest impact rather than using a "shotgun approach" that may waste students' time and reduce motivation.
- iv. JITT improves student preparation for class- At the top of most instructors' list of "teaching problems" is insufficient student preparation for class. JITT provides a positive incentive for students to complete JITT exercises, knowing that their responses will be used to inform the structure and activities of the next class. Students in JITT-based courses

 JiTT transforms the classroom- Starting a class by showing a sample of JiTT responses completely changes the classroom learning environment. Students love to see their work used as the basis for the day's activities, whether a classroom discussion or small-group, hands-on activities. In either case, students are engaged and ready to learn, using their own words and thought-processes as starting points.

Overview of Peer Instructional Strategy

Peer instructional strategy was popularised by Harvard Physics Professor Eric Mazur in the late nineties. Peer Instruction (PI) is an interactive teaching technique that promotes classroom interaction to engage students and address difficult aspects of the material (Crouch, Watkins, Fagen, & Mazur, 2017; Crouch & Mazur, 2012; Mazur, 2014). By providing opportunities for students to discuss concepts in class, PI allows students to learn from each other. However, for this strategy to be most effective, students need to come to class with some basic understanding of the material. Mazur developed his version of this practice to address his students' struggle to apply factual knowledge to conceptual problems. In Mazur's technique, multiple-choice conceptual questions are posed at key parts of the lecture. If the majority of the students' responses are incorrect they are asked to turn to their neighbour to convince them of their answer. Peer instruction works on the theory that students at similar cognitive levels can at times explain content where educators may experience the "expert blind spot" (Wiggins & Matgue, 2011). Mazur claims that this technique works best if students prepare before class and then test their application of knowledge in class where they have opportunities for rich feedback (self, peer and teacher). Mazur also sees this technique as a form of the flipped classroom which presents an opportunity for educators to understand the basis of the flipped classroom model.

With PI, students engage with a chunk of course content by discussing it with one another. However, in order to be effective, these discussions must be thoughtfully choreographed by the instructor. Typically, the discussions are centred on a question whose answer requires application of a principle or concept that is fundamental to the course content. After engaging in the peerbased discussion, the instructor also needs to debrief with the students, to clarify or correct any remaining issues. A typical implementation of Peer Instruction has two parts namely; the Set-Up for Peer Instruction and the peer Instruction itself.

The teacher briefly present a topic after which the students need reflect on what they have learnt through a concept test. After thinking about the question for a couple of minutes students vote on an answer. If an appropriate number of students answer correctly (30-70%) then the teacher asks them to turn to their neighbours and discuss their answers, (in pairs or small groups) preferably with someone who voted differently. The teacher moves around the class promoting active discussions and to guide student thinking. After several minutes the students vote again after which the teacher goes through the correct answer. Depending on the student responses, the teacher may ask another concept test on the same topic or move onto a different topic (Watkins and Mazur, 2010).

PI has been shown to engage students in classroom demonstrations in Science courses in a similar way to interactive lecture demonstrations (Sokoloff & Thornton, 2010). It has been shown that asking students to predict the outcome of a demonstration leads to a greater conceptual understanding (Crouch, Fagan, Callan & Mazur, 2014) and teachers have found higher levels of student engagement (Mazur, 2014).

There are a variety of question formats which can be used in PI, *e.g.* questions on general theories and definitions, application of concepts in different contexts and questions which inter-relate different ideas (Watkins and Mazur, 2010). PI can not only be used with questions for which there is a "correct" answer but also to stimulate discussion amongst students where there is no clear-cut answer. PI facilitates students improving their skills in critical listening and the creation of solid arguments. Regardless of discipline PI enables students to generate knowledge through discussion with their peers and to actively participate in the subject which they are studying. Teachers can therefore select the PI questions used in-class to address the specific difficulties encountered by students.

PI uses short, multiple choice questions in class which probe students' conceptual understanding, known as 'Concept tests' (Watkins & Mazur, 2010), for example Physics (Mazur, 2014); Chemistry (Ellis et al. 2011, Landis et al. 2011), Astronomy (Green, 2012); Mathematics Hughes-Hallett, Gleason & et al, 2014); Terrell (2015); Geoscience Steer & McConnell (2011) and Philosophy (Bigelow, Butchart & Handfield, n.d).

Advantages of Peer Instructional Strategy

Peer instructional strategy provides many advantages for both students and instructors. Some of these benefits are as follows:

- a. PI enhances the engagement and comprehension of the students regardless of their background knowledge (Crouch & Mazur, 2012; Lasry, Watkins, Mazur, & Ibrahim 2013);
- b. PI increases peers interaction, allows peers to challenge each other with debates, and provides a process of reasoning during class discussions (Schmuck, 2012).
- c. PI improves students' ability to solve problems and gain new insights as a consequence of the thinking process (Gok, 2015);
- d. PI reduces students' number who drops out of the course (Gok, 2012) and
 (e) PI diminishes the gender gap in students' conceptual learning (Gok, 2014, Crouch, & Mazur, 2001).

How PI Works

This includes many descriptions of how JITT can help successfully prepare students by structuring reading before class. In comparison, PI structures time during class around short, conceptual multiple-choice questions, known as Concept tests. These questions are targeted to address student difficulties and promote student thinking about challenging concepts. After a brief presentation by the instructor, the focus shifts from the instructor to the student, as the instructor encourages the students to think about the material by posing a Concept test.

After 1–2 minutes of thinking, students commit to an individual answer. If an appropriate percentage of students answer the Concept test correctly, the instructor asks students to turn to their neighbours and discuss their answers. Students talk in pairs or small groups and are encouraged to find someone with a different answer. The teaching staff circulates throughout the room to encourage productive discussions and guide student thinking. After several minutes students answer the same Concept test again. The instructor then explains the correct answer and, depending on the student answers, may pose another related Concept test or move on to a different topic.

A variety of question-types can be used with PI, including questions about general accounting principles and definitions, questions asking students to apply accounting concepts and conventions in different contexts, and questions that illustrate how different ideas are related. PI is not only useful for questions with "correct" answers, but also for promoting discussion among students with questions that lack a clear-cut answer. For example, a Concept test may ask students to consider the relative importance of different accounting assumptions or the relative value of different interpretations of Financial Accounting illustrations. The structure of PI provides opportunities for students to hone their skills in critical listening and developing solid arguments. Regardless of subject matter, PI enables students to create knowledge through discussion and become active participants in the discipline they are studying.

The quality of student discussion and learning in a PI classroom depends on the quality of the Concept tests. Several databases of class-tested questions exist in physics (Mazur, 201), chemistry (Ellis et al., 2000; Landis et al. 2011), astronomy (Green, 2012) and mathematics (Hughes-Hallett et al., 2014; Terrell, 2015),.For a Concept test to be most effective, the question must require higherlevel thinking about a concept so students aren't simply recalling something they read or using "plug-and-chug" with equations. Questions must also be at an appropriate difficulty level so students are challenged but can reason to the answer with their existing knowledge. To choose the best Concept tests, instructors need to gauge what concepts are causing student difficulties and what level of question is appropriate for their class.

Implementation of Peer Instructional Strategy

According to Lasry, et al (2016), P1 can be implemented in the following ways:

1. Provide students with materials to study before class to prepare them for active learning in class.

2. After a brief lecture (10-15 minutes) ask students a challenging conceptual question.

3. Individuals think for 1-2 minutes.

4. Ask students to vote on their answer (show of hands, cards, electronic voting-

e.g. UQ Poll).

5. If under 30% are correct then revisit the concept.

6. Ask individuals to think and revote.

7. If 30-70% are correct, engage in peer discussion (pairs or small groups).

8. Students re-vote. If over 70% are correct then explain the answer and move

on. If they are still struggling, revisit the concept (e.g. mini lecture) and repeat the process.

9. Remind students of the relevance of the activity to broader outcomes

The Concept test Peer Instruction implementation process is shown in Figure 3.

Figure 3. The Concept test-Peer Instruction Implementation Process Lasry, et al, (2016).

To implement Concept tests and PI (Watkins & Mazur, 2010) the teacher briefly presents on a topic after which the students reflect on what they have learnt through a Concept test (see Figure 1). After thinking about the question for a couple of minute students vote individually on an answer. If correct answer 30–70% of students answer correctly the teacher asks them to turn to their neighbours and discuss their answers, in pairs or small groups, preferably with someone who voted differently. The teacher moves around the class promoting active discussions and to direct student thinking. After several minutes the students vote again after which the teacher goes through the correct answer. Depending on the student responses, the teacher may ask another Concept test on the same topic or move onto a different topic.

There are different types of question format which can be used in PI, for example, questions on general theories and definitions, application of concepts in varying contexts and questions which inter-relate different ideas (Watkins & Mazur, 2010). PI can not only be used with questions for which there is a 'correct' answer but also to stimulate discussion amongst students where there is no definitive answer. PI facilitates students improving their critical listening skills as well as the ability to create solid arguments. Whatever the discipline, PI supports students in the creation of knowledge through discussion with their peers and in active participation in the subject which they are studying.

At Harvard University, PI courses in introductory Physics have demonstrated greater average normalised gains than traditional courses (Crouch & Mazur, 2012). Other research has shown positive results with PI in a variety of disciplines, for example Biology, Engineering, Psychology, Medicine, Philosophy and Mathematics (Watkins & Mazur, 2010).

Improving lectures with Peer Instructional Strategy

Peer Instructional strategy is a simple way to incorporate some genuine interaction and engagement in lectures. It is cheap, simple to implement, and delivers useful feedback to both students and to the lecturer. Typically, the strategy works in the following way. After lecturing on a topic for 10-15 minutes, the lecturer stops and asks a multiple-choice quiz question that tests students' understanding of the topic under discussion. These questions are often designed to test common misunderstandings of the topic. All the students in the class then "vote" on the answer to the question. This can be done in a number of different ways; using an electronic response system ("clickers"), flash cards, or simply by show of hands. If most students have the right answer, the lecturer can confirm it and move on. If most have the wrong answer, this suggests the lecture was opaque and the students didn't get it. The lecturer can then double back and explain the topic again or give some hints before trying again with the same (or a different) question. If there is a mixture of answers, students are given a few minutes to discuss the question with their neighbours and try to persuade them that their answer is correct. The whole class then gets to vote a second time. Typically, more students give the correct answer the second time around; students with the right answer usually convince others of it. The lecturer can then confirm the answer and move on, either to another question, or to the next topic in the lecture.

Empirical Studies

Just-in-time Teaching Strategy and Students' Academic Achievement

Danjuma (2014) investigated relative effectiveness of using "Just-in-Time Teaching" (JiTT) and conventional teaching method (lecture method) on students' academic achievement in Elementary structural design in COE. Two research questions guided the study while two hypotheses were tested. Quasi – experimental research design was adopted. The sample of the study comprised 218 NCE II students from three College of Education offering technical education in North Central States of Nigeria. Two intact classes from two College of Education were randomly and purposively selected for the study. One College of Education was selected and assigned to experimental group while one other College of Education was selected and assigned to control group. Cronbach Alpha was used to ascertain reliability index which was found to be 0.87. Elementary Structural Design Achievement Test (ESDAT) was instrument for data collection which was validated by three experts. The pre-test and post-test were administered to both the control and experimental group. JITT method was used to teach the experimental group while control group was taught the same lesson using conventional method.

The research questions were answered using mean and standard deviation while hypotheses were tested at 0.05 level of significance using Analysis of Covariance (ANCOVA) statistic. The results showed JiTT has significant effects on achievement grades of students taught Elementary structural design in College of Education when compared to those taught using conventional method. Results showed that there was a significant difference between the mean scores of male female students taught using JiTT. The study recommended that elementary structural design lecturers should adopt JITT formally for instruction in College of Education in order to improve students' achievement.

Danjuma's study is related to the present study because both studies dealt on JiTT strategy on students' academic achievement, used the same ANCOVA in hypotheses testing and was conducted at the same level of education (College of Education). However, both studies differed significantly in geographical location. While Danjuma's study investigated relative effectiveness of using "Just-in-Time Teaching" (JiTT) and conventional teaching method (lecture method) on students' academic achievement in Elementary structural design in COE in North central State, the present study focused on relative effectiveness of Just-in-Time Teaching and Peer Instructional Strategies on students' achievement and retention in financial accounting in Anambra State College of Education.

Naboth-Odums (2014) conducted a study on the effect of using "Just-in-Teaching" (JITT) and conventional teaching method (lecture method) on students' academic performance in business studies. Two research questions guided the study while two hypotheses were tested. Quasi – experimental research design was adopted. The sample of the study comprised 225 respondents made up of 105 male and 120 female students in Rivers-West Educational Zone. The instrument used for data was Business Studies Achievement Test (BSAT). The research questions were answered using mean and standard deviation while hypotheses were tested at 0.05 level of significance using ANCOVA.

Findings showed that the achievement grades of students taught business studies using JITT method are greater than those taught using conventional method; there was significant effect of gender on the students' mean academic achievement of students taught business studies using JITT method. That is to say that the females gained more from the JiTT method compared with the males. Also there is significant interaction effect of JiTT method and gender on students' achievement. In line with the finding, it was recommended among other that JITT should be formally adopted for instruction in secondary schools in order to improve students' performance.

Naboth-Odums's study is related to the present study because both focused the effect of JiTT method on students' performance. However, both studies differ in location and level of education. While Naboth-Odums's study focused on the effect of using "Just-in-Teaching" (JITT) and conventional teaching method (lecture method) on students' academic performance in business studies in Rivers-West Educational Zone the present study, the present study focused on relative effectiveness of Just-in-Time Teaching and Peer Instructional Strategies on students' achievement and retention in financial accounting in Anambra State College of Education.

Just-in-time Teaching Strategy and Students' Academic Retention

Richard (2014) conducted a study on the influence of JiTT on students' academic achievement and retention in chemistry in Urban High School, Georgia. The purpose of the study was to determine if JITT was an effective strategy of teaching chemistry to urban high school students. The design of study was quasi experimental design. The JITT program was implemented in two of three descriptive chemistry classes at an urban high school for six weeks. Two of the classes were called experimental because of the special JITT program and the control class received no JITT programme. There will a total of 91 students in the study. Students were administered a pre-test prior to the implementation of the programme and a post-test at the end of the programme. The unit taught was reaction rates and chemical equilibrium. The results of the study showed that achievement in the chemistry classes was related to the strategy of instruction and that JITT strategy was the preferred strategy by the students rather than the traditional teacher centred strategy. Female students retain more than male students. Finding statistically showed the existence of significant difference between male and female students' performance in Chemistry Achievement Test, while there is no significant difference in male and female performance in Chemistry Retention-Test. There was also

interaction effect of teaching methods and gender on students' academic achievement.

Richard's study is related to the current study because both focused on the effect of JiTT students' achievement and retention. However, both studies differ in location and level of education. While Richard's study focused on the influence of JiTT on students' academic achievement and retention in chemistry in Urban High School, Georgia, the present study focused on relative effectiveness of Just-in-Time Teaching and Peer Instructional Strategies on students' achievement and retention in financial accounting in Anambra State College of Education.

Gambari, Bello, Agboola and Adeoye (2016) conducted a study on impact of Just-in-Time Teaching strategy on students' achievement and retention of mammalian skeletal system in Minna, Niger State, Nigeria. This study investigated the impact of Just-in-Time Teaching strategy on students' achievement and retention of mammalian skeletal system in Minna, Niger State, Nigeria. The quasi-experimental non-equivalent, non-randomized, pre-post-test control group design comprised of an experimental group (n = 83) with group learning treatment and a Control group (n = 76) was given conventional teaching for a duration of 4-week. Four research questions and four hypotheses were raised and tested at 0.05 level of significance. Biology Achievement Test (BAT) and Field Trial Validation Questionnaire (FTVQ) with reliability coefficient of 0.70 and 0.84 respectively, were used for data collection. The

ANCOVA was employed to determine the main effects of Just-in-Time Teaching strategy on group achievement, retention and gender. The results showed a significant effect on students' achievement, retention but no significant effect of gender on the concept of Mammalian skeletal system's achievement. The findings revealed that the students taught the concept of Mammalian skeletal system using Just-in-Time Teaching strategy outperformed their counterpart taught the same concept using conventional lecture method both in achievement and retention; and both the male and female students in the experimental group improved their achievement and retention in which no significant difference was observed after the treatment. Just-in-Time Teaching strategy had significant effects on students' achievement and retention. Gender differences with respect to the effects of Just-in-Time Teaching strategy on achievement and retention was not significant. Therefore, biology teachers should be encouraged and trained in the use of Just-in-Time Teaching strategy to improve students' achievement and retention in Nigeria.

Gambari, Bello, Agboola and Adeoye s' study is related to the current study because both focused onJust-in-Time Teaching strategy on students' achievement and retention. Both studies differ in location and content. While Gambari, Bello, Agboola and Adeoye s' study focused on impact of Just-in-Time Teaching strategy on students' achievement and retention of mammalian skeletal system in Minna, Niger State, Nigeria, the present study focused on relative effectiveness of Just-in-Time Teaching and Peer Instructional Strategies on students' achievement and retention in financial accounting in Anambra State College of Education.

Peer Instructional Strategy and Students' Academic Achievement

Eryılmaz (2014) conducted a study on the relative effectiveness of the PI method enriched by the concept tests on the academic achievement of the high school students and their attitudes towards physics were investigated. In the study which was carried out with 192 students, two different teaching methods were used including PI enriched by concept tests and traditional teaching method.

One intact class consisting of 192 students was assigned as experimental group and the intact class also consisting of 192 students as control group. The experimental group students were exposed to guided inquiry method while the control group students were taught with expository method. The study adopted a quasi-experimental design. At the end of the treatment, Researchers-Made- Achievement-Test and an attitude questionnaire were administered to both groups. A retention test was administered three weeks following the achievement test. The hypotheses were tested using Analysis of Co-Variance (ANCOVA). The results showed that PI is more effective than the traditional teaching method in terms of the achievement scores of students in the physics lesson. Also male students taught with PI strategy were able to retain more than those with traditional teaching method. This showed that the males gained more from the PI method compared with the females in physics and there was significant effect of gender on the students' mean achievement scores of students taught physics using PI method. There was interaction effect of teaching methods and gender on students' retention scores in physics.

Eryilmaz's study is related to the current study because both of them focused PI strategy on students' achievement. However both differ in content and location. While,Eryilmaz's study focused on the relative effectiveness of the PI method enriched by the concept tests on the academic achievement of the high school students and their attitudes towards physics, the present study focused on relative effectiveness of Just-in-Time Teaching and Peer Instructional Strategies on students' achievement and retention in financial accounting in Anambra State College of Education.

Peer Instructional Strategy and Students' Academic Retention

Ouka, Aurah and Amadalo (2015) carried out a study on peer instructional strategy and secondary school students' achievement and retention in vectors in Kenya. The purpose of this study was to document the relative effectiveness of peer instructional strategy on students' achievement and retention in vectors. The study used a modified version of the Solomon four group experimental design. Intact classes were randomly assigned to the four treatment groups in the Solomon four design. The study used both probability and non-probability sampling procedures to select 479 form three learners for the study. Two achievement tests were used to collect data for achievement while delayed test was to collect data for retention. The t-test and ANOVA were used in data analysis. Results revealed that peer instructional strategy had a marked positive impact on the female students' achievement in vectors than when conventional methods of instruction used and also that female students retained more with PI than with conventional methods. It is therefore recommended that where there is need to substantially improve achievement in vectors peer instruction should be used.

Ouka, Aurah and Amadalo s' study is related to the current study because both of them focused PI strategy and students' achievement and retention. However, both differ in level of education and location. While, Ouka, Aurah and Amadalo s' study focused on study on peer instructional strategy and secondary school students' achievement and retention in vectors in Kenya, the present study focused on relative effectiveness of Just-in-Time Teaching and Peer Instructional Strategies on students' achievement and retention in financial accounting in Anambra State College of Education.

Gender, Students' Academic Achievement and Retention

Bilesanmia and Awodem (2010) carried out a study on the conceptmapping, students' locus of control, and gender as determinants of Nigerian high school students' achievement in Biology. One intact class consisting of 42 students was assigned as experimental group and the intact class also consisting of 42 students as control group. The experimental group students were exposed to guided inquiry method while the control group students were taught with expository method. The study adopted a quasi-experimental design. At the end of the treatment, Researchers-Made- Achievement-Test and an attitude questionnaire were administered to both groups. A retention test was administered three weeks following the achievement test. The hypotheses were tested using Analysis of Co-Variance (ANCOVA). Bilesanmia and Awodem found that there was no significant main effect of gender on students' achievement in Biology.

Bilesanmia and Awodems' study is related to the current study because both of them focused on students' achievement and retention. However, both differ in level of education and location. While, Bilesanmia and Awodems' study focused on study on the concept-mapping, students' locus of control, and gender as determinants of Nigerian high school students' achievement in Biology, the present study focused on relative effectiveness of Just-in-Time Teaching and Peer Instructional Strategies on students' achievement and retention in financial accounting in Anambra State College of Education.

Godpower-Echie and Ihenko (2017) in their study titled 'influence of gender on achievement and retention of integrated Science students in Obio Akpor local government area of Rivers State'. Two research questions and two hypotheses were raised. The population comprised of all secondary school students in the local government area and a total of 600 students took part in the study. Two instruments were used to collect data: the test scores and a likert scale like interest scale. Mean, standard deviation and t-test were used to analyse the data. The findings showed that gender has no significant influence on achievement and retention of integrated science students.

Godpower-Echie's and Ihenkos' study is related to the current study because both focused of gender and students' academic achievement and retention. However differ in content and location. While Godpower-Echie and Ihenkos' study focused on influence of gender on achievement and retention of integrated Science students in Obio Akpor local government area of Rivers State, the present study focused on relative effectiveness of Just-in-Time Teaching and Peer Instructional Strategies on students' achievement and retention in financial accounting in Anambra State College of Education.

Summary of Review of Related Literature

The review of related literature for this work was organized under conceptual framework, theoretical framework, theoretical studies and empirical studies. Under conceptual framework, just-in-time teaching was defined as a fusion of high-tech and low tech elements. This connotes classroom activities that promote active learning and the World Wide Web resources that are used to enhance the classroom component. Peer instructional strategy is an interactive teaching strategy that promotes classroom interaction to engage students and address difficult materials. Similarly, Financial Accounting was conceptualized as the science of recording transactions in money or money's worth in such a manner that at any subsequent date, the nature and effect of each transaction and the combined effect of all of them may be clearly understood, and the financial position of the business determined.

Under the theoretical framework, relevant teaching theories were reported to give the study its theoretical base. Several topics that were discussed under the theoretical studies include objectives of teaching accounting courses in College of Education, causes of poor academic achievement of students, gender issue in financial accounting, overview of just-in- time teaching strategy and overview of peer instructional teaching strategy. This was followed by the reviewed of empirical studies.

Under the empirical studies, several studies on just-in-time, peer instruction, gender, academic achievement and retention were reviewed. Relative effectiveness of some JiTT and PI teaching strategies on students' achievement scores in several subjects on physics, mathematics and biology were also reviewed.

The review of empirical studies revealed that most of the studies were conducted in different environments rather that the environment of present study (Anambra State). None was done on relative effectiveness of Just-in-Time Teaching and Peer instructional strategies on students' achievement and retention in Financial Accounting in Anambra State College of Education which the present study ascertain. These gaps identified, prompted the researcher to carry out this study.

CHAPTER THREE METHOD

In this chapter, the procedures used to conduct the study are discussed under research design, area of the study, population of the study, sample and sampling technique, instrument for data collection, validation of the instruments, Item Analysis, reliability of instruments, method of data collection, experimental procedure, control of extraneous variables and method of data analysis.

Research Design

The design of this study was quasi-experimental. Specifically, it was a non-randomised, pre-test, post-test, non-equivalent group research design involving intact groups of students offering Financial Accounting in NCE year 2. According to Nworgu (2015), this design establishes the cause and effect relationship between the variables of interest. The researcher found this design appropriate for the study because true experimental research design which involves randomization would disrupt academic activities for the two Colleges of Education of the study if applied. The experimental treatment in this study included JiTT strategy and Peer Instructional strategy in the respective groups. The design is presented in figure 2.

Groups	Pretest	Treatment	Posttest	Delayed test
E ₁	\mathbf{O}_1	$\mathbf{X}_{\mathbf{I}}$	O_2	Dt
E ₂	O ₁	X ₂	O ₂	Dt

	Fig	g. 3:	Non	Equival	lent P	Pre-test –	Post-test	Experimental	Group	Desi	gn
--	-----	-------	-----	---------	--------	------------	-----------	--------------	-------	------	----

Where:

 $E_1 = Experimental group 1.$

 E_2 = Experimental group 2.

O₁=Pre-test.

 $O_{2=}$ Post-test.

 X_1 = Experimental treatment using PI strategy.

 X_2 = Experimental treatment using JiTT strategy.

Dt = Delayed test

--- = Non- equivalence of the two groups

Area of the Study

The study was carried out in Anambra State. The two College of Education in the area under study were Nwafor-Orizu College of Education, Nsugbe (N.O.C.E) and Federal College of Education (Technical), Umunze (F.C.E (T). Both schools shared the same characteristics that were related to the variables of interest (offering Financial Accounting at NCE year two level). Anambra state is located at the east of River Niger and bounded by Enugu State in the east, Imo state in the south, Kogi State in the north and Delta state in the West. The choice of this area was based on the fact that Anambra State is a commercial area with its resultant increased demand for the services of accountants. Unfortunately, the rate of failure of students in accounting was high in this area and this situation demanded for an alternative possible way of improving students' achievement and retention in accounting particularly in Financial Accounting. Hence, the need for the study.

Population for the Study

The population for the study was made up of 167 NCE Year II Business Education students of 2018/ 2019 session from the two College of Education in Anambra State. The number was made up of 120 from Federal College of Education (Technical), (FCET) Umunze and 47 from Nwafor-Orizu College of Education (NOCE), Nsugbe. The figures were obtained from the Dean's office from school of business education in FCET, Umunze and Head of Department's office from department of business education in NOCE, Nsugbe. The population by institution and gender is shown in Appendix 2 on page 125.

Sample and Sampling Techniques

The entire population was studied without sampling because there was no randomisation of students. By the toss of coin, the two experimental groups – (PI and JiTT) were assigned to groups A and B. Accordingly, students from Nwafor-Orizu College of Education (NOCE), Nsugbe formed 'Group A' and were exposed to Peer Instructional Strategy while those in Federal College of Education (Technical), (FCET), Umunze formed 'Group B' and were exposed to Just-in-Time Teaching strategy in their respective schools.

Instrument for Data Collection

The instrument for data collection was Financial Accounting Achievement Test (FAAT) developed by the researcher based on literature and consultations with experts in Financial Accounting. The instrument consisted of two sections. Section A sought to elicit background information of the students while section B contained 40 subjective tests in which the students were required to supply the correct analysis. Test blueprint used for the construction of FAAT was used to allocate question to content areas (Appendix 3, page 126). The instrument covered four content areas in Financial Accounting namely: manufacturing accounts, trading, profit and loss accounts and balance sheet. The same instrument used as pre-test was reshuffled and the colour of the paper was changed before administering it as post-test. Furthermore, the instrument was again administered on the students after three weeks to determine students' retention on the taught concepts. Detailed information on FAAT was documented as appendix 4 at page 127. The test scores from the two groups are contained in appendix 5 page131.

Validation of the Instrument

The instrument for data collection was validated by three experts. One expert was from Department of Accounting Education in School of Business Education, Federal College of Education (Technical), Umunze and two others from the departments of Technology and Vocational Education and Educational Foundation respectively, in Faculty of Education, Nnamdi Azikiwe University, Awka. The experts were given the topic purpose of the study, research questions, null hypotheses, content to be covered, the lesson plan and instrument. They were requested to scrutinize the test items for clarity, suitability of the language and coverage on the content area. Their inputs were used as the number of the test items were reduced from 60 to 40 items. Based on their criticisms and recommendations, modifications were made before trial
testing. See appendix 6 page 136. After trial testing on 40 students, the test scores were subjected to item analysis to further consolidate the content validity and psychometric characteristics of the items. Psychometric properties established were Difficulty Indices and Discrimination Indices.

Item Analysis

The item analysis was conducted using the scores of 40 students in the pilot test. Under the item analysis (Appendix 7 page 139), the two indices that were computed were: (i) item difficulty and (ii) discrimination index. The item difficulty was determined by the proportion of candidates that got the item right. According to Uwameiye in Oviawe (2010), an ideal item is one whose index is 50 per cent difficulty level. An item of between 25 per cent to 75 per cent could be allowed in an achievement test where the aim is to have a high proportion of the class achieve mastery.

The degree to which an item discriminates between very high knowledge (high achievers) and low knowledge (low achievers) is the discrimination power of the item (Osunde in Oviawe (2010). For an effective item, the index is supposed to be positive and high. This implies that more students in the upper group (high achievers) got the item than those in the lower group (lower achievers). A negative discrimination index indicates a defective item.

Reliability of the Instrument

Copies of the FAAT were administered to 50 NCE II accounting students drawn from School of Business Education in Enugu State College of Education (Technical), Enugu who were not part of the population. Instructions on how to administer the instrument were given by the researcher to the class lecturer who administered the instrument. After 30 minutes, the FAAT were collected and handed over to the researcher. The reliability of the instrument was determined using Kuder-Richardson Formula 20. This was because the test was dichotomously scored and was not of equal difficulty. The reliability coefficient of 0.90 was obtained (See Appendix 8 in page 143).

Method of Data Collection

FAAT was administered to all the groups by the course lecturers in the first week as pre-test before the experiment to determine the initial abilities of the students prior to the experiment. In the second week, the treatment began for the two groups and ended in the fifth week. In the ninth week, the items of the same pre-test instrument were reshuffled and the colour of the paper changed before administering them as the post-test to the groups. The instrument (FAAT) was re-reshuffled again and was re-administered to the students after three weeks to determine their retention of the course content. The detail of the method of data collection are shown in the experimental procedure.

Experimental Procedure

The procedures adopted in carrying out the experiment are outlined as follow:

A. Duration of Experiment: The researcher before the commencement of this study did a preliminary survey to ascertain the number of NCE II students

offering Financial Accounting. Also, the researcher made consultations with the two institutions where the study was carried out. Part of the consultations was to find out whether they have required materials/ equipment needed to conduct the experimental treatment. The researcher sought and obtained permission from the school authorities to conduct the research in their respective schools with their teachers, students and facilities. See Appendix 9 page 145.

The study lasted for six weeks (1^{st} week for pre-test, $2^{nd} - 5^{th}$ week for the study, 6^{th} week for the post-test, then 9 weeks for delayed test). In each of the two institutions, teaching was conducted during the normal school period using 1hour per week. The NCE (2018/2019) Year II Business Education students in Nwafor-Orizu College of Education (NOCE), Nsugbe assigned 'Group A' were exposed to Peer Instructional strategy while those in Federal College of Education (Technical), (FCET), Umunze assigned 'Group B' were exposed to Just-in-Time Teaching strategy.

B. Training of Research Assistants: The staff of Management Information System of FCET, Umunze trained the researcher assistants (course lecturers) and students on the steps involved in JiTT strategy before commencement of the experiment. See the pictures in Appendix 10, page 149.

At NOCE, Nsugbe student were taught steps involved in PI strategy. See the picture in Appendix 11, page 151.

C. Treatment Administration

Accounting course lecturers of the respective schools were used to teach their students to prevent bias. However, lesson plans were given to them in both schools to use. Their lesson notes were checked to ensure they did not deviate. First, Group 'A' was exposed to Peer Instructional Strategy. In the same vein, Group 'B' was exposed to JiTT strategy.

Control of Extraneous Variables

The following extraneous variables were identified in this study and controlled in the following ways:

- 1. Experimental Bias: The experimental bias was controlled as follows:
 - a) To avoid experimental bias, the researcher did not do the actual teaching of the both experimental groups.
 - b) The teaching was done by their regular Financial Accounting teacher.Also, the experimental groups were randomly assigned to avoid bias.
 - c) The same Financial Accounting achievement test was given to all the groups to avoid experimental bias.
 - d) The students did not have pre knowledge of their involvement in the experiment.
 - e) The researcher was not directly involve in the test administration but observed how the test was conducted by the normal class teachers.

- 1. Class Interaction: To ensure there was no interaction between the students in the experimental groups, PI group and JiTT group had their lectures at different institutions.
- 2. Test Sensitization: Since the same items were used for pre-testing, posttesting and retention, students may be very familiar with the test instrument thereby introducing error into the study. To minimize test sensitization therefore, the test items were reshuffled after the pre-test. The test was also delayed for two weeks before administering is to determine the students' retention scores.
- **3. Teacher Variability**: The regular Financial Accounting lecturers of the schools were used for the study. The researcher designed all the teaching instruments in order to control or avoid invalidity that may lead to teacher's variability. This helped to ensure uniform standards in the conduct of the research. In addition, the participating lecturers did not have access to the test instruments until an appropriate time in the course of the research.
- 4. **Differential Selection of Subjects**: To overcome the selection bias on the internal validity of the study, Analysis of Covariance (ANCOVA) was used in analysing the data collected which in itself correct non-equivalence of groups for any quasi-experimental study.
- 5. Variability of Instructional Situation: Homogeneity of instruction across groups was ensured as follows:

- a. The researcher trained all the teachers on the instructional procedures that was used in the study
- b. The lecturers were directed to use the lesson plans that will be provided by the researcher.
- c. The groups were taught the same topics and with the regular periods allotted to Financial Accounting in College of Educations' timetable.
- 6. Instructional Situation Variable: Instructional situation was the same for both groups, since classes for NCE II students were used and lesson plans bearing the same contents were also used.

Method of Data Analysis

The data collected from Pre-FAAT and Post- FAAT were analysed statistically. In answering the research questions, mean values were found and the standard deviation from the mean were determined. The Analysis of Covariance (ANCOVA) was used for testing the hypotheses at 0.05 level of significance. The analysis of covariance (ANCOVA) is considered adequate for this study because ANCOVA is very effective in pre-test post-test group design as it accurately controls pre-test differences (Gay, 1996). Difference between pre-test scores and post-test scores were indicated achievement gain/loss. In testing the hypothesis, if P- value is less than the significance level (0.05), the null hypothesis was rejected. On the other hand, if P- value is greater than or equal to the significance level (0.05), the null hypothesis was not rejected.

CHAPTER FOUR

PRESENTATION AND ANALYSIS OF DATA

In this chapter, the data collected from the field for this study were analyzed and the summaries were presented in tables to highlight the findings. The presentation was sequentially starting with research questions and then to the hypotheses.

Research Question 1

What is the relative effectiveness of JiTT and PI strategies on students'

mean achievement scores in Financial Accounting?

 Table 1: Mean Achievement Scores of Students taught Financial Accounting

 with JiTT and PI strategies

Strategies		Pretest	Posttest	Mean Difference
	Mean	29.69	62.84	33.15
JITT	Ν	120	120	
	Std. Deviation	6.340	8.948	
	Mean	25.15	51.57	26.42
PI	Ν	47	47	
	Std. Deviation	6.311	6.450	

Table 1 shows that the pretest and posttest mean achievement scores of students taught with JiTT are 29.69 and 62.84 respectively; while the mean difference between the pretest and posttest scores in JiTT is 33.15. The table also reveals that the pretest and posttest mean achievement scores of the students taught with PI are 25.15 and 51.57 respectively; while the corresponding mean difference is 26.42. This shows students exposed to JITT have higher mean achievement scores in Financial Accounting than those exposed to PI.

Research Question 2

What is the relative effectiveness of JiTT and PI strategies on students'

mean retention scores in Financial Accounting?

Table 2: Mean on Retention Scores of Students taught FinancialAccounting with JiTT and PI strategies

Strategies		Post test	Retention	Mean Difference
	Mean	62.84	79.68	16.84
JITT	Ν	120	120	
	Std. Deviation	8.948	9.259	
	Mean	51.57	56.02	4.45
PI	Ν	47	47	
	Std. Deviation	6.450	6.163	

Table 2 reveals that the posttest and mean retention scores of students taught with JiTT are 62.84 and 79.68 respectively; while the mean difference between the pretest and retention scores in JiTT is 16.84. The table also reveals that the posttest and mean retention scores of the students taught with PI are 51.57 and 56.02 respectively; while the corresponding mean difference is 4.45. This shows that the mean retention scores of students exposed to JITT in Financial Accounting is higher than the mean retention scores of those exposed to PI.

Research Question 3

What is the relative effectiveness of JiTT and PI strategies on male students' academic scores achievement in Financial Accounting?

		Male	Students	
Strategies		Pretest	Posttest	Mean Difference
	Mean	30.47	64.80	34.33
JITT	Ν	30	30	
	Std. Deviation	3.646	7.622	
	Mean	26.30	48.70	22.40
PI	Ν	10	10	
	Std. Deviation	7.166	3.268	

 Table 3: Mean on Achievement Scores of Male Students taught Financial

 Accounting with JiTT and PI Strategies

Table 3 shows that the pretest and posttest mean achievement scores of male students taught with JiTT are 30.47 and 64.80 respectively; while the mean difference between the pretest and posttest achievement scores in JITT is 34.33. The table also reveals that the pretest and posttest mean achievement scores of the male students taught with PI are 26.30 and 48.70 respectively; while the corresponding mean difference is 22.40. Thus, the table shows that male students exposed to JITT have higher mean achievement scores than their male counterparts exposed to PI.

Research Question 4

What is the relative effectiveness of JiTT and PI strategies on female students' mean achievement scores in Financial Accounting.

		Female	Students	
Strategies		Pretest	Posttest	Mean
				Difference
	Mean	29.43	62.19	32.76
JITT	Ν	90	90	
	Std. Deviation	7.011	9.295	
	Mean	24.84	52.35	27.51
PI	Ν	37	37	
	Std. Deviation	6.131	6.897	
	Mean	28.09	59.32	

Table 4: Mean on Achievement Scores of Female Students taught FinancialAccounting with JiTT and PI Strategies

Table 4 reveals that the pretest and posttest mean achievement scores of female students taught with JITT are 29.43 and 62.19 respectively; while the mean difference between the pretest and posttest scores in JITT is 32.76. The table also reveals that the pretest and posttest mean achievement scores of female students taught with PI are 24.84 and 52.35 respectively; while the corresponding mean difference is 27.51. This shows that the female students exposed to JITT have higher mean achievement scores than those exposed to PI.

Research Question 5

What is the relative effectiveness of JiTT and PI strategies on male students' mean retention scores in Financial Accounting?

		Male	Students	
Strategies		Posttest	Retention	Mean Difference
	Mean	64.80	70.33	5.53
IITT	Ν	30	30	
JII I	Std. Deviation	7.622	7.116	
PI	Mean N	48.70 10	52.60 10	3.9
	Std. Deviation	3.268	3.471	

 Table 5: Mean on Retention scores of male Students taught Financial

 Accounting with JiTT and PI Strategies

Table 5 indicates that the posttest and mean retention scores of male students taught with JiTT are 64.80 and 70.33 respectively; while the mean difference between the pretest and retention scores in JITT is 5.53. The table also reveals that the pretest and mean retention scores of the male students taught with PI are 48.70 and 52.60 respectively; while the corresponding mean difference is 3.9. This shows that male students exposed to JITT have higher mean retention scores than their male counterparts exposed to PI.

Research Question 6

What is the relative effectiveness of JiTT and PI strategies on female students' mean retention scores in Financial Accounting?

		Female S	Students	Mean Difference
Strategies		Posttest R	letention	
	Mean	62.19	69.42	7.23
JITT	Ν	90	90	
	Std. Deviation	9.295	8.459	
	Mean	52.35	57.59	5.27
PI	Ν	37	37	
	Std. Deviation	6.897	6.591	

 Table 6: Mean Retention Scores of Female Students taught Financial

 Accounting with JiTT and PI Strategies

Table 6 reveals that the posttest and mean retention scores of female students taught with JITT are 7.23 and 69.42 respectively; while the mean difference between the posttest and retention scores in JITT is 7.23. The table also reveals that the posttest and mean retention scores of female students taught with PI are 52.35 and 57.59 respectively; while the corresponding mean difference is 5.27. This shows that the female students exposed to JITT have higher mean retention scores than those exposed to PI.

Hypothesis 1

There is no significant difference in the relative effectiveness of JiTT and PI strategies on students' mean achievement scores in Financial Accounting.

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	9705.793 ^a	2	4852.896	132.137	.000	.617
Intercept	8667.753	1	8667.753	236.010	.000	.590
Pretest	5418.388	1	5418.388	147.535	.000	.474
Strategies	1564.599	1	1564.599	42.602	.000	.206
Error	6023.093	164	36.726			
Total	610347.000	167				
Corrected Total	15728.886	166	,			

Table 7: Summary of ANCOVA on the Mean Achievement Scores ofStudents treated with JITT and PI strategies

Table 7 depicts that the difference in the relative effectiveness of JiTT and PI on the students' mean achievement scores in Financial Accounting was significant (F = 42.602, p < .001, η_p^2 = .206), with students exposed to JiTT having higher mean in achievement scores than those exposed to PI. This implies that there is significant difference in the relative effectiveness of JiTT and PI strategies on students' mean achievement scores in Financial Accounting. The null hypothesis is therefore, rejected.

Hypothesis 2

There is no significant difference in the relative effectiveness of JiTT and PI strategies on students' mean retention scores in Financial Accounting.

Source	Type III Sum	df	Mean	F	Sig.	Partial Eta
	of Squares		Square			Squared
Corrected Model	16267.062 ^a	2	8133.531	1554.393	.000	.687
Intercept	8.666	1	8.666	1.656	.000	.577
Posttest	9006.797	1	9006.797	1721.282	.000	.456
Strategies	534.690	1	534.690	102.184	.000	.404
Error	858.148	164	5.233			
Total	532582.000	167				
Corrected Total	17125.210	166				

 Table 8: Summary of ANCOVA on Mean Retention Scores of Students

 treated with JITT and PI strategies

Table 8 shows indicates significant difference (F = 102.184, p < .001, η_p^2 = .404) in the relative effectiveness of JiTT and PI strategies on the students' mean retention scores in Financial Accounting was significant, with students exposed to JiTT having higher mean retention scores than those exposed to PI. This implies that there is significant difference in the relative effectiveness of JiTT and PI strategies on students' mean retention scores in Financial Accounting. The null hypothesis is therefore, rejected.

Hypothesis 3

Significant difference does not exist in the relative effectiveness of JiTT and PI strategies on male students' mean achievement scores in Financial Accounting.

Source	Type III Sum	df	Mean	F	Sig.	Partial Eta
	of Squares		Square			Squared
Corrected Model	2183.738 ^a	2	1091.869	26.212	.000	.586
Intercept	1763.813	1	1763.813	42.343	.000	.534
Pretest	239.663	1	239.663	5.754	.022	.135
Strategies	1253.277	1	1253.277	30.087	.000	.448
Error	1541.237	37	41.655			
Total	151469.000	40				
Corrected Total	3724.975	39				

 Table 9: Summary of ANCOVA on Achievement Scores of Male Students

 taught with Accounting with JiTT and PI Strategies

Table 9 shows that the difference in the relative effectiveness of JiTT and PI on male students' mean achievement scores in Financial Accounting was significant (F = 30.087, p < .001, η_{p}^2 = .448), with male students in the JiTT group having higher mean in achievement scores than those in the PI. This implies that there is significant difference in the relative effectiveness of JiTT and PI strategies on male students' mean achievement scores in Financial Accounting. The null hypothesis is therefore, rejected.

Hypothesis 4

Significant difference does not exist in the relative effectiveness of JiTT and PI strategies on female students' mean achievement scores in Financial Accounting.

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	7853.554 ^a	2	3926.777	119.162	.000	.658
Intercept	7015.428	1	7015.428	212.890	.000	.632
Pretest	5316.011	1	5316.011	161.319	.000	.565
Strategies	699.779	1	699.779	21.235	.000	.146
Error	4086.210	124	32.953			
Total	458878.000	127				
Corrected Total	11939.764	126				

Table 10: Summary of ANCOVA on Mean Achievement Scores of FemaleStudents taught with JiTT and PI

Table 10 shows the significant difference (F = 21.235, p < .001, η_{p}^{2} = .146) in the relative effectiveness of JiTT and PI on female students' mean achievement scores in Financial Accounting, with female students in the JiTT group having higher mean in achievement scores than those in the PI group. This implies that there is significant difference in the relative effectiveness of JiTT and PI strategies on female students' mean achievement scores in Financial Accounting. The null hypothesis is therefore, rejected.

Hypothesis 5

The difference in the relative effectiveness of JiTT and PI strategies on male students' mean retention scores in Financial Accounting is zero.

Source	Type III Sur of Squares	n df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	4373.864 ^a	2	2186.932	653.947	.000	.679
Intercept	.783	1	.783	.234	.631	.545
Posttest Male	1453.331	1	1453.331	434.582	.000	.084
Strategies	96.555	1	96.555	28.872	.000	.595
Error	123.736	37	3.344			
Total	136288.000	40				
Corrected Total	4497.600	39				

Table 11: Summary of ANCOVA on Mean Retention Scores of MaleStudents taught with JiTT and PI

Table 11 shows that the difference in the relative effectiveness of JiTT and PI on male students' mean retention scores in Financial Accounting was significant (F = 28.872, p < .001, η^2_{p} = .595), with male students in the JiTT group having higher mean in retention scores than those in the PI. This shows that there is significant difference in the relative effectiveness of JiTT and PI strategies on male students' mean retention scores in Financial Accounting. The null hypothesis is therefore, rejected,

Hypothesis 6

The difference in the relative effectiveness of JiTT and PI strategies on female students' mean retention scores in Financial Accounting is zero.

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta
	-		1			Squared
Corrected	11337.803 ^a	2	5668.902	632.641	.000	.724
Model						
Intercept	13.609	1	13.609	1.519	.220	.626
Posttest Female	10817.467	1	10817.467	1207.213	.000	.566
Strategies	5.696	1	5.696	.636	.427	.363
Error	1111.126	124	8.961			
Total	396294.000	127				
Corrected Total	12448.929	126				

 Table 12: Summary of ANCOVA on Mean Retention Scores of Female

 Students treated with JiTT and PI Strategies

Table 7 shows significant difference in the relative effectiveness of JiTT and PI on female students' mean retention scores in Financial Accounting (F = .636, p< .427, η^2_{p} = .363), with female students in the JiTT group having higher mean in retention scores than the female students in the PI group. This shows that there is significant difference in the relative effectiveness of JiTT and PI strategies on female students' mean retention scores in Financial Accounting. Thus, the null hypothesis is rejected.

Hypothesis 7

There are no significant interaction effect of teaching strategy and gender on students' mean achievement scores in Financial Accounting?

Source	Type III Sum	Df	Mean	F	Sig.	Partial
	of Squares		Square			Eta
						Squared
Corrected Model	9963.857 ^a	4	2490.964	69.997	.000	.633
Intercept	7910.247	1	7910.247	222.282	.000	.578
Pretest	5418.092	1	5418.092	152.251	.000	.484
Strategies	1765.778	1	1765.778	49.619	.000	.234
Gender	63.376	1	63.376	1.781	.184	.011
Strategies *	257.994	1	257.994	7.250	.008	.043
Gender						
Error	5765.030	162	35.587			
Total	610347.000	167				
Corrected Total	15728.886	166				

Table 13: Summary of ANCOVA on Mean Achievement Scores ofInteraction Effect of Teaching Strategy and Gender.

Table 13 shows significant interaction effect (F = 7.250, p = .008, η_p^2 = .043) of teaching strategies and gender on the students' mean achievement scores in Financial Accounting. This shows that there is significant interaction effects of teaching strategies and gender on students' mean retention scores in Financial Accounting. The null hypothesis is therefore, rejected.

Hypothesis 8

There is no significant interaction effect of teaching strategy and gender on students' mean retention scores in Financial Accounting.

Source	Type III Sum	df	Mean	F	Sig.	Partial Eta
	of Squares		Square			Squared
Corrected Model	16300.976 ^a	4	4075.244	800.974	.000	.704
Intercept	14.783	1	14.783	2.906	.000	.574
Posttest	8685.342	1	8685.342	1707.07 2	.000	.468
Strategies	431.683	1	431.683	84.846	.000	.415
Gender	11.010	1	11.010	2.164	.143	.003
Strategies * Gender	6.791	1	6.791	1.335	.250	.053
Error	824.233	162	5.088			
Total	532582.000	167				
Corrected Total	17125.210	166				

Table 14: Summary of ANCOVA on MeanRetention Scores of InteractionEffect of Teaching Strategy and Gender

Table 14 shows significant effects of teaching strategies with no significant effects of gender. This shows significant interaction effect (F = 1.335, p = .250, η_p^2 = .053) of teaching strategies and gender on the students' mean retention scores in Financial Accounting. This implies that there is significant interaction effects of teaching strategies and gender on students' mean retention scores in Financial Accounting. Thus, the null hypothesis is rejected.

Summary of the Major Findings

Findings of the study are summarized as follows:

 Students exposed to JITT strategy have higher mean achievement scores in Financial Accounting than those exposed to PI. There is significant difference in the relative effectiveness of JiTT and PI strategies on students' mean achievement scores in Financial Accounting. Hence, JiTT strategy enhanced students' achievement scores in Financial Accounting when compared with PI strategy.

- 2. The mean retention scores of students exposed to JITT in Financial Accounting is higher than the mean retention scores of those exposed to PI. There is significant difference in the relative effectiveness of JiTT and PI strategies on students' mean retention scores in Financial Accounting.
- 3. Male students exposed to JITT have higher mean achievement scores than their male counterparts exposed to PI. Significant difference does not exist in the relative effectiveness of JiTT and PI strategies on male students' mean achievement scores in Financial Accounting.Hence, JiTT strategy enhanced male achievement scores in Financial Accounting more than PI strategy.
- 4. Female students exposed to JITT have higher mean achievement scores than those exposed to PI. Significant difference does not exist in the relative effectiveness of JiTT and PI strategies on female students' mean achievement scores in Financial Accounting.Hence, JiTT strategy enhanced female achievement scores more than PI strategy.
- 5. Male students exposed to JITT have higher mean retention scores than their male counterparts exposed to PI. The difference in the relative effectiveness of JiTT and PI strategies on male students' mean retention scores in Financial Accounting is zero.
- 6. Female students exposed to JITT have higher mean retention scores than those exposed to PI.The difference in the relative effectiveness of JiTT and PI strategies on female students' mean retention scores in Financial Accounting is zero.
- 7. There is significant interaction effects of teaching strategies and gender on students' mean retention scores in Financial Accounting.
- 8. There is significant interaction effects of teaching strategies and gender on students' mean retention scores in Financial Accounting.

CHAPTER FIVE

DISCUSSION, CONCLUSION AND RECOMMENDATIONS

This chapter presents discussion of findings of the study, conclusion, implications of the study, recommendations, limitations of the study and suggestions for further studies.

Discussion of Findings

Findings of the study are discussed under the variables in the purpose as follows:

Relative Effectiveness of JiTT and PI Strategies on Students' Mean Achievement scores

The findings revealed that students exposed to JITT have higher mean achievement scores in Financial Accounting than those exposed to PI. Also, there is significant difference in the relative effectiveness of JiTT and PI strategies on students' mean achievement scores in Financial Accounting.

These findings are in line with finding of Danjuma (2014)which showed a significant effect on achievement grades of students taught Elementary structural design in College of Education using JITT method compared to those taught using conventional method. Similarly, the findings are not in consonance with findings of Igbo (2004) which revealed that peer instructional strategy has positive effect in mathematics achievement.

The similarities between the above findings with the current study indicate that JITT can improve students' performance no matter the subject area

94

or geographical location. This is evident in the fact that the study in Nigeria on JITT has shown some similarities with those conducted outside the country.

Relative effectiveness of JiTT and PI strategies on Students' Retention scores.

From the study, it was found out that the mean retention scores of students exposed to JITT in Financial Accounting is higher than the mean retention scores of those exposed to PI. Again, there is significant difference in the relative effectiveness of JiTT and PI strategies on students' mean retention scores in Financial Accounting.

The above finding are in agreement with the findings of Richard (2014) which revealed that JiTT strategy increased students' retention of concepts. This finding were not in agreement with the findings of Eryilmaz (2014) which found out thatstudents taught with PI strategy were able to retain more than those with traditional teaching method. Similarly, the findings were not in line with Ouka, Aurah and Amadalo (2015) which revealed that that students retained more with PI than with conventional methods.

Relative Effectiveness of JiTT and PI Strategies on male Students' Mean Achievement scores.

Findings of the study revealed that, male students exposed to JITT have higher mean achievement scores than their male counterparts exposed to PI. Also, significant difference exist in the relative effectiveness of JiTT and PI strategies on male students' mean achievement scores in Financial Accounting.

The finding above is agreement with the findings of Danjuma (2014) which revealed showed that there was a significant difference between the mean

scores in favour of the males. This showed that the males gained more from the JiTT method compared with the females in Elementary structural design. The similarities among the findings revealed that the use JiTT strategy could be more effective in enhancing achievement scores of male in different area/disciplines.

Relative Effectiveness of JiTT and PI Strategies on Female Students' Mean Achievement scores.

From the study, it was found that female students exposed to JITT have higher mean achievement scores than those exposed to PI.Significant difference exist in the relative effectiveness of JiTT and PI strategies on female students' mean achievement scores in Financial Accounting.

These results are in line with the findings of Naboth-Odums' (2014) which revealed that the females gained more from the JiTT method compared with the males and also there was significant effect of gender on the students' mean achievement scores of students taught Business studies using JITT method. The finding is in agreement with the finding ofOuka, Aurah and Amadalo (2015) which revealed that peer instructional strategy had a marked positive impact on the female students' achievement.

Relative Effectiveness of JiTT and PI Strategies on Male Students' Mean retention scores.

Findings from the result revealed that male students exposed to JITT have higher mean retention scores than their male counterparts exposed to PI, the difference in the relative effectiveness of JiTT and PI strategies on male students' mean retention scores in Financial Accounting is not zero. This findings are not in line with the findings of Eryılmaz (2014) which revealed that male students taught with PI strategy were able to retain more than those with traditional teaching method.

Relative effectiveness of JiTT and PI strategies on female students' mean retention scores.

The study revealed that female students exposed to JITT have higher mean retention scores than those exposed to PI. Also, The difference in the relative effectiveness of JiTT and PI strategies on female students' mean retention scores in Financial Accounting was not zero.

These findings are not in consonance with the findings Ouka, Aurah and Amadalo (2015) which revealed that that female students retained more with PI than with conventional methods.

Interaction Effects of Teaching Strategy and Gender on Students' Achievement scores in Financial Accounting.

Findings revealed that there is significant interaction effects of teaching strategies and gender on students' mean retention scores in Financial Accounting. This indicated that the teaching strategy used has interaction effect on gender with the respect to students' achievement scores in Financial Accounting. This is in line with the findings of Richard (2014) which revealed that there was interaction effect of teaching methods and gender on students' achievement scores. This was because significant interaction effects existed between gender and treatment in terms of students' achievement scores. Thus, this implies that students' gender was sensitive to the treatment that was why, interaction did manifest.

Interaction Effects of Teaching Strategy and Gender on Students' Retention scores.

Findings of the study revealed that, there is significant interaction effects of teaching strategies and gender on students' mean retention scores in Financial Accounting. This indicated that the teaching strategy used has interaction effect on gender with respect to students' retention scores in Financial Accounting. This finding is in agreement with Ery1lmaz (2014) which revealed that there was interaction effect of teaching methods and gender on students' retention scores in physics. Thus, this implies that students' gender was sensitive to the treatment that was why, interaction did manifest.

Conclusion

Based on the findings of this study, it is concluded that JiTT strategy was more effective in improving students' achievement scores and retention in Financial Accounting than PI strategy. Hence, it could be used in the teaching and learning of Financial Accounting in College of Education to enhance academic achievement and retention of accounting knowledge and practices. This is because, JiTT strategy encourages increase in classroom interactivity; provision of ongoing formative assessment to students; increase in students' success as measured by course retention rates; improvement in class preparation; improvement in student' study habits and increase in students' cognitive gains. There was significant interaction effects of teaching strategies and gender on students' mean achievement and retention in Financial Accounting.

Implications of the Study

The findings of this study have some implications for education. The findings revealed that students taught Financial Accounting using JiTT strategy performed better than those taught using PI strategy. This implied that involving students' participation through the use of JiTT strategy appears to be more effective teaching strategy compared to PI strategy. It therefore becomes pertinent that accounting teachers at College of Education level should adopt JiTT in teaching of Financial Accounting.

It was also found out that JiTT strategy was more effective in enhancing students' retention scores when compared with PI strategy. This implies that JiTT strategy foster retention scores when used to teaching Financial Accounting. It is therefore imperative that accounting teachers be equipped with the necessary competencies needed for effective use of JiTT strategy in the classrooms so as to enhance students' retention of concepts in Financial Accounting.

Recommendations

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

- 1. Accounting teachers at College of Education should formally adopt JiTT strategy in order to improve students' achievement scores and retention.
- Accounting students should be encouraged to use JiTT in the learning of Financial Accounting since it enhances achievement scores and retention.

- 3. School administration should organize several workshops and seminars for accounting teachers on JITT strategy in order to equip them with competencies needed in the use of JiTT strategy for teaching accounting.
- 4. Curriculum planners should incorporate JiTT as a strategy in the teaching and learning accounting at College of Education level.

Suggestions for Further Research

Further studies could be carried out in the following areas:

- This study was carried out in Colleges of Education in Anambra State and should be replicated in other states of the federation
- 2. This study was limited to the teaching and learning of financial accounting, similar studies should be conducted in other business subjects such as commerce, office practice, keyboarding among others.
- 3. A replica of this study should be conducted in the universities in Nigeria.

REFERENCES

- Abbas, M.G. & Habu, G. (2014). Effective of gender-related differences in achievement scores and retention on secondary school students taught geometry using problem solving approach. *Journal of Educational Social Sciences*, 1(2), 484 489.
- Abdullahi, O. E. (2013). Interrelationship between personal factor and achievement scores in mathematics in Ebira secondary school students in Kogi State. *An international Journal of Psychology*, 5(1), 154 -155.
- Abubakar, A.B. & Adegboyega, B. I. (2012). Age and gender as determinants of achievement scores in colleges mathematics. *Asian Journal of Natural and Applied Sciences*, 1(2), 121 127
- Abubakar, A.B. & Arshad, M.Y. (2015). Self-directed learning and skills of problem-based learning: A case of Nigerian secondary schools chemistry students. *International Journal of Education Studies*, 8(12), 70-79.
- Adebayo, A. S. & Judith, K. (2014). Comparative study of effectiveness of cooperative learning strategy and traditional instructional method in physics classroom: A case study of Chibote girls secondary school, Kitwe district, Zambia. *European Journal of Educational Sciences*, 1(1), 30-41.
- Adebiyi, K. (2011). Accounting and information technology: A handbook for accountants and IT users. Ibadan: Polygraphics Ventures Ltd.
- Adeleke, M. S., Binuomote, M. O.& Adeyinka, M. S. (2013). Determinants of students' academic performance in Financial Accounting among senior secondary school leavers in Oyo State. *International Journal of Business* and Management Invention, 2(5), 48-59
- Afemike, M.B. (2013). E-learning in Nigerian higher education: The perceived role of academic libraries Retrieved from *http://202.44.43.230/prachyanun/iec2011/document/4_Day%202/F2_1.p df*.
- Agara, I.G. (2015). *Management accounting: Effective management tool*. Lagos: ETI-KIND and Company (Nig.) Ltd.

- Aghoh, C.I. (2017). Effects of computer assisted instructional techniques on students' achievement in Financial Accounting in College of Education in south east Nigeria. *Research Journal of Finance and Accounting*, 6(20), 234-236.
- Aina,J.K & Keith, L.O. (2015). Teaching method in science: The need for a paradigm shift to peer instruction in Nigeria schools. *International Journal of Academic Research and Reflection 3*(6).
- Akpan, U.U. (2016). Winning more students for the sciences: The factors of attitude, sex, intelligence, personality, and type of school. In P.A. Enianyeju (Ed.) New Direction in Science, Technology and Mathematics Education for the 90s: 28th Annual STAN Conference Proceedings. Lagos: Akin Bolutifu Printers.
- Ama, G.A.N. (2017). *Modern Financial Accounting: Theories and practice*. Aba: Amasons Pub. Ventures.
- Asaolu, A. (2015). *Financial Accounting for schools and colleges*. Abuja: Spectrum Books Ltd.
- Atieh,S.H.(2013).Student perceptions of the causes of low performance in principle of accounting: A case study in Saudi Arabia. *JKAU: Economics and Administration*, 10, 35-50
- Ayomike, C. S. (2014). Comparative effectiveness of three teaching methodson students psychomotor performance in brick/block-laying and concreting in Delta State technical colleges. (An Unpublished Dissertation). Nnamdi Azikiwe University, Awka.
- Azih, N & Nwosu, B. O. (2011). Effects of instructional scaffolding on the achievement of male and female students in Financial Accounting in secondary schools in Abakaliki Urban of Ebonyi State, Nigeria." *Current Research Journal of Social Sciences*, 3 (2) 66 - 70.
- Balasubramanian, K., Jaykumar, V., & Fukey, L. N. (2014). Student preference towards the use of edmodo as a learning platform to create responsible learning environment. *Procedia-Social and Behavioral Sciences*, 144, 416-422.
- Bigelow, J., Butchart, S. & Handfield, T. (n.d) 'Peer instruction in the humanities project' (Online) Monash University. Available at *http://arts.monash.edu.au/philosophy/peerinstruction/database/index.php*

- Bilesanmia, D & Awodem, N. (2010). Better learning through structured teaching: A framework for the gradual release of responsibility. Alexandria, Virginia: ASCD.
- Birke, I. (2014). Changing minds: towards gender equality in science? In O. Hardings (ed). *Perspective on gender and science*, 184-202. Philadelphia: The Farmer press, Czermark.
- Brame. C.N. (2019). Just-in-time teaching. Retrieved on 27 July, 2019 from http://cft,vanderbilt.edu/guidance-sub-pages/just-in-ime.teaching-jitt
- Camp, M.E., Middendorf, J. and Sullivan, C.S (2010). Using just-in-time teaching to motivate student learning" in just-in-time teaching: across the disciplines, across the academy, Simkins, and Maier (eds.), Sterling, VA: Stylus Publishing. ISBN 978-1-57922-293-2
- Cassery, P. (2011). Helping able young women take mathematics and science seriously in school. In N. Colangelo and R. Zaffann (Eds.). *New voices in Counseling the Gifted Dubuque*, IOWA: Kendall hunt.
- Chibabi, A. A., Umoru, S. E., Onah, D. O. & Itodo, E. E. (2018).Effect of laboratory method on students' achievement and retention in senior secondary schools biology in Kogi east senatorial zone. *Journal of Research & Method in Education*, 8 (6), 31-39
- Chidolue, M.E. (2013). An investigation in to the indifference of girls towards the study of physical science in Nigeria secondary school. *Journal of Science Teachers Association of Nigeria*, 21(2), 106-116.
- Cook, S.B.; Scugs, T.E.; Mastrpier, M. A. & Lasto, G. C. (2011). *Journal of Special Education*, 19(14) 483-492.
- Cookman, T. D. (2010). *Quasi-experimentation: Design and analysis issues for field settings*. Chicago, IL: Rand- McNally College Publishing.
- Crouch, C. H., & Mazur, E. (2012). Peer instruction: Ten years of experience and results. *American Journal of Physics*, 69(9), 970–977.
- Crouch, C. H., Fagen, A., Callan, J. P., & Mazur, E. (2014). Classroom demonstrations: Learning tools or entertainment? *American Journal of Physics*, 72(6), 835–838.

- Crouch, C. H., Watkins, J., Fagen, A., & Mazur, E. (2017). Peer instruction: Engaging students one-on-one, all at once. In E. F. Redish & P. Cooney (Eds.), *Reviews in Physics Education Research*, 1(1), 203-208.
- Danjuma, B.B. (2014). Effect of just-in-time teaching method on students' achievement in elementary structural design in college of education in North Central Nigeria, *International Conference on Education*, *Proceedings Development & Innovation*, 3(5), 65-69.
- Daramola, S.O. (2013). The influence of location and sex differences on the knowledge of basic physics possessed by entering from ill students in Kwara State Secondary School. *Journal of Teachers Association of Nigeria*,221 (2), 106-112.
- Darcy, M., & Henderson, C. (2010). Pedagogical practices and instructional change of physics faculty. *American Journal of Physics*, 78(10), 1056-1063.
- Dufresne, J.R., Gerace, J.W., Leonard, W., Mestre, J.P & Wenk, L. (2010). Classroom talk: A classroom communication system for active learning. Available on *http://trace.tennesse.eduedu/uk*
- Dweck, G. (2014). Attribution Theory. In P. Mussen & M. Hetherington (Eds.), *Child Development Handwork*. New York: Wiley.
- Ekwere, A.B. (2015). Contemporary accounting. Abuja: AFLON Ltd.
- Ekmekçi, E. (2016). Integrating Edmodo into Foreign Language Classes as an Assessment Tool. *Participatory Educational Research (PER)*, 1, 1-11.
- Ellis, A. B., Cappellari, A., Lisensky, G. C., Lorenz, J. K., Meeker, K., Moore, D., Campbell, K., Billmann, J., & Rickert, K. (2010). Concept tests. Available on http://www. jce.divched.org /JCEDLib/QBan k/collection/Concept tests/
- Elliot, S. Katochwil, T.R. & Travars, J.F. (2011). *Educational psychology, effective learning* (3rd ed). New York Mc Graw-Hill.
- Enu, J, Agyman, O. K., & NkumD. (2015). Factors influencing students' mathematics performance in some selected College of Education in Ghana. *International Journal of Education Learning and Development*, 3(3), 68-74.

Eryilmaz, H. (2014). The effect of peer instructional strategy on high school students' achievement and attitudes towards physics. *Electronic Journal of Social Sciences*, 10(37): 170-181.

Essien, P.B. (2014). Accounting Foundation. (2nded.). Lagos: Cherubion Ltd.

- Eze, M. I. (2014). Comparative of peer tutoring and memorization strategies on students' achievement in manufacturers' final accounts in College of Education. (An Unpublished Master's Thesis). University of Nigeria, Nsukka.
- Ezeagba, C. E. (2014). Problems in the teaching and learning of accounting as a vocational subject in Nigeria secondary schools. *International Journal of Science and Technology*, 3(2), 208-226.
- Ezenwosu, S. U & Nworgu, L. N (2013). Efficacy of peer tutoring and gender on students' achievement in Biology. *International Journal of Scientific Research*, 4(12), 944 950.
- Eze,T.I. & Osuyi, S.O.(2018). Effect of problem-based teaching method on student students' academic performance in electrical installation and maintenance works in technical#nbfcl colleges in Edo State. *International Journal of Development and Sustainability*,7(2), 666-678
- Eze.T.I., Ezenwafor,J.I. & Obidile, I.J. (2016). Effects of problem-based teaching method on students' academic performance and retention in Financial Accounting in technical colleges in Anambra State. Scholars Journal of Arts, Humanities and Social Sciences, 4(6A), 634-639
- Fagen, A., Crouch, C. H., and Mazur, E. (2012). *Peer instruction: results from a range of classrooms*. The Physics Teacher, 206-209.
- Fitz-Gibbon, C.F. (2010). Success and failure in JItt experiments. Explorations in peer tutoring, England: Blackwell.
- Gambari, A.I.; Bello, R.M.; Agboola, A.K. & Adeoye, I.O. (2016). Impact of Just-in-Time Teaching strategy on students' achievement and retention of mammalian skeletal system in Minna, Niger State, Nigeria. IJABR, 7(2), 193–207
- Gambari, I. A., & Yusuf, M. O. (2014) Effects of three cooperative learning strategies on the performance of secondary school students in physics. Bulgarian Journal of Science Education, 23(3), 1-23.

- Gana, C. S. (2013). "Effects of computer assisted instruction with animation on achievement and retention of students of College of Education in quantum physics." (Unpublished Ph.D. Thesis). University of Nigeria, Nsukka.
- Gavrin, A., Watt, J. X., Marrs, K., & Blake, R. E., (2014). Just-in-Time Teaching (JiTT): Using the Web to Enhance Classroom Learning. *Computers in Education Journal*, 14. 51-60.
- Godpower-Echie, G. & Ihenko, S. (2017). Influence of gender on interest and achievement scores of students in integrated science in Obio Akpor Local Government Area of Rivers State. *European Scientific Journal*, *13*(10), 23-28.
- Gok, T. (2012). The Impact of peer instruction on college students' beliefs about physics and conceptual understanding of electricity and magnetism. International *Journal of Science and Mathematics Education*, *10*(2), 417-436.
- Gok, T., & Gok, O. (2016). Peer instruction in chemistry education: Assessment of students' learning strategies, conceptual learning, and problem solving. *Asia-Pacific Forum on Science Learning and Teaching*, 17(1), 1-21.
- Gordon, R. (2010). The Tiesthabind: The price of pursuing the male mystique; Washington, D. C. *Peer project*.
- Green, P. (2012). *Peer instruction for astronomy*. Upper Saddle River: Prentice Hal.
- Guertin, L. (2014). Just-in-time teaching (JITT): Using the web to enhance classroom learning. *Computers in Education Journal*, 14 (2), 51-59.
- Guertin, L., Zappe, S., & Kim, H. (2013). Just-in-time teaching exercises to engage students in an introductory-level dinosaur course. *Journal of Science Education and Technology*, 16(6), 507-514
- Guertin, L.A (2010), Using just-in-time teaching in the geosciences in just-intime teaching: across the disciplines, across the academy, Simkins, and Maier (Eds.), Sterling, VA: Stylus Publishing. ISBN 978-1-57922-293-2
- Herman, S. (2012). Interest: A unique motivational variable. *Educational Research Review*, 1(2), 69-82.

- Hossain, A., & Tarmizi, R. A. (2013). Effects of cooperative learning on students' achievement and attitudes in secondary mathematics. *Procedia-Social and Behavioral Sciences*, 93, 473-477.
- Hughes-Hallett, D., Gleason, A. M., McCallum, W. G., Flath, D. E., Lock, P. F., Tucker, T. W., Lomen, D. O., Lovelock, D., Mumford, D., Osgood, B. G., Quinney, D., Rhea, K., & Tecosky-Feldman, J. (2014). *Concept tests*. New York: John Wiley & Sons. Junkin, W. Beyond Question. Available from http://www.erskine.edu/bq/
- Igbo, J.N. (2004). Effect of peer tutoring on the mathematics achievement of *learning disabled children*. (Unpublished Doctoral Thesis). University of Nigeria, Nsukka.
- Igboke, S.A. (2012). *Fundamentals of Financial Accounting*. Enugu: Cheston Agency Ltd.
- Isiugo-Abanihe, M. Ifeoma, L; and Tandi, I. (2010). Evaluation of the methodology aspect of science teacher education curriculum in Nigeria. *Pakistan Journal of Social Sciences*, 17 (2) 170-176.
- Iwu,P.C. (2016). Integrating new technologies for improving the business education curriculum in tertiary institutions in Imo State, Nigerian Journal of Business Education, 3(1), 91-98
- Jensen, J. L; Kummer, L. and Godoy, K. M. (2015). Effects of collaboration and inquiry on reasoning and achievement in biology. Grin Verlag GmbH [on line]. Available: file/effects – of – Collaboration – and – inquiry – on – reasoning – and – achievement Retrieved 04-03-2012.
- Jimoh, A. G. (2014). Effect of cooperative learning method on achievement scores of cost accounting students in College of Education in Ogun State. (Unpublished M.Ed. Thesis). University of Nigeria.
- Johnson, D.W.; Johnson, R.T. & Smith, S.A (2011). *Learning together and alone: Cooperative, competitive and individualistic learning.* Boston: Allyn & Bacon.
- Landis, C. R., Ellis, A. B., Lisensky, G. C., Lorenz, J. K., Meeker, K., & Wamser, C. C. (2001). *Chemistry Concept tests: A pathway to interactive classrooms*. Upper Saddle River: Prentice Hall.

- Lasry, N., Charles, E., & Whittaker, C. (2016). Effective variations of peer instruction: The effects of peer discussions, committing to an answer, and reaching a consensus. *American Journal of Physics*, 84(8), 639-645.
- Lasry, N., Watkins, J., Mazur, E., & Ibrahim, A. (2013). Response times to conceptual questions. *American Journal of Physics*, 81(9), 703-706.
- Laurillard, D. (2010). *Rethinking university teaching: A framework for the effective use of educational technology*. London: Routledge.
- Lezin, (2015). With a little help from my friends: peer education in teen pregnancy prevention. Theories and approaches; ETR Associates: California. *Retrieved from www.etr.org/ recap/ theories/pee/education/-35k*.
- Longe, O.A. & Kazeem, R.A. (2014). *Essential Financial Accounting*. Lagos: Tonad Pub. Ltd.
- Marrs, K.A & Novak G. (2014). Just-in-time teaching in biology: creating an active learner classroom using the internet. *Cell Biology Education*, 3, 49-61.
- Marrs, K.A. Blake, R., & Gavrin, A. (2013). Use of warm up exercises in justin-time teaching: Determining students' prior knowledge and misconceptions in biology, chemistry, and physics. *Journal of College of Science Teaching*, 42-47.
- Mazur, E. (2014). *Peer instruction: a user's manual*. Prentice Hall series in educational innovation, Prentice Hall, Upper Saddle River, N.J
- Mazur, E., & Watkins, J. (2010). Just-in-time teaching and peer instruction. In S. P. Simkins & M. H. Maier (Eds.), *Just-in-time teaching: Across the disciplines, across the academy* (pp. 39-62). Sterling, VA: Stylus Publishing.
- Mbugua, Z.K., Kibet, K., Muthaa, G.M. and Nkonke, G.R. (2012) Factors Contributing to Students Poor Performance in Mathematics at Kenya Certificate of Secondary Education in Kenya: A Case of Baringo County, Kenya. *American International Journal of Contemporary Research*, 2, 87-91.
- Menthorpe, C. A. (2012). Men's women's science or science? Education. *Studies in Science Education*, 9 (2), 65-80.
- Miles, R. (2015). Tutorial instruction in science education. *Cypriot Journal of Educational Science*, 10(2), 168-179.
- Mokhtar, F. A. (2016). Rethinking Conventional Teaching in Language Learning and Proposing Edmodo as Intervention: A *Qualitative Analysis*. *Malaysian Online Journal of Educational Technology*,4(2), 22-37.
- Naboth-Odums, A. (2014). Critical Assessment of Just-In-Time Teaching Method as Against Conventional Teaching Methods on Academic Performance of Business Studies Students. *Journal of Educational and Social Research*,4(5), 34-38.
- Novak, G. & Middendorf, J. (2011) Just-in-time teaching. In: volume iv what works, what matters, what lasts. *Project Kaleidoscope*.
- Novak, G. M. (2014). *Just in Time Teaching*. Retrieved March 10, 2017 from <u>http://JiTT.org</u>.
- Novak, G.M & Patterson, E.T. (2010). The best of both worlds: www enhanced in-class instruction. *Paper presented at IASTED International Conference on Computers and Advanced Technology in Education*, May 24-27, Cancun, Mexico.
- Novak, G.M. (2011). Just-in-time teaching: Blending active Learning with web technology, *Prentice Hall Series in Educational Innovation*. Upper Saddle River, NJ: Prentice Hall; 188.
- Nworgu, B.G. (2015). *Educational research: Basic issues and methodology*. Ibadan: Wisdom publisher Ltd.
- Obi, C.A. (2015). *Methodology in business education*. Enugu: Oktek (Publishers) Nig. Ltd.
- Obidile, I. J. (2017). Effects of problem-based teaching method on students' academic performance and retention in Accounting in technical colleges in Anambra State. (Unpublished doctoral dissertation) Nnamdi Azikiwe University, Awka.
- Obidile, I.J., Amobi, S.C., Uzokwe, H.E & Akuezilo, J.A (2017). Percieved factor influencing academic performance of students in accounting in secondary schools. *Journal of Humanities and Social Science*, 22(2), 96-99.

- Okoli, B. E and Nwosu, B. O. (2010). "The Effects of the Integrated Instructional Model on Students' Achievement in Advanced Financial Accounting in Nigerian Universities." Asian Journal of Business Management, 2 (3), 73-76.
- Okoli, J.N & Egbunonu, R.N. (2012). Effects of blending approach on Nigeria senior secondary school students' achievement in biology. *International Journal of Education Research and Development*, 4(1), 91-97.
- Okolocha, C.C & Okeke, V.N. (2018). Effect of peer tutoring on achievement scores of low achievers in keyboarding in secondary schools in Anambra State. *International Journal of Scientific and International Publication*,8(8), 45-49.
- Oladejo, M.A, Olosunde, G.R, Ojebisi, A.O & Isola, O.M. (2011). Instructional materials and students' achievement scores in physics: some policy implications. *European Journal of Humanities and Social Sciences*, 2(1), 112-126.
- Olarinoye,T.T. (2015). Comparative effects of cooperative and guided discovery methods on secondary school students' performance in accounting in Plateau State in Nigeria. (Unpublished Master Thesis). Ahmadu Bello University, Zaria.
- Olorode, J.J. & Jimoh, A. G (2016). Effectiveness of guided discovery learning strategy and gender sensitivity on students' achievement scores in Financial Accounting in College of Education. *International Journal of Academic Research in Education and Review*, 4(6), 182-189.
- Oludipe, D.I (2012). Gender difference in Nigerian junior secondary students' achievement scores in basic science. *Journal of Education and Social Research*, 2(1), 93-99.
- Omotayo, B. K. (2014). Teachers' characteristics and students' performance level in senior secondary school Financial Accounting. *Journal of Empirical Studies*, 1(2), 48-53.
- Orjika, M. O. (2012). Effect of computer assisted instruction packages on secondary school students' achievement and interest in biology." (Unpublished M.Ed. Thesis), Nnamdi Azikiwe University, Awka.
- Ouko,S., Aurah, C., & Amadalo, M. (2015). Peer instruction and secondary school student achievement in vectors. *Journal of Education and Practice*, 6(27), 100-115.

- Oviawe, J. I. (2010).*Differential effects of three instructional methods on students' performance in building technology in polytechnics in Nigeria.* (Unpublished Thesis), University of Nigeria Nsukka.
- Oviawe, J.I, Ezeji, S.C.O.A & Uwameiye, I.O. (2015). Comparative effects of three instructional methods on students' performance in building technology in Nigeria Polytechnics. *European Scientific Journal*, 2(12).
- Rao, S., & DiCarlo, S. (2010). Peer instruction improves performance on quizzes. Advances in Physiology Education, 24(1), 51–55.
- Richard S. (2014). The impact of a jitt program on student achievement in chemistry in an urban high school. *Journal of Science: Section VII Science Education* (http://www.findarticles.com/plarticles/mi-ga4015//aina377003 /pg-2)Georgia Academy of Science. ProQuest information and Learning Company.
- Rosenberg, J. L., Lorenzo, M., & Mazur, E. (2011). Peer instruction: making science engaging. In J. J. Mintzes & W. H. Leonard (Eds.), *Handbook of college science teaching*. Arlington, Virginia: National Science Teaches Association. Retrieved from <u>http://scholar</u>. google.com/scholar?hl= en& btnG=Search&q=intitle:Peer+Instruction+:+Making+Science+Engaging0
- Safo, D. A., Ezenwa, V.I. & Wushishi, D.I. (2013). Effects of Computer Assisted Instructional Package on Junior Secondary School Students Achievement and Retention in Geometry in Minna Niger State, Nigeria. *International Journal of Humanities and Social Science*, 4(5), 45-50.
- Salami, L.I. (2012). The development of assertive behaviour in the girl child as a means of surviving in a hostel Environment. *Multidisciplinary Journal* of Research Development, 1(1), 102 106.
- Schmuck, M. C. (2012). Using just-in-time teaching and peer instruction in a residency program's core curriculum: Enhancing satisfaction, engagement, and retention. Academic Medicine, 90 (3), 384-391.
- Simkins, S, & Maier, M. (2004). Using just-in-time teaching techniques in the principles of economics course. *Social Science Computer Review*, 22, 444-456.
- Sokoloff, D. & Thornton, R. (2010). Using interactive learning demonstrations to cre- ate an active learning environment. *AIP Conference Proceedings*, 399, 1061–1074.

- Steer, D. & McConnell, D. (2011). Starting point: teaching entry level geoscience; concept test examples. (Online) Carlton College. Available http://Serc.carleton.edu/introgeo/interactive/ctestexm.html
- Talatu, M. (2014). Assessment of relative effectiveness of cooperative learning and problem-solving strategies on students' performance in business studies Kaduna State. (Unpublished Thesis), Ahmadu Bello University, Zaria
- Terrell, M. (2015). Good Questions Project. Retrieved May, 2008, from http://www.math.cornell.edu/~Good Questions/.
- Terrell, M., Connelly, R., Henderson, D. & Strichartz, R. (2012). 'Good Questions Project'. [Online] Cornell University. Available at http://www.math.cornell.edu/~GoodQuestions/ (accessed 23 October 2015).
- Tshabalala, T. & Ncube, A. C. (2013). Causes of Poor Performance of Ordinary Level PupilsIn Mathematics in Rural Secondary Schools in Nkayi District: Learner's Attritions. Retrieved on 19th October, 2014 from http://novaexplore.com/NJMBS/wpcontent/uploads/sites/4/2014/02/N.JM BS_.4-14.pd
- Umar, R.T. (2017). Comparative study of direct and cooperative method of teaching Financial Accounting in federal College of Education, north, east, geo-0political zone, Nigeria. *KIU Journal of Social Science*. 3(1), 257-262
- Unongo, J. (2015). Comparative effects of dialogic teaching and coaching instructional strategies on students' performance, interest and retention motor vehicle mechanic works in technical colleges in Benue State." (Unpublished Ph.D Thesis), University of Nigeria, Nsukka
- Vygotsky, I.S. (1978). *Mind in society. The development of higher psychological processes.* In: Cole, M., John-Steiner, V., Scriber, S. & Souberman, E. (Eds.). Cambridge M.A: MIT Press.
- Watkins, J & Mazur, E. (2010). Using JiTT with peer instruction. In: Simkins, Scott.; Maier, Mark (eds.). Just in time teaching across the disciplines. Sterling, VA: Stylus Publishing, Sterling, VA., 39-62.

- Watkins, J &Mazur, E. (2010). Using JiTT with peer instruction. In: Simkins, Scott.; MAIER, Mark (Eds.). Just in time teaching across the disciplines. Sterling, VA: Stylus Publishing, Sterling, VA. 39-62.
- Wattace, L., Pearman, L. C., Hach, B., & Hurst, D. (2014). A multi-classroom report on the value of peer instruction. In proceedings of the 16th Annual Joint Conference on Innovation and Technology in Computer Science Education, June 27-29, Darmstadt, Germany.
- Wiggins, C., & Matgue, N. D. (2011). The construction of different classroom norms during peer instruction: Students perceive differences. Physical *Review Special Topics - Physics Education Research*, 6(2), 1-22.
- Women Major Group (2013. Gender equality, women's rights and women's priorities: Recommendations for the proposed Sustainable Development Goals (SDGs) and the post-2015 Development Agenda. *UN report*
- World Development Report (2012). *Gender Equality and Development*. Washington: Program Department
- Wynn, C.T., Mosholder, R. S. & Larsen, C. A. (2014). Measuring the effects of problem-based learning and development of post formal thing skills and engagement of first year learning community students. *Learning Community Research and Practice*. 2(2), 456-461.

STUDENTS ACHIEVEMENT IN FINANCIAL ACCOUNTING EXAMINATIONS IN FEDERAL COLLEGE OF EDUCATION (TECHNICAL), UMUNZE FROM 2015-2018 BEFORE MODERATION

S/N	YEAR	TOTAL NUMBER OF STUDENTS	Α	B	C	D	E	F
1.	2015/2016	161	NIL	NIL	21	24	35	81
2.	2016/2017	117	NIL	7	14	14	26	56
3.	2017/2018	160	NIL	5	15	24	25	85

Distribution of Population by Schools and Gender

Total	40	127	167
Nwafor Orizu College of Education, Nsugbe (PI group)	10	37	47
Federal College of Education (T), Umunze (JiTT group)	30	90	120
	Male	Female	
Name of Institution	Number of Student		Total

Source (School Records, 2018)

Content Area	Remembe r & Understan d (40%)	Apply & Analyse (30%)	Evaluate & Create (30%)	Total No of Test items (100%)
Manufacturing Accounts (35%).	5	5	4	14
Trading, Profit and loss account of a Ltd company (35%)	7	6	5	18
Balance Sheet (30%)	3	3	2	8
Total Number of items (100%)	15	14	11	40

Test Blueprint for Construction of FAAT

The table of specification (test blue print) on Financial Accounting. Remember and understand cover 40% and 30% while 30% covered the higher levels of application, analysis, synthesis and evaluation of the cognitive domain. This can be seen from the modification of the Bloom's taxonomy of stating educational objectives as shown in the table above.

FINANCIAL ACCOUNTING ACHIEVEMENT TEST (FAAT)

Demographic Data:							
School:							
Sex: Male Femal	le						
Instruction: Answer all questions							
Each question is accompanied by options. Choose the most appropriate option and encircle the corresponding letter against the question number on your question paper.							
1.A financial statement that shows overhead of organization is known a	1.A financial statement that shows cost of direct material and labour as well as product overhead of organization is known as						
2. Cost of transporting goods into the	ne busines	ss (compar	ny) is refers to as				
3. Direct cost of production is made	up of the	following	5				
4. Mention one of the features of ma	anufacturi	ng					
5. Returns inwards are normally							
6. Bad debt is treated in profit and lo	oss as						
7 one of the trading account	nt item.						
8. The raw material that has not been	n complet	tely proces	ssed into finished goods is known as				
9. Discount received is treated as							
10. Carriage outwards is treated as							
Use the following information to answer questions 11 – 16							
Preparation of Manufacturing Accounts							
The following shows the figures exercise ended 31 st December, 2016	xtracted f	from the b	books of Moses Nig Ltd for the year				
Stock of Finished Good:	January	1^{st}	50,640				
Stock of Raw Materials:	Decemb January	per 31^{st} 1^{st}	71,380 32,160				

December 31st 29,640Purchases of Raw Materials145,600Manufacturing Wages52,860

Carriage inwards on Raw materials 7,000 You are required to prepare the manufacturing account. 11. What is raw materials available for use 291,800 12. Find the cost of production ? 348,00 14. Find the cost of goods available for use? 408,800 13. Find the cost of goods available for sale? 408,800 15. Find the cost of goods available for sale? 408,800 15. Find the cost of goods available for sale? 408,800 16. What is the gross profit?377,200 17. Discount allowed is debited to profit and loss account (d) none is correct 18. Bad debt is treated in profit and loss as 19. Creditors are recorded as in balance sheet. 20. The asset that cannot be converted into cash within one accounting period is 21. Those liabilities that cannot be settled within one accounting year are referred to as 22. Assets are divided into two namely and 23 24. Premises belong which type of asset 25. The main purpose of a trading account is to determine 25. The essence of preparing a profit and loss account is to determine 28. Closing stock refers to 29. Wages and salaries are to an organization 30. Rent received are added to	Factory Insurance Direct Expenses Depreciation: Factory Equipr Stock of Work in Progress: Factory Fuel	nent January 1 st December 31 st		6,538 12,500 16,500 17,481 13,312 43,800			
You are required to prepare the manufacturing account. 11. What is raw materials available for use 291,800 12. Find the amount of raw material consumed 241,00 13. Find the cost of goods available for sale? 408,800 15. Find the cost of goods sold? 358,800 16. What is the gross profit?377,200 17.Discount allowed is debited to profit and loss account (d) none is correct. 18. Bad debt is treated in profit and loss as 19. Creditors are recorded as in balance sheet. 20. The asset that cannot be converted into cash within one accounting period is 21. Those liabilities that cannot be settled within one accounting year are referred to as 22. Assets are divided into two namely and 23 23. The main purpose of a trading account is to determine 24. Premises belong which type of asset 25. The main purpose of a trading account is to determine 26. The essence of preparing a profit and loss account is to determine 29. Wages and salaries are	Carriage inwards on Raw ma	terials		7,000			
11. What is raw materials available for use 291,800 12. Find the amount of raw material consumed 241,00 13. Find the cost of production? 348,00 14. Find the cost of goods sold? 358,800 15. Find the ext of goods sold? 358,800 16. What is the gross profit?377,200 17.Discount allowed is debited to profit and loss account (d) none is correct 18. Bad debt is treated in profit and loss as 19. Creditors are recorded as in balance sheet. 20. The asset that cannot be converted into cash within one accounting period is 21. Those liabilities that cannot be settled within one accounting year are referred to as 22. Assets are divided into two namely	You are required to prepare the	he manufacturing acco	ount.				
 17.Discount allowed is debited to profit and loss account (d) none is correct 18. Bad debt is treated in profit and loss as 19. Creditors are recorded as in balance sheet. 20. The asset that cannot be converted into cash within one accounting period is 21. Those liabilities that cannot be settled within one accounting year are referred to as 22. Assets are divided into two namelyand 23 24. Premises belong which type of asset 25. The main purpose of a trading account is to determine 26. The essence of preparing a profit and loss account is to determine 27. Total sales less sales returns equal to 28. Closing stock refers to	11. What is raw materials12. Find the amount of ra13. Find the cost of produ14. Find the cost of goods15. Find the cost of goods16. What is the gross profi	 11. What is raw materials available for use 291,800 12. Find the amount of raw material consumed 241,00 13. Find the cost of production? 348,00 14. Find the cost of goods available for sale? 408,800 15. Find the cost of goods sold? 358,800 16. What is the gross profit?377,200 					
 18. Bad debt is treated in profit and loss as 19. Creditors are recorded as in balance sheet. 20. The asset that cannot be converted into cash within one accounting period is 21. Those liabilities that cannot be settled within one accounting year are referred to as 22. Assets are divided into two namely and 23 23. Assets are divided into two namely and 23 24. Premises belong which type of asset 25. The main purpose of a trading account is to determine 26. The essence of preparing a profit and loss account is to determine 27. Total sales less sales returns equal to 28. Closing stock refers to	17.Discount allowed is debite	ed to profit an	d loss ac	count (d) none is correct			
 19. Creditors are recorded as in balance sheet. 20. The asset that cannot be converted into cash within one accounting period is 21. Those liabilities that cannot be settled within one accounting year are referred to as 22. Assets are divided into two namelyand 23 23. Assets are divided into two namelyand 23 24. Premises belong which type of assetand 23 25. The main purpose of a trading account is to determine 26. The essence of preparing a profit and loss account is to determine 27. Total sales less sales returns equal to 28. Closing stock refers to	18. Bad debt is treated in pro-	fit and loss as					
 20. The asset that cannot be converted into cash within one accounting period is 21. Those liabilities that cannot be settled within one accounting year are referred to as 22. Assets are divided into two namely and 23 23. Assets belong which type of asset 25. The main purpose of a trading account is to determine 26. The essence of preparing a profit and loss account is to determine 27. Total sales less sales returns equal to 28. Closing stock refers to 29. Wages and salaries are to an organization 30. Rent received are added to	19. Creditors are recorded as	in balance	e sheet.				
 21. Those liabilities that cannot be settled within one accounting year are referred to as 22. Assets are divided into two namely and 23 23. Assets belong which type of asset 25. The main purpose of a trading account is to determine 26. The essence of preparing a profit and loss account is to determine 27. Total sales less sales returns equal to 28. Closing stock refers to	20. The asset that cannot be c	converted into cash wi	thin one	accounting period is			
 22. Assets are divided into two namely and 23 24. Premises belong which type of asset 25. The main purpose of a trading account is to determine 26. The essence of preparing a profit and loss account is to determine 27. Total sales less sales returns equal to 28. Closing stock refers to 29. Wages and salaries are to an organization 30. Rent received are added to 31. Loan is an example of 32. Debenture is an example of 33. Assets = Capital + 34. Capital = Asset 	21. Those liabilities that cann	not be settled within or	ne accou	nting year are referred to as			
 24. Premises belong which type of asset 25. The main purpose of a trading account is to determine 26. The essence of preparing a profit and loss account is to determine 27. Total sales less sales returns equal to 28. Closing stock refers to 29. Wages and salaries are to an organization 30. Rent received are added to 31. Loan is an example of 32. Debenture is an example of 33. Assets = Capital + 34. Capital = Asset 	22. Assets are divided into tw	vo namely	and 23				
 25. The main purpose of a trading account is to determine 26. The essence of preparing a profit and loss account is to determine 27. Total sales less sales returns equal to 28. Closing stock refers to 29. Wages and salaries are to an organization 30. Rent received are added to 31. Loan is an example of 32. Debenture is an example of 33. Assets = Capital + 34. Capital = Asset 	24. Premises belong which ty	pe of asset					
 26. The essence of preparing a profit and loss account is to determine 27. Total sales less sales returns equal to 28. Closing stock refers to 29. Wages and salaries are to an organization 30. Rent received are added to 31. Loan is an example of 32. Debenture is an example of 33. Assets = Capital + 34. Capital = Asset 	25. The main purpose of a tra	ding account is to det	ermine				
 27. Total sales less sales returns equal to 28. Closing stock refers to 29. Wages and salaries are to an organization 30. Rent received are added to 31. Loan is an example of 32. Debenture is an example of 33. Assets = Capital + 34. Capital = Asset 	26. The essence of preparing	a profit and loss accou	unt is to	determine			
 28. Closing stock refers to 29. Wages and salaries are to an organization 30. Rent received are added to 31. Loan is an example of 32. Debenture is an example of 33. Assets = Capital + 34. Capital = Asset 	27. Total sales less sales return	rns equal to					
 29. Wages and salaries are to an organization 30. Rent received are added to 31. Loan is an example of 32. Debenture is an example of 33. Assets = Capital + 34. Capital = Asset 	28. Closing stock refers to						
 30. Rent received are added to 31. Loan is an example of 32. Debenture is an example of 33. Assets = Capital + 34. Capital = Asset 	29. Wages and salaries are	29. Wages and salaries are to an organization					
 31. Loan is an example of 32. Debenture is an example of 33. Assets = Capital + 34. Capital = Asset 	30. Rent received are added to						
 32. Debenture is an example of 33. Assets = Capital + 34. Capital = Asset 	31. Loan is an example of						
 33. Assets = Capital + 34. Capital = Asset 	32. Debenture is an example of						
34. Capital = Asset	33. Assets = Capital +						

35. Liabilities = Asset - -----

Use the information below to answer questions 36--40

From the following, prepare the balance sheet of Ugochukwu Nigeria Ltd as at 31st December, 2013.

	Ν
Stock 31/12/13	1,500
Cash at Bank	800
Capital	110,000
Loans	30,000
Net profit	7,000
Furniture and fittings	1,400
Debtors	7,000
Bank overdrafts	2,790
Motor van	70,000
Cash in hand	50,000
Drawings	6,310
Land and Buildings	25,500
Premises	4,100
Creditors	17,000

36. What is the total amount of capital and Net profit?

37. What is the total amount of fixed assets?

38. What is the total amount of current liability?

39. What is the total amount of current assets?

40. What is the total amount of fixed asset + Current asset?

MARKING SCHEME FOR FINANCIAL ACCOUNTING ACHIEVEMENT TEST (FAAT)

- 1. Manufacturing account
- 2. Carriage Inwards
- 3. Cost of direct labour, Cost of direct expenses and Cost of factory expenses
- 4. Opening stock of Work in Progress (WIP) is debited and closing stock of WIP is credited to manufacturing account.
- 5. Deducted from sales.
- 6. Expenses
- 7. Sales
- 8. Work in progress
- 9. Profit
- 10. Expenses
- 11. N 291,800
- 12. N 241,00
- 13. N 348,00
- 14. N 408,800
- 15. N 358,800
- 16. N377,200
- 17. Debited to profit and loss account

- 18. Expenses
- 19. Shot- term or Current liability
- 20. Fixed asset
- 21. Short- term or current liability
- 22. Fixed asset
- 23. Current asset
- 24. Fixed asset
- 25. Gross profit
- 26. Net Profit
- 27. Net sales
- 28. Stock at the end of the trading period
- 29. Expenses
- 30. Net Profit
- 31. Current liability
- 32. Long term loan
- 33. Liabilities
- 34. Liabilities
- 35. Capital
- 36. N 117,020
- 37. N101,000
- 38. N49,790
- 39. N59,500
- 40. N160,500

Award 2.5 marks each

Total Marks = 100 marks

TESTS SCORES

TEST SCORES FOR JITT EXPERIMENT (FEMALE)

S/N	PRE-TEST	POST-TEST	DELAYED
	SCORES	SCORES	TEST
1	20	50	49
2	25	55	53
3	26	50	48
4	30	60	57
5	31	65	50
6	26	60	58
7	35	70	68
8	30	65	63
9	36	68	64
10	30	62	60
11	31	61	58
12	29	52	50
13	38	64	60
14	30	60	58
15	31	65	63
16	35	70	68
17	32	68	65
18	33	70	68
19	34	65	63
20	28	67	60
21	29	68	61
22	30	70	68
23	30	65	60
24	31	67	65
25	29	57	54
26	26	58	56
27	30	67	65
28	32	69	67
29	33	70	68
30	34	67	64
31	20	65	60
32	25	64	60
33	30	63	60
34	31	62	58
35	30	67	60
36	30	65	60
37	20	70	68
38	32	65	60
39	33	76	70
40	34	65	60
41	40	67	60
42	41	65	60
43	42	67	65
44	30	68	66

45	21	65	63
46	25	65	62
47	28	67	65
48	29	58	53
49	30	59	54
50	32	67	60
51	36	70	68
52	36	67	65
53	40	65	63
54	41	64	62
55	42	67	63
56	30	65	63
57	31	68	64
58	31	65	62
59	30	64	62
60	31	67	63
61	32	65	60
62	32	61	58
63	22	64	60
64	26	67	65
65	32	70	68
66	26	71	69
67	30	76	70
68	31	65	62
69	32	64	60
70	23	63	59
71	34	67	63
72	32	65	63
73	36	67	65
74	35	65	62
75	34	68	65
76	24	69	64
77	35	70	68
78	34	64	60
79	23	76	74
80	34	65	63
81	40	66	63
82	34	67	64
83	35	78	74
84	23	65	63
85	31	68	64
86	32	79	75
87	36	65	63
88	37	66	63
89	36	67	64
90	34	68	62

SCORES FOR JITT (MALE)

S/N	PRE-TEST	POST-	DELAYED
	SCORES	TEST	TEST
		SCORES	
1	20	50	48
2	18	45	43
3	20	60	53
4	15	48	45
5	14	49	47
6	17	50	46
7	20	56	53
8	25	60	56
9	30	61	57
10	35	62	60
11	36	60	58
12	18	43	41
13	19	52	50
14	20	48	45
15	21	56	53
16	18	46	41
17	19	50	46
18	20	60	57
19	21	48	46
20	28	51	47
21	28	52	50
22	27	40	36
23	20	63	60
24	21	61	57
25	33	50	46
26	24	61	57
27	25	55	50
28	26	56	53
29	32	63	60
30	20	44	40

TEST SCORES FOR PI EXPERIMENT (FEMALE)

S/N	PRE-	POST-	DELAYED
	TEST	TEST	TEST
1	29	50	51
2	36	51	53
3	28	52	53
4	30	50	51
5	20	51	53
6	21	52	50
7	36	45	47
8	18	43	46
9	29	45	48
10	16	48	45
11	20	50	51
12	30	60	57
13	35	50	52
14	29	55	50
15	28	46	47
16	20	45	43
17	21	50	52
18	25	56	50
19	30	50	56
20	25	50	52
21	30	61	57
22	20	45	47
23	22	55	50
24	21	46	40
25	21	45	43
26	28	55	57
27	20	55	52

28	21	50	54
29	30	48	49
30	31	65	63
31	30	60	58
32	40	65	60
33	20	55	56
34	31	60	62
35	30	68	64
36	40	70	68
37	25	55	51

TEST SCORES FOR PI EXPERIMENT (MALE)

S/N	PRE-TEST	POST TEST	DELAYED TEST
1	08	45	46
2	18	48	49
3	20	45	41
4	15	45	42
5	20	50	53
6	25	65	58
7	23	49	50
8	18	50	51
9	30	62	50
10	25	45	47

Validation of Instrument

Item Analysis for Financial Accounting Achievement Test (FAAT)

The item analysis was conducted using the scores of 40 students in the pilot test. Under the item analysis, the two indices that were computed were:

- (i) item difficulty and
- (ii) discrimination index.

Item Difficulty

Item difficulty is determined by the proportion of candidates that got the item right (Uwameiye in Oviawe, 20101). The formula for calculating the item

difficulty (P) is: $P = \underline{R \times 100}$

Where: P = Item analysis

R = Number of students who answered the item correctly

T = Total number of students who attempted the item.

According to Uwameiye, an ideal item is one whose index is 50 per cent difficulty level. An item of between 25 per cent to 75 per cent could be allowed in an achievement test where the aim is to have a high proportion of the class achieve mastery.

Discrimination Index

The degree to which an item discriminates between very high knowledge (high achievers) and low knowledge (low achievers) is the discrimination power of the item (Osunde in Oviawe, 2010). For an effective item, the index is supposed to be positive and high. This implies that more students in the upper group (high achievers) got the item than those in the lower group (lower achievers). A negative discrimination index indicates a defective item. The formula for computing the discrimination index is $\frac{D=RUXRL}{\frac{1}{2}T}$

Where: RU = Number of students in the upper group who got the item right

RL = Number of students in the lower group who got the item right

T = Total number of students who responded to the item.

Procedure for Computing Discrimination Index

Procedure adopted in determining the discrimination index included:

- the scripts of students were arranged in order of merit, the highest score being on top and the lowest score below.
- ii. the number of students (40) was multiplied by 0.27 and the results 10.8 was rounded up for 11 students.
- iii. 11 students (RU). Also, 11 scripts were counted from the bottom which represented the lower 11 students (RL). The remaining 18 scripts represented the students in between RU and RL and were not used for the exercise.

iv. the respective values of RU and RL for each item were inserted into the formula for computing discrimination indices of the item.

Final Selection of Items

In the final selection of items for the FAAT instrument, the following conditions were jointly considered:

- i. any item whose difficulty index fell within a positive index (between the range of 25 and 75) were used.
- ii. any item with a negative discrimination index was removed, and not used.
- iii. any item whose discrimination index fell below 20 was not used.

Initially, there were 60 items but 40 items were finally retained based on the value of difficulty and discrimination indices. Below is the item analysis table with 40 students who participated in the test of 60 questions.

S /	Item Difficult	Discriminat	Rema	S/N	Item Difficult	Discriminati	Remar
Ν	P= <u>R x 100</u>	ion	rk		P= <u>R x 100</u>	on Index	k
	Т	Index			Т	$\underline{R_{H}}-\underline{R_{L}}$	
		$\underline{R_{H}}-\underline{R_{L}}$				Ν	
		Ν					
1	60	0.45	Good	31	80	0.48	Good
2	65	0.73	Good	32	78	0.59	Good
3	44	-0.18	Bad	33	54	0.46	Good
4	55	0.37	Bad	34	36	-0.12	Bad
5	72	0.81	Good	35	19	-0.20	Bad
6	59	0.64	Good	36	70	0.36	Good
7	54	0.73	Good	37	69	0.50	Good
8	59	0.64	Good	38	70	0.36	Good
9	14	0.27	Bad	39	44	-0.18	Bad
10	68	0.45	Good	40	50	-0.10	Bad
11	9	0.00	Bad	41	70	0.36	Good
12	68	0.45	Good	42	36	-0.12	Bad
13	72	0.36	Good	43	59	0.73	Good
14	10	0.01	Bad	44	22	-0.19	Bad
15	18	-0.18	Bad	45	69	0.49	Good

16	54	0.73	Good	46	36	-0.22	Bad
17	59	0.45	Good	47	72	0.63	Good
18	18	-0.18	Bad	48	54	0.45	Good
19	59	0.45	Good	49	24	-0.34	Bad
20	54	0.73	Good	50	78	0.49	Good
21	72	0.36	Good	51	30	-0.09	Bad
22	20	-022	Bad	52	77	0.44	Good
23	59	0.64	Good	53	68	0.45	Good
24	36	-0.18	Bad	54	38	-0.17	Bad
25	22	-0.18	Bad	55	59	0.45	Good
26	56	0.44	Good	56	84	0.48	Good
27	69	0.50	Good	57	77	0.44	Good
28	40	0.49	Good	58	68	0.56	Good
29	56	0.44	Good	59	78	0.56	Good
30	60	0.72	Good	60	81	0.48	Good

Note: The good ones were taken.

Computation of Reliability Coefficient using Kudar Richardson (K-R20) Formula

Test Scores of 50 Selected Financial Accounting Students in Enugu State College of Education

24.00	18.00	32.00	26.00	24.00	18.00	30.00	29.00	33.00	15.00
33.00	15.00	40.00	19.00	33.00	15.00	24.00	18.00	27.00	38.00
27.00	38.00	14.00	20.00	27.00	38.00	33.00	15.00	11.00	23.00
11.00	34.00	24.00	34.00	11.00	20.00	27.00	38.00	29.00	30.00
29.00	33.00	21.00	30.00	29.00	34.00	11.00	24.00	18.00	24.00

Case Processing Summary

		Ν	%
Cases	Valid	50	100.0
	Excluded ^a	0	.0
	Total	50	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

	Kuder-Richardson	
Kuder-	Formula 20	
Richardson	Based on Standardized	
Formula 20	Items	N of Items
.895	.895	40

Scale Statistics

		Std.	N of
Mean	Variance	Deviation	Items
25.3600	66.847	8.17602	40

Item Stausues					
	Std.				
	Mean	Deviation	Ν		
VAR00001	.7800	.41845	50		
VAR00002	.7800	.41845	50		
VAR00003	.8600	.35051	50		
VAR00004	.8600	.35051	50		
VAR00005	.8600	.35051	50		
VAR00006	.7800	.41845	50		
VAR00007	.8600	.35051	50		
VAR00008	.6800	.47121	50		
VAR00009	.7600	.43142	50		
VAR00010	.4400	.50143	50		
VAR00011	.4600	.50346	50		
VAR00012	.5600	.50143	50		
VAR00013	.7000	.46291	50		
VAR00014	.8000	.40406	50		
VAR00015	.6600	.47852	50		
VAR00016	.6400	.48487	50		
VAR00017	.7400	.44309	50		
VAR00018	.7400	.44309	50		
VAR00019	.6000	.49487	50		
VAR00020	.6800	.47121	50		
VAR00021	.8400	.54810	50		
VAR00022	.8000	.40406	50		
VAR00023	.8000	.40406	50		
VAR00024	.8600	.35051	50		
VAR00025	.6600	.47852	50		
VAR00026	.6800	.47121	50		
VAR00027	.6200	.49031	50		
VAR00028	.5600	.50143	50		
VAR00029	.6400	.48487	50		
VAR00030	.4400	.50143	50		
VAR00031	.5000	.50508	50		
VAR00032	.4000	.49487	50		
VAR00033	.3800	.49031	50		
VAR00034	.3600	.48487	50		
VAR00035	.4000	.49487	50		
VAR00036	.4000	.49487	50		
VAR00037	.4200	.49857	50		
VAR00038	.3400	.47852	50		
VAR00039	.5000	.50508	50		
VAR00040	.5200	.50467	50		

Item Statistics

APPENX 9

PERMISSION LETTERS AND APPROVAL LETTERS

Department of Technology and Vocational Education, Faculty of Education, Nnamdi Azikiwe University, Awka, 30th April, 2019.

The Dean, School of Business Education, Nwafor Orizu College of Education, Nsugbe.

Madam,

REQUEST FOR PERMISSION TO UTILIZE YOUR NCE II STUDENTS FOR MY PH.D PROJECT RESEARCH WORK

I Enwere, Judith Ogechi with registration number 2012197025F humbly request

of you to grant me permission to utilize your NCE II students for my Ph.D. project research

work. The topic of my project is 'Relative Effectiveness of Just-in-Time Teaching and Peer

Instructional Strategies on Students' achievement and Retention in Accounting in College

of Education in Anambra State'. I promise to be friendly with your students if this request is

granted.

Thank you Ma, in anticipation of your kind approval.

Yours faithfully,

Enwere, Judith Ogechi Ph.D. Student

Department of Technology and Vocational Education, Faculty of Education, Nnamdi Azikiwe University, Awka, 29th April, 2019.

The Dean, School of Business Education, Federal College of Education (Technical), Umunze.

Sir,

REQUEST FOR PERMISSION TO UTILIZE YOUR SCHOOL RESOURCES AND NCE II STUDENTS FOR MY PH.D PROJECT RESEARCH WORK

I Enwere, Judith Ogechi with registration number 2012197025F humbly request of you to grant me permission to utilize your school resources and NCE II students for my Ph.D. project research work. The topic of my work is '*Relative Effectiveness of Just-in-Time Teaching and Peer Instructional Strategies on Students' Achievement and Retention in Financial Accounting in College of Education in Anambra State'*. I promise to use be careful in using your school resources and also to be friendly with your students if this request is granted.

Thank you Sir, in anticipation of your kind approval.

Yours faithfully,

Enwere, Judith Ogechi Ph.D. Student.

PICTURE OF TRAINING AND EXPERIMENTS OF NCE II BUSINESS EDUCATION STUDENTS FCET (T), UMUNZE ON JITT STRATEGY







EDMODO LEARNING SYSTEM MANAGEMENT USED FOR JITT EXPERIMENT

ite
_
t US · · ·
_
1

PICTURES OF TRAINING AND EXPERIMENTS OF NCE II BUSINESS EDUCATION STUDENTS NWAFOR ORIZU COLLEGE OF EDUCATION NSUGBE ON PI STRATEGY





Lesson plan on PI Experiment

WEEK I

Lesson Plan on Introduction to Manufacturing for PI strategy

Subject: Financial Accounting

Class: NCE II

Number of Students: 47

Average Age: 20 Years **Duration:** 1 hour **Topic**: Introduction to Manufacturing Account

Specific Objectives: By the end of the Lesson students should be able to:

- Explain the meaning of manufacturing accounts.
- Identity features of manufacturing account.
- Enumerate importance of manufacturing account.
- Discuss the following terms:
 - i. Prime cost
 - ii. Direct cost
 - iii. Indirect cost
 - iv. Overhead expenses
 - v. Work in Progress
 - vi. Cost of Production

Entry Behaviour: Students do sell or buy something from the market. Based on that the teacher asks students the following questions; assuming you want to sell farm products like yam, cocoa yam, maize, how do you ascertain the price of these farm products?

Instructional Materials: Textbook, Lap top, flash cards and calculator

Instructional Procedure:

TEACHERS'PERF. ACTIVITIES	STUDENTS' PERF.	SKILL EMPASIZED
	ACTIVITIES	
and lesson contents. The essence is to get the students psychologically ready	and jot down points	Set Induction
for the class. The lecturer guides the students through questioning. The objectives of the lesson are stated as follow: 1.Explain the meaning of manufacturing		
accounts. 2.Identity features of manufacturing account. 3.Enumerate importance of manufacturing account. 4.Discuss the following terms: i. Prime cost		
	TEACHERS'PERF. ACTIVITIESThe lecturer briefly introduces the topicand lesson contents. The essence is toget the students psychologically readyfor the class. The lecturer guides thestudents through questioning. Theobjectives of the lesson are stated asfollow:1.Explain the meaning of manufacturingaccounts.2.Identity features of manufacturingaccount.3.Enumerate importance ofmanufacturing account.4.Discuss the following terms:i. Prime cost	TEACHERS'PERF. ACTIVITIESSTUDENTS' PERF. ACTIVITIESThe lecturer briefly introduces the topic and lesson contents. The essence is to get the students psychologically ready for the class. The lecturer guides the students through questioning. The objectives of the lesson are stated as follow:Students1.Explain the meaning of manufacturing account.ImportanceImportance3.Enumerate importanceimportanceof manufacturing account.4.Discuss the following terms: i.Prime costImportance

		iii. Indirect cost		
		iv. Overhead expenses		
		v. Cost of Production		
Step 2		The teachers explain the content of the	Students listens	Explanation
Dwief		lesson to the students and also distribute	and write down	
Driei Locturo		mash cards to students.	the lesson	
Sten 3		The teacher gives students the following	Students vote	Questioning
Voting	bv	conceptual questions:	with their flash	Questioning
Students	J	······	cards	
		1.A financial statement that shows cost		
		of direct material and labour as well as		
		product overhead of organization is		
		known as		
		a) Deuterenslin Assessed		
		a) Partnership Account b) Joint venture account		
		c) Manufacturing accounts		
		d) Trading Account.		
		, , ,		
		2.Another name for Prime Cost is		
		a) Daried costs		
		a) Period costs b) Product cost		
		c) Factory cost		
		d) Cost of Production		
		3.Direct cost of production is made up of		
		the following except		
		a Cost of direct raw materials		
		b. Cost of direct labour		
		c. Cost of direct expenses		
		d. Cost of factory expenses		
		4.Features of manufacturing account		
		include the following except		
		a) All expenses relating to		
		manufacturing goods are		
		debited		
		b) The amount received		
		from the sale of scrap is		
		credited to manufacturing		
		account.		
		Progress (WIP) is debited		
		and closing stock of WIP		
		is credited to		
		manufacturing account.		
		d) Net profit is debited to		
the manufacturing accounts.				
--	---	---		
5.All the following are importance of manufacturing accounts except				
 a) It ascertains the cost of goods manufactured. b) It shows the profit or loss earned by a manufacturing department. c) It helps the management to evaluate the performance of the manufacturing department. d) It shows the true financial position of a company 				
 6.Opening stock of raw materials + Purchases of raw materials +carriage inwards – Purchases return - Closing stock of raw materials is equal to a) Cost of raw materials b) Cost of raw materials available for sale c) Cost of raw materials consumed 				
The teacher asks student to vote with their flash card				
The teacher with help of research assistant collate students' votes. If the correct answer is less than 30%, the teacher will go through the concept again. If the correct answer is between $30 - 70\%$, the teacher will engage student in peer discussion and asks student to vote again but if the vote is above 70% the teacher will explain the	Students vote, do peer discussion	Discussion, voting		
	themanufacturing accounts.5.All the following are importance of manufacturing accounts excepta) It ascertains the cost of goods manufactured. b) It shows the profit or loss earned by a manufacturing department.c) It helps the management toevaluate the performance of the manufacturing department.d) It shows the true financial position of a company6.Opening stock of raw materials + Purchases of raw materials + carriage inwards – Purchases return - Closing 	the manufacturing accounts. 5.All the following are importance of manufacturing accounts except a) It ascertains the cost of goods manufactured. b) It shows the profit or loss earned by a manufacturing department. c) It helps the management to to evaluate the performance of the manufacturing department. d) It shows the true financial position of a company 6.Opening stock of raw materials + Purchases of raw materials + Purchases of raw materials + consigned to a) Cost of raw materials sold b) Cost of raw materials a) Cost of raw materials sold b) Cost of raw materials available for sale c) Cost of raw materials consumed The teacher asks student to vote with do their flash card go through the concept again. If the correct answer is between 30 – 70%, the teacher will engage student in peer discussion and asks student in peer discussion and asks student in ovet again but if the vote is abov		

Evaluation: The teacher evaluates the lesson by asking students the following questions:

- **1.** A financial statement that shows cost of direct material and labour as well as product overhead of organization is known as -----
- 2. Another name for Prime Cost is ------

- 3. Direct cost of production is made up of the following except------
- 4. Features of manufacturing account include the following except-----
- 5. Opening stock of raw materials + Purchases of raw materials +carriage inwards Purchases return Closing stock of raw materials is equal to

Summary: After the classroom discussion, the teacher summaries the lesson.

Assignment: Read manufacturing account.

WEEK II

Lesson Plan on Preparation of Manufacturing Account for PI

Subject: Financial Accounting

Class: NCE II

Average Age: 20 Years

Duration: 1 hour

Topic: Preparation of Manufacturing Account

Specific Objectives: By the end of the Lesson students should be able to:

1.Write down the format for preparing manufacturing accounts.

2.Prepare manufacturing account.

Entry Behaviour: Students have done introduction to manufacturing account. Based on that, the teacher asks students the following question:

1. What is manufacturing account?

Instructional Materials: Textbook, Lap top, flash cards and calculator

Instructional Procedure:

CONTENT	TEACHERS'PERF.	STUDENTS'	SKILL
DEVELPT.	ACTIVITIES	PERF.	EMPASIZED
		ACTIVITIES	
Step 1	The lecturer briefly by revises the	Students listen and	Set Induction
Introduction	previous lesson. The teacher	jot down points	
	introduces the topic of the lesson as		
	preparation of manufacturing		
	account.		
Step 2	The teachers explains the content	Students listens	Explanation
	of the lesson to the students and	and write down the	
Brief Lecture	also distribute flash cards to	lesson	
	students.		
Step 3	The teacher gives students the	Students vote with	Questioning
Voting by	following conceptual questions:	their flash cards	
Students	The following information relates		
	to		
	Okeke Manufacturing company		
	Ltd for		
	six months ended 30 th June, 2013.		
	Purchase –raw materials		
	120,000		
	Direct wages		
	100,000		
	Rent and rates		
	40,000		

Carriage inwards	
1,440	
Opening Stock: 1 st January, 2013:	
Raw materials	
20,000	
Finished goods	
16,000	
Closing stock: 30 th June,2013	
Raw materials	
22,240	
Finished goods	
32,000	
Work-in-progress:	
Opening 1 ^{ad} January , 2013	
4,800	
Closing 50 June,2013	
10,000 Cost of factory supervision	
8 000	
0,000 Sale of finished goods 200,000	
Distribution expenses 15 000	
Use the information above and	
answer the following questions:	
1 What is the cost of raw materials	
available?	
a) $141\ 440$	
b) 134432	
c) 141.876	
d) 156.144	
2. What is the raw materials	
consumed?	
a) 199,000	
b) 119,200	
c) 130,000	
d) 137,000	
3. What is cost of production?	
a) 200,000	
b) 201,000	
c) 312,999	
d) 216,000	
4. What is the gross profit?	
a) 102,000	
b) 100,000	
c) 200,000	
d) 201,000	
5. What is the net profit?	
a) 100,000	
b) 100,101	
c) 103,000	
d) 111,100	
The teacher asks student to vote	

	with their flash card		
Step 4	The teacher with help of research	Students vote	Discussion, voting
Collation of	assistant collate students' votes.		
Students			
votes			
Step 5	If the correct answers are less than	Students listens	Discussion
Re-teaching	30%, the teacher re-teaching the	and write down	
the Concept	concept again.	notes	
Step 6	If the correct answers are between	Students partake in	Discussion;
Peer	30 - 70% the teacher engages	small group	Active-learning;
Discussion	students in peer discussion. The	discussion	Interactive-
	teacher does this by grouping		learning,
	students into small groups.		cooperative-
			learning.
Step 7	The teacher asks the students to	The students vote	Discussion;
Students'	vote again on the correctness of the	again on the	Active-learning;
Second Vote	answer.	correctness of their	Interactive-
		answers.	learning,
			cooperative-
			learning;
			Questioning
Step 8	The lecturer at this stage	Student answer	Discussion;
Summary	summaries the lesson and evaluates	questions.	Active-learning;
and	the students.		Interactive-
Evaluation	The evaluations are based on the		learning,
	objectives of the lesson as stated at		cooperative-
	the beginning of the lesson.		learning;
			Questioning

Assignment

The teacher tells the student to read the material on preparation of balance sheet.

WEEK III

Lesson Plan on Trading, Profit and Loss Account for PI

Subject: Financial Accounting

Class: NCE II

Average Age: 20 Years

Duration: 1 hour

Topic: Preparation of Trading, Profit and Loss Account

Specific Objectives: By the end of the Lesson students should be able to:

1. Explain the meaning of trading and profit and loss account.

2. Write down the format for preparing manufacturing trading, profit and loss accounts.

3. Prepare manufacturing, trading, profit and loss accounts.

Entry Behaviour: Since students have done manufacturing account. Based on that the teacher asks the student the following;

1. What do we arrive at after preparing manufacturing account?

Instructional Materials: Textbook, Laptop, calculator and flash card

CONTENT DEVELPT.	TEACHERS' PERFORMANCE ACTIVITIES	STUDENTS' PERF. ACTIVITIES	SKILL EMPASIZED
Step 1 Introduction	The lecturer briefly by revises the previous lesson. The teacher introduces the topic of the lesson as preparation of trading, profit and loss account.	Students listen and jot down points	Set Induction
Step 2 Brief Lecture	The teachers explains the content of the lesson to the students and also distribute flash cards to students.	Students listens and write down the lesson	Explanation
Step 3 Voting by Students	The teacher gives students the following conceptual questions: The following shows the figures extracted from the books of Enwere Nig Ltd for the year ended 31^{st} December, 2016	Students vote with their flash cards	Questioning
	Stock of Finished Good: January 1 st		

Instructional Procedure:

	50.640		
	December 21 st		
	71 290		
	71,500		
	Stock of Raw Materials: January 1		
	32,160		
	December		
	31 st 29,640		
	Purchases of Raw Materials		
	145,600		
	Manufacturing Wages		
	52,860		
	Factory Insurance		
	6 538		
	Direct Expenses		
	12 500		
	Depression: Eastery Equipment		
	16 500		
	Stock of Work in Progress: January 1		
	17,481		
	December		
	31 st 13,312		
	Factory Fuel		
	43,800		
	Carriage inwards on Raw materials		
	7,000		
	You are required to prepare the		
	manufacturing		
	6		
	account		
	• What is the total cost of raw		
	material consumed?		
	(160.322)		
	a) $100,355$		
	0) 153,120		
	c) $144,000$		
	d) 170,203		
	• What is the prime Cost?		
	a) 220,480		
	b) 334,231		
	c) 148.345		
	d) 234,567		
	• What is the cost of Production?		
	a) 344,556		
	b) 234,780		
	c) 291.487		
	d) 338,385		
	<i>a, 220,000</i>		
	The teacher asks student to vote with		
	their flash card		
Stop 4	The teacher with help of records	Studente vete	Discussion
Colletion of	assistant collate students' votes	Students vole	D15Cu551011,
Students votes	assistant contact students voles.		
Students votes		1	1

			voting
Step 5	If the correct answers are less than	Students listens	Discussion
Re-teaching	30%, the teacher re-teaching the	and write down	
Sten 6	If the correct answers are between 30 –	Students partake	Discussion
Peer	70% the teacher engages students in	in small group	Active-
Discussion	peer discussion. The teacher does this	discussion	learning
Discussion	by grouping students into small groups	albeassion	Interactive-
	by grouping statemes into smail groups.		learning.
			cooperative-
			learning.
Step 7	The teacher asks the students to vote	The students	Discussion;
Students'	again on the correctness of the answer.	vote again on	Active-
Second Vote		the correctness	learning;
		of their answers.	Interactive-
			learning,
			cooperative-
			learning;
			Questioning
Step 8	The lecturer at this stage summaries the	Student answer	Discussion;
Summary and	lesson and evaluates the students.	questions.	Active-
Evaluation	The evaluations are based on the		learning;
	objectives of the lesson as stated at the		Interactive-
	beginning of the lesson.		learning,
			cooperative-
			learning;
			Questioning

Assignment:

Read preparation of balance sheet

WEEK IV

Lesson Plan on Balance Sheet (Statement of Financial Position) for PI

Subject: Financial Accounting

Class: NCE II

Duration: 1 hour

Topic: Preparation of Balance Sheet.

Specific Objectives: By the end of the Lesson students should be able to:

Specific Objectives:

1.Write down the format for balance sheet.

2.Solve exercises on manufacturing, trading and profit and loss account plus balance sheet.

Entry Behaviour: Students have done manufacturing, trading and profit and loss account. Based on that, the teacher asks students the following question:

- i. What type of profit do we get after preparing profit and loss account?
- ii. Which side of the account are expenses recorded?

Instructional Materials: Textbook, Lap top, flash cards and calculator.

CONTENT	TEACHERS'PERF. ACTIVITIES	STUDENTS'	SKILL
DEVELPT.		PERF.	EMPASIZED
		ACTIVITIES	
Step 1	The lecturer briefly by revises the	Students listen	Set Induction
Introduction	previous lesson. The teacher introduces	and jot down	
	the topic of the lesson as preparation of	points	
	balance sheet.		
Step 2	The teachers explains the content of the	Students	Explanation
	lesson to the students and also distribute	listens and	
Brief Lecture	flash cards to students.	write down the	
		lesson	
Step 3	The teacher gives students the following	Students vote	Questioning
Voting by	conceptual questions:	with their flash	
Students	Isaac Enwere Ltd in a manufacturer	cards	
	of cooking utensils. The following		
	information		
	was extracted from the books of the		
	company		
	for the year ended 31 st December 2015		

Instructional Procedure:

	N	N
Dlant and	72 000	11
machinery	72,000	
Capital		1/8 800
<u>Motor vahiala</u>	26.000	140,000
	10,000	
Loose tools at	10,800	
	+	204.000
Sales	51.000	204,000
Purchases of raw	51,000	
materials		
Factory wages	46,800	
Light and power	6,000	
Machinery repairs	9,120	
Motor vehicle	14,400	
running expenses		
Rent and	13,920	
insurance		
Administrative	37,200	
staff salaries		
Administrative	10,800	
expenses		
Debtors	10,800	
Creditors	,	19.800
Distribution staff	15.600	- ,
salaries	10,000	
Cash in hand	15 000	
Drawings	7 200	
Stock of raw	600	
motorial	000	
	266 240	266 240
IUIAL	366,240	300,240
1.What is the consumed? a) 55,69 b) 43,20 c) 60,33 d) 80,12 2.What is the a) 80,08 b) 30,60 c) 90,00 d) 60,44	cost of rav 9 0 4 3 9 prime cos 0 0 0 0	w material
d) 60,44	4	0
3. What is cost of	productio	n?
a) 113,5	20	
b) 245,5	00	
c) 321,6	00	

	d) 400,220		
	4 What is mufit on cools		
	4. what is profit on goods		
	a) 480		
	b) 580		
	c) 670		
	d) 990		
	u , <i>y</i> , <i>u</i>		
	5. What is the cost of goods sold?		
	a) 220,000		
	b) 322,000		
	c) 210,000		
	d) 102,000		
	6. What is the net loss?		
	a) $2,000$		
	(0) 3,000		
	d) 3,080		
	u) 3,000		
	7.What is total amount for fixed		
	asset?		
	a) 79,800		
	b) 87,900		
	c) 80,800		
	d) 97,800		
	The teacher asks student to vote with		
	their flash card		
Sten 4	The teacher with help of research	Students vote	Discussion
Collation of	assistant collate students' votes	Students vote	Discussion,
Students votes			voting
			6
Step 5	If the correct answers are less than 30%,	Students	Discussion
Re-teaching	the teacher re-teaching the concept again.	listens and	
the Concept		write down	
		notes	
Step 6	If the correct answers are between $30 - 700$ (the taught many standard	Students	Discussion;
reer Discussion	10% the teacher engages students in peer	partake in	Acuve-
DISCUSSION	grouping students into small groups	discussion	Interactive
	grouping students into sman groups.	discussion	learning
			cooperative-
			learning.
Step 7	The teacher asks the students to vote	The students	Discussion;
Students'	again on the correctness of the answer.	vote again on	Active-
Second Vote		the correctness	learning;
		of their	Interactive-
		answers.	learning,
			cooperative-
			learning;
1			Questioning

Step 8	The lecturer at this stage summaries the	Student answer	Discussion;
Summary and	lesson and evaluates the students.	questions.	Active-
Evaluation	The evaluations are based on the		learning;
	objectives of the lesson as stated at the		Interactive-
	beginning of the lesson.		learning,
			cooperative-
			learning;
			Questioning

Assignment/Closure

The teacher tells the students that they have come to the end of the experiment and they should read up their books and prepare for post- test.

APPENDIX 13

Lesson Contents/Materials for Treatments

Week I

Topic 1: Introduction to Manufacturing Account

Learning Objectives:

By the end of the lesson students should be able to:

- 1. Explain the meaning of manufacturing accounts.
- 2. Identity features of manufacturing account.
- 3. Enumerate importance of manufacturing account.
- 4. Discuss the following terms:
 - i. Prime cost
 - ii. Direct cost
 - iii. Indirect cost
 - iv. Overhead expenses
 - v. Work in Progress
 - vi. Cost of Production
- 5. Identify the items that make up the manufacturing account to trading accounts.

Introduction

Manufacturing of goods is the transformation of raw materials into finished goods. A manufacturing organization will acquire raw materials, engage labour and other inputs necessary to change the raw materials into finished goods. A manufacturing business processes some raw material (eg wood) into finished goods/products (eg tables) using machines/tools/equipment (eg an electric saw), labour (eg machine operators) and premises (eg a workshop/factory);

A manufacturing business has to make/produce something before it can sell, therefore it needs to know how much it cost to produce (Cost of Production(of Finished Goods) before it can know how much it costs to sell (Cost of goods sold) and how much profit is made on sales. It manufactures first and then trades/sells. So it needs to know its Cost of Production(of Finished Goods) before it can prepare its income statement. An account/statement done at the end of a period to find out "Cost of Production(of Finished Goods)" is called a Manufacturing Account;

Manufacturing account is one of the aspects of Financial Accounting. It is a financial statement prepared by a manufacturing organization which shows the cost of direct materials and labour as well as production overhead of the organization. Manufacturing account is an accounting statement which summarizes the main items of manufacturing cost with a view to determining the cost of finished goods manufactured. Manufacturing account enables a manufacturing organization to ascertain the cost of its production in order to determine the cost of sales for the purpose of maximizing profit (Oyetade, 2008).

Features of manufacturing account

• All the expenses relating to manufacturing goods are debited.

- It shows only the figures of materials consumed instead of showing the figure of opening stock, purchase and closing stock separately.
- Opening stock of Work in Progress (WIP) is debited and closing stock of WIP is credited to manufacturing account.
- The amount received from the sale of scrap is credited to manufacturing account.
- The balance in the manufacturing account is the cost of production or manufacturing profit depending on the type of manufacturing account prepared.

Importance of manufacturing account

- It ascertains the cost of goods manufactured.
- It shows the profit or loss earned by a manufacturing department.
- It provides a basis for fixing the price of a product.
- It helps the management to evaluate the performance of the manufacturing department.
- It helps to control manufacturing cost.

Cost of Production:

This is the total expenditure incurred in the production of output. This is obtained by taking into account the total expenses which relate to the manufacturing process. It includes prime and factory overheads.

Division of Cost



- 1. **Prime Cost:** Costs which can be specifically/exclusively charged or traced to a particular item (goods/services) being produced/provided. They are also called **Product Costs**. Prime cost can easily be identified with a particular unit of output or direct cost of physically making the product. Prime cost = Direct material + Direct labour + Direct expenses.
 - a) **Direct Materials**: This is the expenditure incurred on raw materials which can be traced to a particular production unit. They can also be seen as materials which can be traced directly to every unit of the product e.g orange in Fanta

making, tobacco in cigarette, flour for bread etc. They are physical things which will actually form part of the finished goods.

- b) **Direct Labour**: This refer to the wages of employees who are directly engaged in the production process. This can also be referred to as the cost of labour services which are easily or directly traceable to the creation of a product e.g wages of operator, assembly line worker wages.
- c) **Direct Expenses:** These are expenses which have direct identification with production. These can also be seen as those cost that do not relate to direct material or labour but incurred specifically on a particular product and every unit produced e.g Royalty, excise duty, franchise, packaging.

2. Factory Overheads: These relate to expenditure incurred in running the factory which cannot be traced to a particular unit. These can also be seen as costs necessary for production which are not directly traceable to a specific quantity of physical units. They are indirect costs consumed during production processes. These include all other expenses concerned with the production of output but not in a direct manner. This means that if the level of production increased, then these expenses may also increase but not by the same proportion. These are sometimes known as indirect costs or indirect manufacturing costs. Factory overhead are not identifiable with units of production e.g Factory rent and rates, depreciation, fuel, indirect wages/labour, upkeep of factoring building etc. Depreciation of fixed assets should be included in this section only if it is depreciation on assets included for production. For example, depreciation of machinery would appear as an overhead cost but depreciation of office equipment would appear in the profit and loss account as an expense as would be expected in a non-manufacturing organisation. Once the overhead costs have been calculated they will need adding to the total of the prime cost. This will give us the production cost of the goods. However, the production cost will adjusting for which need goods are not vet finished. Make sure you add the total for factory overheads to the prime cost and don't subtract!

- 2. Non- Manufacturing Cost: These are cost which are treated as expenses and deducted from the revenue of the period in which they are incurred. They are not part of production cost. These include:
 - i. **Selling Expenses:** Selling expenses include salaries and commission of salesmen, advertising, sales office stationery, etc
 - ii. **Distribution expenses:** This covers the cost of warehousing, transport, material handling and control of finished goods from the moment they leave the factory to the moment they are delivered to the customer e.g carriage outwards, packing materials, lighting of warehouse etc.
 - iii. Office and administration expenses: These are the expenses incurred on establishment and maintenance of office. Administration expenses can also be seen as expenses that are administrative in nature, that is, expenses incurred in the process of panning, controlling and directing the organization. These comprises of office expenses. These include; office salaries, office rent, office insurance, office lighting, office machine depreciation, office rates and taxes, postage, printing and stationery, insurance, legal charges, audit fees, etc.. The office expenses are often used to illustrate an expense that will be allocated to the profit and loss account.
 - 4. Work in Progress: This can be defined as partly finished goods or incomplete work. Goods which are not finished are known as work-in-progress. The opening balance of work-in-progress is added on to the production cost and the work-in-progress left at the end of the year will need subtracting to give us the cost of the goods completed during the period we are dealing with. The

cost of production must be adjusted for the work in progress at the beginning and end of the year.

5. Cost of raw materials consumed

Within the prime cost adjustments will have to be made for opening and closing stocks of raw materials. There may also be carriage inwards charged on the raw materials and returns outwards of materials sent back to their original supplier. The overall charge for materials is referred to as cost of raw materials consumed, it is calculate5d as follows: **Cost of material consumed** = Opening stock of raw materials + Purchases of raw materials +carriage inwards – Purchases return - Closing stock of raw materials.

Evaluation Questions:

- **1.** A financial statement that shows cost of direct material and labour as well as product overhead of organization is known as ------.
 - 2. Another name for Prime Cost is ------
 - 3. Direct cost of production is made up of the following except------
 - 4. Opening stock of raw materials + Purchases of raw materials +carriage inwards Purchases return Closing stock of raw materials is equal to
 - 5. Direct material + Direct labour + Direct expenses is equal to ------
 - 6. The raw material that has not been completely processed into finished goods is known as-
 - 7. Prime cost + Indirect Production Cost + Opening WIP Closing WIP is equal to -----
 - 8. Opening stock of finished goods + cost of production + Purchases of finished goods is known as.

Week II

TOPIC 2: FORMAT OF MANUFACTURING ACCOUNT Learning Objectives:

By the end reading this topic students should be able to:

- 1. Write down two format of manufacturing account.
- 2. Identify key important points in preparation of manufacturing account.
- **3.** Prepare a manufacturing account.

Introduction

There are basically two formats for the preparation of manufacturing, trading and profit and loss account. The commonest among the horizontal format which has two sides i.e the debit and the credit side. The elements of the cost and expenses are debited while the revenue items are credited. On the other hand, the second format which is that recommended by Company and Allied Matters Act (CAMA) 1990 as amended is the vertical format which do not have a debit and credit side as the case of the former but items are listed accordingly and makes it simple for non-professionals of accounting to understand because there is nothing like debit and credit which usually confuse beginners. See the two format below:

The vertical format of a manufacturing account

Manufacturing account for the year ended

Opening stock of raw materials	XXXX	
Add purchase of raw materials	XXXX	
Add carriage inwards (if any)	XXXX	
	XXXX	
Less Returns outwards (of raw materials)	XXXX	
	XXXX	
Less Goods drawings (if any)	XXXX	
	XXXX	
Less Closing stock of raw materials	XXXX	
Cost of Direct Materials		XXXX
Add Direct labour		XXXX
Add Direct expenses (Eg: royalties)		XXXX
Prime Cost		XXXX
Add Factory overhead expenses		
Factory lighting	XXXX	
Factory heating	XXXX	
Factory insurance	XXXX	
Factory rent	XXXX	
Factory maintenance	XXXX	
Factory indirect wages	XXXX	
Factory supervisor's wages	XXXX	(+)
Depreciation on plant & machinery	XXXX	
Depreciation on factory building	XXXX	
Depreciation on factory furniture	XXXX	
Depreciation on factory motor van	XXXX	
Depreciation on other factory fixed	XXXX	XXXX
assets		

	XXXX
Add Opening stock of work in progress	XXXX
	XXXX
Less Closing stock of work in progress	XXXX
Cost of production	XXXX

Horizontal Format of Manufacturing Account

N			N	
Opening stock of raw materials	XX		Cost of production	XX
Purchases of raw materials	XX			
Carriage of raw mat.	XX			
Purchases return/ret. outwards	<u>(xx)</u>			
Cost of raw mat. available for used	XX			
Less closing stock	<u>XX</u>			
Cost of raw mat. used or consumed	XX			
Direct wages	XX			
Direct expenses	XX			
Prime cost	XX			
Factory Overheads:				
Depreciation on plant & mach. xx	K			
Factory Lighting xx	X			
Factory insurance x	Х			
Foreman salaries x	х			
General factory expenses x	X			
Other factory overheads		XX		
<u>XX</u>				
	Xx			
Opening stock of finished goods	XX			
Less closing work-in- progress	XX			
Cost of goods produced	XX			

In a manufacturing concern, usually there are three kinds of stocks:

Stock of Raw materials (the materials which are mainly used for production of the item) *Stock of Work in progress* (the materials on which some work process have been completed) *Stock of Finished goods* (The materials on which all the production processes are completed and ready for sale to the customers)

Fixed expenses and Variable expenses

Some expenses will remain constant whether the level of activity increases or falls. These expenses are called fixed expenses E.g. rent of building

The expenses which change with changes in activity are called variable expenses E.g. cost of materials.

Key points:

- Carriage on raw materials means carriage inwards and it is a part of prime cost.
- Carriage outwards is shown in the profit & loss account as an expense.
- Royalties paid is to be treated as direct expense.
- Depreciation on Plant and Machinery or any other factory asset is to be treated as factory overhead expense.
- Stocks of raw materials and work-in-progress are taken in the manufacturing account and stock of finished goods is taken in the trading account.

- Stocks at the end of the year (raw materials, work-in-progress and finished goods) are shown in the balance sheet as current assets.
- Owner's raw materials drawings are shown in the manufacturing account while calculating the prime cost.
- Finished goods drawings are shown in the trading account while calculating the cost of goods sold.
- The purchase of finished goods is added with cost of production in the trading account.
- The depreciation of any asset used in the office should be shown as an expense in the profit & loss account.
- Cost of readymade items bought for the production of items manufactured should be treated as direct expense.

Preparation of Manufacturing Accounts: Illustration 1

The following shows the figures extracted from the books of Enwere Nig Ltd for the year ended 31^{st} December, 2016 N

Stock of Finished Good:	January 1 st	50,640
	December 31 st	71,380
Stock of Raw Materials:	January 1 st	32,160
	December 31 st 29,640)
Purchases of Raw Materials		145,600
Manufacturing Wages		52,860
Factory Insurance		6,538
Direct Expenses		12,500
Depreciation: Factory Equipment		16,500
Stock of Work in Progress:	January 1 st	17,481
_	December 31 st	13,312
Factory Fuel		43,800
Carriage inwards on Raw materials		7,000

You are required to prepare the manufacturing account.

Opening stock of raw materials	32,160	
Add purchase of raw materials	145,600	
Add carriage inwards (if any)	7000	
Cost of raw mat. avail. for use	184,760	
Less Closing stock of raw	29,640	
materials		
Cost of Direct Materials	155,120	155,120
consumed		
Add Direct labour		52,860
Add Direct expenses (Eg:		12,500
royalties)		
Primo Cost		220,480
Add Factory overhead expenses		

Factory fuel	43,800	
Depreciation on equipment	16,500	66,838
		287,318
Add Opening stock of work in		17,481
progress		
		304,799
Less Closing stock of work in		13,312
progress		
Cost of production		291,487

Emeka manufacturing company has the following balances for the year ended 31^{st} December 2015.

Opening stock of raw materials	3,600
Opening work- in- progress	8,000
Purchases of raw materials	25,000
Carriage of raw materials	600
Direct Wages	9,650
Indirect wages	3,050
Factory rent	1,600
Lubricants	550
Direct expenses	1,000
Insurance of factory premises	1,260
Factory power	840
Depreciation of plant and machinery	1,200
Closing stock of raw material	4,200
Closing value of work-in-progress	6,000
Prepare manufacturing account.	

Week III

TOPIC 3: TRADING, PROFIT AND LOSS ACCOUNT.

Learning Objectives:

By the end of reading this topic students should be able to:

- 1. Write down the format of Trading, and Profit and Loss account.
- 2. Prepare Trading, Profit and Loss account.

Introduction

Trading Account is prepared to ascertain the results of the trading activities of the business enterprise. It shows whether the selling of goods purchased or manufactured has earned profit or incurred loss for the business unit. Cost of goods sold is subtracted from the net sales of the business of that accounting year. In case the total sales value exceeds the cost of goods sold, the difference is called Gross Profit. On the other hand, if the cost of goods sold exceeds the total net sales, the difference is Gross Loss. All accounts related to cost of goods sold such as opening stock, net purchases i.e. purchase less returns outward, direct expenses such as wages, carriage inward etc. and closing stock with net sales (i.e. Sales minus Sales returns) are taken to the Trading Account. Then this account is balanced. Credit balance shows the gross Profit and debit balance shows the gross loss.

It is necessary to understand the meaning of cost of goods sold before preparing Trading Account.

Cost of goods sold and gross profit

A business enterprise either purchases goods or manufactures goods to sell in the market. Cost of goods sold is computed to know the profit earned (Gross Profit) or loss incurred (Gross Loss) from the trading activities of a business unit for a particular period.

Cost of goods sold = the amount of goods purchased + expenses incurred in bringing the goods to the place of sale or expenses incurred on manufacturing the goods (called direct expenses).

In case there is a stock of goods to be sold in the beginning of the year or at the end of the year, the cost of goods is calculated as follows :

Cost of goods sold = Opening stock + Net purchases + All direct expenses - Closing stock

Gross Profit = Net sales – Cost of goods sold.

Need and Importance of Trading Account

Preparation of Trading Account serves the following objectives:

- i. **It provides information about Gross Profit and Gross Loss:** It informs of the gross profit or gross loss as a result of buying and selling the goods during the year. The percentage of Current Year's gross profit on the amount of sales can be calculated and compared with those of the previous years. Thus, it provides data for comparison, analysis and planning for a future period.
- ii. .**It provides information about the direct expenses:** All the expenses incurred on the purchase and manufacturing of goods are recorded in the trading account in a summarised form. Percentage of such expenses on sales can be calculated and compared with those of the previous years. In this way it enables the management to control and rationalise the expenses.
- iii. **Comparison of closing stock with those of the previous years:** closing stock has to be valued and recorded in a trading account. This stock can be compared with the closing stock of the previous years and if the stock shows an increasing trend, the reasons may be inquired into.
- iv. **It provides safety against possible losses:** If the ratio of gross profit has decreased in comparison to the preceding year, the businessman can take effective measures to safeguard himself against future losses. For example, he may increase the sale price of his gods or may proceed to analyse and control the direct expenses.

Preparation of Trading Account

Trading Account is a Nominal Account and all expenses which relate to either purchase or manufacturing of goods are written on the Dr. side of the Trading Account.

Item written on the Dr. side of the Trading Account:

1. **Opening Stock:** The stock of goods remaining unsold at the end of the previous year is termed as the opening stock of the current year. In other words, the closing stock of the last year becomes the opening stock of the current year. Opening Stock will include the following:

- i. Opening Stock of Raw Material.
- ii. Opening Stock of Semi-finished goods, and
- iii. Opening Stock of Finished goods.

2. **Purchases and Purchases Returns:** Goods which have been bought for resale are termed as Purchases and goods which are returned to suppliers are termed as purchase returns or returns outwards. Purchase Account will be given on the debit side of the trial balance and Purchase Return Account on the credit side of the trial balance. Purchase returns will be shown as a deduction from Purchases on the debit side of the trading account. Purchases include cash as well as credit purchases.

3. **Direct Expenses:** All expenses incurred in purchasing the goods, bringing them to the go down and manufacture of goods are called direct expenses. Direct expenses include the following:

- i. **Wages:** Wages are paid to workers who are directly engaged in the loading, unloading and production of goods and as such are debited to the trading account.
- ii. **Carriage or Carriage Inwards or Freight:** These expenses should be debited to trading account because these are generally paid for bringing the goods to the factory or place of business. However, if any carriage or freight is paid on bringing an asset,

the amount should be added to the asset account and must not be debited to trading account.

- iii. **Manufacturing Expenses:** All expenses incurred in the manufacture of goods are shown on the debit side of the trading account such as Coal, Gas, Fuel, Water, Power, Factory Rent, Factory Lighting etc.
- iv. **Dock Charges:** These are the charges levied on ships and their cargo while entering or leaving docks. If dock charges are paid on import of goods they are shown on the debit side of trading account. In the absence of specific instructions, these are debited to trading account.
- v. **Import Duty or Custom Duty:** Custom Duty is paid on import as well as on export of goods. Custom duty when paid on the purchase of goods is charged to trading account. In the absence of specific instructions, these are debited to trading account.
- vi. **Royalty:** This is the amount paid to the owner of a mine or patent for using his right or patent. Royalty is usually charged to trading account because it increases the cost of production. However, if it is specifically stated in the question that the Royalty is based on sales, it will be charged to Profit and Loss account.

Items written on the Cr. Side of the Trading Account:

Sales and Sales Returns: Both Cash and Credit sales will be included in sales. The sales account will be a credit balance whereas, the sales return account or returns inwards account will be a debit balance. Sales return will be deducted out of Sales on the credit side of the trading account.

Apart from direct expenses, there are indirect expenses also. These may be conveniently divided into office and administrative expenses, selling and distribution expenses, financial expenses, depreciation and maintenance charges etc.

Similarly, there can be income from sources other than sales revenue. These may be interest on investments, discount received from creditors, commission received, etc. Another account is prepared in which all indirect expenses and revenues from sources other than sales are written. This account when balanced shows profit (or loss). This account is termed as **Profit and Loss account.** The profit shown by this account is called 'net profit' and if it shows loss it is known as 'net loss'.

Opening stock of raw materials	XXX	
Add purchase of raw materials	XXX	
Add carriage inwards (if any)	XXX	
	XXX	
Less Returns outwards (of raw materials)	XXX	
	XXX	
Less Goods drawings (if any)	XXX	
Cost of raw mat. available for use	XXX	
Less Closing stock of raw materials	XXX	
Cost of Direct Materials Consumed		XXX
Add Direct labour		XXX
Add Direct expenses (Eg: royalties)		XXX
Prime Cost		XXX
Add Factory overhead expenses		

Format for trading and profit and loss account.

Factory lighting	XXX	
Factory heating	XXX	
Factory insurance	XXX	
Factory rent	XXX	
Factory maintenance	XXX	
Factory indirect wages	XXX	
Factory supervisor's wages	XXX	(+)
Depreciation on plant & machinery	XXX	
Depreciation on factory building	XXX	
Depreciation on factory furniture	XXX	
Depreciation on factory motor van	XXX	
Depreciation on other factory fixed assets	XXX	XXX
		XXX
Add Opening stock of work in progress		XXX
		xxx
Less Closing stock of work in progress		xxx
Cost of production		xxx
Sales of finished goods		xxx
Less Returns inwards		XXX
		XXX
Less Production cost of goods sold		
Opening stock of finished goods	XXX	
Add Cost of production		(-)
	VVV	(-)
Less closing stock of finished goods		
Less finished goods drawings by the owner		VVV
Cross profit or Cross loss		
Add: Other Income		
Discount received	vvv	
Rent received		
Interest received		
Commission received		
Dividend received		~~~~
Loss: Administrative expenses		
Admin Solorios	VVV	
Office electricity		
Office rent and rate		
Stationarias		
Admin Insurance		
Admini. Insurance		
Other Admin expenses		
Uner Admin expenses	XXX	XXX
Less: Selling and distribution exp.		
Datesman 8 salaries & commission	V	
Adverusing	AXX V	
Discount allowed	XXX	
Carriage outwards	XXX	
Depreciation of delivery van	XXX	(XXX)
Net Profit/Loss		XXX

Horizontal Format of Manufacturing A	ccount
--------------------------------------	--------

N	N
Opening stock of raw materials xx	Cost of production xx
Purchases of raw materials xx	
Carriage of raw mat. xx	
Purchases return/ret. outwards (xx)	
Cost of raw mat. available for use xx	
Less closing stock <u>xx</u>	
Cost of raw mat. used or consumed xx	
Direct wages xx	
Direct expenses <u>xx</u>	
Prime costxx	
Partory Overneads:	
Eactory Lighting xx	
Factory insurance xx	
Foreman salaries xx	
General factory expenses xx	
Other factory overheads xx xx	
Xx	
Opening stock of finished goods xx	
Less closing work-in- progress <u>xx</u>	
Cost of goods produced xx	Xx
Opening Stock of finished goods xx	Sales xx
Add production cost xx	Less sales return xx
Purchases of finished goods xx	
Carriage on finished goods xx	
Less Purchases return (xx)	
Goods available for sale xx	
Less closing stock XX	
Gross Profit c/d xx	
Administrative expenses :	Gross profit b/d xx
Admin. salaries xx	
Office electricity xx	
Office rent and rates xx	
Stationeries xx	
Admin. insurance xx	
Depreciation of office equipment xx	
Other admin. expenses xx	
Selling and distribution expenses:	
Salesman's salaries and comm. Xx	
Bad debt xx	
Advertising xx	

Discount allowed	XX	
Carriage outwards	XX	
Dep. on Delivery	XX XX	
Net profit/loss c/d	XX	

Illustration 2.

From the following ledger balances of Ikechukwu Plastics Company Ltd, you are required to prepare his manufacturing, trading and profit and loss account for the year ended 30th December, 2014 using horizontal format.

	N
Stock at 1/1/2014	
Raw materials	63,000
Work- in-progress	80,000
Finished goods	60,000
Stock at 31/12/2014	
Raw materials	50,8
Work-in-progress	18,000
Finished goods	50,000
Other balances	
Purchase of raw materials	220,000
Carriage of raw material	8,800
Productive wages	22,000
Rent, rate and taxes	10,000
Gas, fuel, water, light	18,000
Office salaries	128,000
Depreciation of plant and machinery	2,800
Sales	736,000

Note that rent, rates and gas, fuel must be apportioned as to factory $\frac{3}{4}$, office $\frac{1}{4}$.

Solution Ikechukwu Plastics Company Ltd Manufacturing, Trading, Profit and Loss account for the <u>Year ended 30th December, 2014</u>

	N		N
Opening stock of raw mat.	63,000	Cost of production	348,800
		b/d	
Add purchases of raw mat.	220,000		
Add carriage of raw mat	<u>8,800</u>		
Cost of raw mat available	291,800		
for use			
Less closing stock of raw	<u>50,800</u>		
mat			
Cost of raw mat.	241,000		
consumed			
Add productive wages	22,000		
Prime cost	263,000		

Factory overhead				
Rent (3/4*10,000)	7,500			
Gas (3/4 *18,000)	13,500			
Dep. P&M	<u>2,800</u>	<u>23,800</u>		
		286,800		
Add Opening W.I.P		80,000		
		366,800		
Less closing W.I.P		<u>18,000</u>		
Cost of Production		<u>348,800</u>		<u>348,800</u>
Opening stock of finished		60,000	Sales	736,000
gds				
Add cost of production		348,800		
Goods available for sale		408,800		
Less closing stock of		<u>50,000</u>		
finished goods				
Cost of goods sold		358,800		
Gross profit (736,000-		<u>377,200</u>		
358,800)				
		<u>736,000</u>		<u>736,000</u>
Rent (3/4 *10,000)		2,500	Gross profit b/d	377,000
Gas (1/4 *18,000)		4,500		
Office salaries		123,000		
Net Profit		<u>247,200</u>		
		377,200		377,200

Exercise

Okey is a manufacturer of expended materials. The following balances have extracted from the books of the business for the year ended 31st December, 2014.

	N	N
Capital		18,400
Drawings	720	-,
Stock at January, 2014		
Raw materials	8,000	
Work-in-progress	3,250	
Finished goods	6,000	
Manufacturing wages -Direct	6450	
- Indirect	2,800	
Miscellaneous expenses	260	
Travelling expenses	2,400	
Rent and Rates- Factory	600	
Freehold premises	10,000	
Plant and Machinery- factory	16,000	
Sales		98,260
Debtor and Creditor	4,050	3,190
Salaries and Wages	3,500	
Bank	6,000	
Cash	2,000	
Selling and administration expenses	2,850	

Discount received		150
Discount allowed	120	
Purchases of raw materials	45,000	
	120,000	120,000

Additional Information

1. Stock at 51° Determoet, 201°
1. Stock at 51 December, 2017

Raw Materials	N 9,500
Work-in-progress	№ 3,750
Finished goods	№ 5,840

- Rates paid in advanced N250 ii.
- A provision for bad debts of \mathbb{N} -300 is to be made iii.
- Depreciation provisions is to be provided on plant and machinery at 20% iv. You are required to prepare trading and profit and Loss account using horizontal format for the year ended 31st December, 2014.

Week IV

TOPIC 4

BALANCE SHEET/ POSITION STATEMENT.

Learning Objectives:

By the end of the lesson students should be able to:

- 1. Write down the format for balance sheet.
- 2. Solve exercises on manufacturing, trading and profit and loss account plus balance sheet.

Introduction.

Position Statement or Balance Sheet is another basis of financial statement. Balance sheet is the list of assets owned by the business and the claims of various parties against these assets. Balance Sheet is also is a statement prepared on a particular date, generally at the end of accounting year to ascertain the financial position of the entity. It consists of assets on the one hand and liabilities on the other. Assets are the economic resources of business. It is grouped into two forms Fixed and Current assets.

Fixed Assets: Assets which are permanent in nature and are not meant for conversion into cash within the accounting period. They are acquired for use within the organization and for the sales to customer. Examples land and building, machinery and plant, furniture and fitting, premises, equipment, motor car.

Current assets: Assets: These are assets, which are usually held for a short period of time for the purpose of conversion in the ordinary course of business. Example: Stock of good, Bank, Cash in hand, Bills receivable, Debtors etc

Liabilities: Liabilities are obligation arising from past transaction. It is what the business is owing to outsider or indebtedness of an organization to outsiders e.g. Debenture, Loan, Overdraft and Creditors etc.

Long-term Liabilities: These are liabilities which becomes due for settlement after more than one year e.g Debenture, Bond etc

Current Liabilities: These are liabilities, which are due for settlement within a short period of time (a year) e.g Creditors, Overdraft, Accrued expenses, income in advance etc.

Capital: Capital is the original money invested in a business by the owner. Format of Balance sheet

There are two types of balance sheet format namely:

- i. Horizontal format
- ii. Vertical format

Horizontal Format of Balance Sheet Balance sheet as at 31st December 20......

	N		N
Capital	Xx	Fixed Assets	

Add Net Profit		X	Land and Building	Х	
		Xx	Plant and Machinery	X	
Less Cash or goods drawing		X	Premises	X	
Long-term Liabilities			Equipment	X	
% Debenture	Х		Motor van	Х	
Bond	X	Χ	Fixtures	<u>X</u>	Xx
Current Liabilities			Current assets		
Loan	Х		Stock	Х	
Creditors	Х		Debtor	X	
Bank overdraft	X	Xx	Bank	Х	
			Cash in hand	X	Xx
		Xx			Xx

Vertical format

Balance sheet as at 31st December 20.....

Fixed assets	N		N		N
Land and building			X		
Premises			Х		
Motor van			Х		
Furniture and fittings		<u>X</u>		Х	
Current assets					
Cash in hand	XX				
Bills receivable	XX				
Debtors	XX				
Stock	<u>XX</u>		XX		
Less Current Liabilities					
Creditors	XX				
Loans	XX				
Overdraft	XX		XX		XX
					XX
Financed By					
Capital			XX		
Add Net profit		<u>XX</u>			X7 X7
Less Drawings		<u>XX</u>		<u>XX</u>	XX

Illustration 4

From the following, prepare the balance sheet of Ugochukwu Nigeria Ltd as at 31^{st} December, 2013.

Stock 31/12/13	1,500	Cash at Bank	800
Capital	110,000	Loans	30,000
Net profit	7,000	Furniture and fittings	1,400
Debtors	7,000	Bank overdrafts	2,790
Motor van	70,000	Cash in hand	50,000
Drawings	6,310	Land and Buildings	25,500
Premises	4,100	Creditors	17,000

Solution: T method

Balance sheet as at 31st December 2013

	N	N	Fixed assets	N	N
Capital		110,000	Motor van	70,000	
Add Net Profit		7,000	Land and Building	25,500	
		117,020	Premises	4,100	
Less Drawing		<u>6,310</u>	Furnit. and fitting	<u>1,400</u>	101,000
		110,710			
Current Liabi.			Current assets		
Creditors	17,000		Cash in hand	50,200	
Loan	30,000		Bill receivable	800	
Overdrafts	2,790	49,790	Debtors	7,000	
			Stock	<u>1,500</u>	59,500
		160,500			160,500

Using Vertical formats:

Balance sheet as at 31st December, 2013

Fixed assets	N	N	N
Motor van		70,000	
Land and Building		25,500	
Premises		4,100	
Furniture and fittings		1,400	101,000
Current assets			
Cash in hand	50,200		
Bills receivable	800		
Debtors	7,000		
Stock	<u>1,500</u>	<u>59,500</u>	<u>59,500</u>
			160,500
Less Current Liabilities			
Creditors	17,000		
Loans	30,000		
Overdrafts	2,790	49,790	<u>49,790</u>
			<u>110,710</u>
FINANCED BY			
Capital		110,020	
Add Net Profit		7,000	
		117,020	
Less Drawing		6,310	<u>110,710</u>

Illustration 3

Jerome is a manufacture of kitchen furniture. The following information was extracted from the books of the company for the ended 31^{st} December, 2014. **Dr Cr**

	N	N
Plant and machinery	72,000	
Capital		148,800
Motor vehicle	36,000	
Loose tools at cost(office)	10,800	
Sales		204,000
Purchases of raw materials	51,000	
Factory wages	46,800	
Light and power	6,000	
Machinery repairs	9,120	
Motor vehicle running expenses	14,400	
Rent and insurance	13,920	
Administrative staff salaries	37,200	
Administrative expenses	10,800	
Debtors	19,800	
Creditor		13,440
Distribution staff salaries	15,600	
Cash in hand	15,000	
Drawings	7,200	
Stock of raw materials	600	
	366,240	366,240

Additional information:

- **a.** Light and power charges accrued at 31^{st} December, 2014 amounted to $\aleph 1$, 000 and insurance prepared at the same date totalled $\aleph 960$.
- b. Stocks were valued at cost on 31st December,2014 as follows: Raw materials
 N−8,400
 - Finished goods \$12,000
- c. Goods manufactured during the year are to be transferred to the trading account at $\frac{114,000}{114,000}$
- d. Motor vehicle expenses are to be allocated equally to factory expenses and general administrative expenses.
- e. Office loose tools on hand on 31^{st} December, 2014 were valued at N6, 000.
- f. Plant and machinery and motor vehicle are to be depreciated at the rate of 10% and 25% respectively.

You are required to prepare:

- i. Manufacturing, Trading, Profit and Loss account for the year ended 31st December, 2014.
- ii. Balance sheet as at that date.

Solution:

<u>Manufacturing, Trading, Profit and Loss account for the year ended 31st December,</u> <u>2014</u>

	N	N		N
Opening stock of RM		600	Cost of good	l 114,000
			transferred to trading	
Add: Purchases of RM		<u>51,000</u>		
Cost of RM available		51,600		
Less: Closing stock RM		8,400		
Cost of RM consumed		43,200		
Add: Factory wages		<u>46,800</u>		
Prime cost		90,000		
Factory overhead				
Machine repairs	9,120			
Motor running expenses	7,200			
Depreciation:				
Plant and machinery	7,200	<u>23,520</u>		
		113,520		
Profits on goods		<u>480</u>		
manufactured (114,000-				
113520)				
		<u>114,000</u>		<u>114,000</u>
Goods transferred		114,000	Sales	204,000
Less: Closing stock of FG		<u>12,000</u>		
Cost of goods sold		102,000		
Gross profit		102,000		
		204,000		204,000
Expenses				
Light and power		7,000	Gross profit b/d	102,000
Motor running expenses		7,200	Profit on manuf.	480
Rent and insurance		12,960	Net loss	2,080
Administrative staff salaries		37,200		
Administrative expenses		10,800		

Distributive staff salaries	15	5,600	
Depreciation: Motor veh.	90	000	
Loose tools	<u>4,8</u>	<u>800</u>	
	<u>10</u>	<u>4,560</u>	<u>104,560</u>

Balance sheet as at 31st December, 2014

	N		N
		Fixed Assets	
Capital	148,800	Motor vehicle (36,000 - 9,000)	27,000
Less: Net loss	<u>2,080</u>	P & M (72,000-7,200)	64,800
	146,720		
Less: Drawings	7,200	Loose tools(10,800-4,800)	6,000
	139,520		97,800
Current liabilities		Current assets	
Creditor	13,440	Stock :Raw materials	8,400
Light and power accrued	1,000	Finished goods	12,000
		Debtors	19,800
		Cash in hand	15,000
		Insurance	960
	153,960		<u>153,960</u>

Workings

- i. Light and power = $6,000 + 1,000 = \frac{N}{7},000$
- ii. Insurance = 13,920 960 = \$12,960
- iii. Motor expenses = Factory = $\frac{1}{2} \times 14.440 = \frac{1}{2} \times 7,200$ General administrative expense = $\frac{1}{2} \times 14,440 = \frac{1}{2} \times 7,200$
- iv. Loose tools: Cost 10,800 Depreciation 4,800
 - 6,000
- v. Depreciation: Plant and machinery = 10% x 72,000 = N7,200
- vi. Motor vehicle = 25% x 36,000 = N9, 000.

Exercise 4

Isaac Enwere Ltd in a manufacturer of cooking utensils. The following information was extracted from the books of the company for the year ended 31st December 2015

	Dr	Cr
	N	N
Plant and machinery	72,000	
Capital		148,800
Motor vehicle	36,000	
Loose tools at	10,800	
cost(office)		
Sales		204,000

Purchases of raw	51,000	
materials		
Factory wages	46,800	
Light and power	6,000	
Machinery repairs	9,120	
Motor vehicle	14,400	
running expenses		
Rent and insurance	13,920	
Administrative staff	37,200	
salaries		
Administrative	10,800	
expenses		
Debtors	10,800	
Creditors		19,800
Distribution staff	15,600	
salaries		
Cash in hand	15,000	
Drawings	7,200	
Stock of raw	600	
material		
TOTAL	366,240	366,240

You are required to prepare; manufacturing, trading and profit and loss account.

APPENDIX 14

Lesson Plan for JiTT Experiment

WEEK I

Lesson Plan on Introduction to Manufacturing Account for JiTT Experiment Subject: Financial Accounting Class: NCE II Number of Students: 120 Average Age: 20 Years Duration: 1 hour Topic: Introduction to Manufacturing Account Specific Objectives: By the end of the Lesson students should be able to: 1. Explain the meaning of manufacturing accounts. 2. Identity features of manufacturing account. 3. Enumerate importance of manufacturing account. 4. Discuss the following terms:

- i. Prime cost
- ii. Direct cost
- iii. Indirect cost
- iv. Overhead expenses
- v. Work in Progress
- vi. Cost of Production

Entry Behaviour: Students have read and answer the warm up questions posted to them by their teacher. In other to ascertain their level of understanding, the teacher asks students to explain the meaning of manufacturing account.

Instructional Materials: Textbook, Lap top, projector and calculator.

Instructional Procedure:

CONTENT	TEACHERS' PERFORMANCE	STUDENTS'	SKILLS
DEVELOPT	ACTIVITIES	PERFORMANCE	EMPHASIZED
		ACTIVITIES	
Step1	The lecturer posts the following lesson	The students read	Questioning,
Pre-Posting	contents:	the material and	Web-mastery,
of Lesson	1. Meaning of Manufacturing	attempt the follow-	Independent
Materials	Account.	up questions	study habit;
	2. Features of Manufacturing	individually at	Problem-solving
	Account.	home within the	
	3. Importance of Manufacturing	time given.	
	Account		
	1	1	
---	--	---	---
	 4. Division of Cost to the students through EDMODO learning management system few days before the lesson takes place in the class. The teacher also posts follow up questions: A financial statement that shows cost of direct material and labour as well as product overhead of organization is known as		
	the questions is also posted.		
Step 2 Review of Students' Responses and Develop in-class Active Learning Exercises	The lecturer reviews the responses from the students and develops in-class active- learning exercises based on the learning gaps identified from the JITT responses. Thus, the lecturer uses student responses to develop interactive, cooperative-learning exercises that target learning gaps made visible in students' responses or extend the concepts included in the exercise.	Students post their responses to the lecturer	Active-learning; Interactive- learning, cooperative- learning
Step 3	The teacher implements JiTT in classroom	Students join in	Discussion;
Implementat	by simple showing a sample of students'	discussion, answer	Active-learning;
ion of JiTT	responses	questions	Interactive-
in classroom	(anonymously) at front of the classroom.		learning,
	this is followed with classroom discussion asking students to point out		cooperative-
	incomplete or correct thought processes		Ouestioning
	expand on submitted responses. or extend		Zuosuoning
	the highlighted concept.		
Step 4	The teacher maintains close linkage		Discussion;
Develop	between out-of-class responses and in-		Active-learning;
Comprehens	class activities provides motivation for		Interactive-
ive Response	students to complete JiTT exercises,		learning,
	supports ongoing formative assessment in		cooperative-
	the classroom, and promotes learning		learning;
	while concepts are fresh in students' minds.		Questioning

Evaluation: The teacher evaluates the lesson by asking students the following questions:

- **1.** A financial statement that shows cost of direct material and labour as well as product overhead of organization is known as ------
- 2. Another name for Prime Cost is -----
- 3. Direct cost of production is made up of the following except------
- 4. Features of manufacturing account include the following except------
- 5. Opening stock of raw materials + Purchases of raw materials +carriage inwards Purchases return Closing stock of raw materials is equal to -----

Summary: After the classroom discussion, the teacher summaries the lesson by clearing misconceptions in students responses.

Assignment: Read the lesson material on the Edmodo site www.edmodo.com, answer the

follow-up questions and submit responses via the same site. This as to get

themselves ready for the next class

WEEK II

Lesson Plan on Preparation of Manufacturing Account for JiTT experiment.

Subject: Financial Accounting

Class: NCE II

Number of Students: 120

Duration: 1 hour

Topic: Preparation Manufacturing Account.

Specific Objectives: By the end of the Lesson students should be able to:

- 1. Write down the format for preparing manufacturing accounts.
- 2. Identify key important points in preparation of manufacturing account.
- 3. Prepare manufacturing account.

Entry Behaviour: Students have done introduction to manufacturing account. Based on that, the teacher asks students the following question:

1. What is manufacturing account?

Instructional Materials: Textbook, Lap top, projector, VCD and calculator.

Instructional Procedure

CONTENT	TEACHERS' PERFORMANCE	STUDENTS'	SKILL
DEVELOP	ACTIVITIES	PERFORMA	EMPHASIZ
MENT		NCE	ED
		ACTIVITIES	
Step 1	The lecturer posts the following lesson	The students	Questioning,
Pre-Lesson	contents:	read the	Web-mastery,
Posting of	1. Two formats of manufacturing	material and	Independent
Materials	account.	attempt the	study habit;
	2. Illustration on manufacturing	follow-up	Problem-
	account.	questions	solving
		individually at	
	The teacher also posts the follow-up	home within	
	questions:	the time given.	
	Using the format of the manufacturing		
	account solve the following question.		
	Emeka manufacturing company has the		
	following balances for the year ended 31 st		

	December 2015.		
	<u>N</u>		
	Opening stock of raw materials 3.600		
	Opening work- in- progress 8,000		
	Purchases of raw materials 25,000		
	Carriage of raw materials 600		
	Direct Wages 9,650		
	Indirect wages 3,050		
	Factory rent 1,600		
	Lubricants 550		
	Direct expenses 1,000		
	Insurance of factory premises 1,260		
	Factory power 840		
	Depreciation of plant and		
	machinery 1,200		
	Closing stock of raw material 4,200		
	Closing value of work-in-progress 6,000		
	Prepare manufacturing account.		
	The time-frame for students to respond to		
	the questions is also posted.		
Step 2	The lecturer reviews the responses from	Students join	Active-
Review of	the students and develops in-class active-	in discussion,	learning;
Students'	learning exercises based on the learning	answer	Interactive-
Responses	gaps identified from the JITT responses.	questions	learning,
1			
and	Thus, the lecturer uses student responses		cooperative-
and Develop in-	Thus, the lecturer uses student responses to develop interactive, cooperative-		cooperative- learning
and Develop in- class Active	Thus, the lecturer uses student responses to develop interactive, cooperative- learning exercises that target learning		cooperative- learning
and Develop in- class Active Learning	Thus, the lecturer uses student responses to develop interactive, cooperative- learning exercises that target learning gaps made visible in students' responses		cooperative- learning
and Develop in- class Active Learning Exercises	Thus, the lecturer uses student responses to develop interactive, cooperative- learning exercises that target learning gaps made visible in students' responses or extend the concepts included in the		cooperative- learning
and Develop in- class Active Learning Exercises	Thus, the lecturer uses student responses to develop interactive, cooperative- learning exercises that target learning gaps made visible in students' responses or extend the concepts included in the exercise.		cooperative- learning
and Develop in- class Active Learning Exercises Step 3	Thus, the lecturer uses student responses to develop interactive, cooperative- learning exercises that target learning gaps made visible in students' responses or extend the concepts included in the exercise. The teacher implements JiTT in	Students join	cooperative- learning Discussion;
and Develop in- class Active Learning Exercises Step 3 Implement	Thus, the lecturer uses student responses to develop interactive, cooperative- learning exercises that target learning gaps made visible in students' responses or extend the concepts included in the exercise. The teacher implements JiTT in classroom by simple showing a sample of	Students join in discussion,	cooperative- learning Discussion; Active-
and Develop in- class Active Learning Exercises Step 3 Implement ation of	Thus, the lecturer uses student responses to develop interactive, cooperative- learning exercises that target learning gaps made visible in students' responses or extend the concepts included in the exercise. The teacher implements JiTT in classroom by simple showing a sample of students' responses	Students join in discussion, answer	cooperative- learning Discussion; Active- learning;
and Develop in- class Active Learning Exercises Step 3 Implement ation of JiTT in	Thus, the lecturer uses student responses to develop interactive, cooperative- learning exercises that target learning gaps made visible in students' responses or extend the concepts included in the exercise. The teacher implements JiTT in classroom by simple showing a sample of students' responses (anonymously) at front of the classroom.	Students join in discussion, answer questions	cooperative- learning Discussion; Active- learning; Interactive-
and Develop in- class Active Learning Exercises Step 3 Implement ation of JiTT in classroom	Thus, the lecturer uses student responses to develop interactive, cooperative- learning exercises that target learning gaps made visible in students' responses or extend the concepts included in the exercise. The teacher implements JiTT in classroom by simple showing a sample of students' responses (anonymously) at front of the classroom. This is followed with classroom	Students join in discussion, answer questions	cooperative- learning Discussion; Active- learning; Interactive- learning,
and Develop in- class Active Learning Exercises Step 3 Implement ation of JiTT in classroom	Thus, the lecturer uses student responses to develop interactive, cooperative- learning exercises that target learning gaps made visible in students' responses or extend the concepts included in the exercise. The teacher implements JiTT in classroom by simple showing a sample of students' responses (anonymously) at front of the classroom. This is followed with classroom discussion, asking students to point out	Students join in discussion, answer questions	cooperative- learning Discussion; Active- learning; Interactive- learning, cooperative- learning,
and Develop in- class Active Learning Exercises Step 3 Implement ation of JiTT in classroom	Thus, the lecturer uses student responses to develop interactive, cooperative- learning exercises that target learning gaps made visible in students' responses or extend the concepts included in the exercise. The teacher implements JiTT in classroom by simple showing a sample of students' responses (anonymously) at front of the classroom. This is followed with classroom discussion, asking students to point out incomplete or correct thought processes, anonymously and the state of th	Students join in discussion, answer questions	cooperative- learning Discussion; Active- learning; Interactive- learning, cooperative- learning; Ouestigning
and Develop in- class Active Learning Exercises Step 3 Implement ation of JiTT in classroom	Thus, the lecturer uses student responses to develop interactive, cooperative- learning exercises that target learning gaps made visible in students' responses or extend the concepts included in the exercise. The teacher implements JiTT in classroom by simple showing a sample of students' responses (anonymously) at front of the classroom. This is followed with classroom discussion, asking students to point out incomplete or correct thought processes, expand on submitted responses, or extend the highlighted concent	Students join in discussion, answer questions	cooperative- learning Discussion; Active- learning; Interactive- learning, cooperative- learning; Questioning
and Develop in- class Active Learning Exercises Step 3 Implement ation of JiTT in classroom	Thus, the lecturer uses student responses to develop interactive, cooperative- learning exercises that target learning gaps made visible in students' responses or extend the concepts included in the exercise. The teacher implements JiTT in classroom by simple showing a sample of students' responses (anonymously) at front of the classroom. This is followed with classroom discussion, asking students to point out incomplete or correct thought processes, expand on submitted responses, or extend the highlighted concept.	Students join in discussion, answer questions	cooperative- learning Discussion; Active- learning; Interactive- learning, cooperative- learning; Questioning
and Develop in- class Active Learning Exercises Step 3 Implement ation of JiTT in classroom Step 4 Develop	Thus, the lecturer uses student responses to develop interactive, cooperative- learning exercises that target learning gaps made visible in students' responses or extend the concepts included in the exercise. The teacher implements JiTT in classroom by simple showing a sample of students' responses (anonymously) at front of the classroom. This is followed with classroom discussion, asking students to point out incomplete or correct thought processes, expand on submitted responses, or extend the highlighted concept. The teachers solves the question for the atudents. Thus, the teacher maintains	Students join in discussion, answer questions	cooperative- learning Discussion; Active- learning; Interactive- learning, cooperative- learning; Questioning Discussion; Active
and Develop in- class Active Learning Exercises Step 3 Implement ation of JiTT in classroom Step 4 Develop Comprehe	Thus, the lecturer uses student responses to develop interactive, cooperative- learning exercises that target learning gaps made visible in students' responses or extend the concepts included in the exercise. The teacher implements JiTT in classroom by simple showing a sample of students' responses (anonymously) at front of the classroom. This is followed with classroom discussion, asking students to point out incomplete or correct thought processes, expand on submitted responses, or extend the highlighted concept. The teachers solves the question for the students. Thus, the teacher maintains close linkage between out of close	Students join in discussion, answer questions	cooperative- learning Discussion; Active- learning; Interactive- learning; Questioning Discussion; Active- learning;
and Develop in- class Active Learning Exercises Step 3 Implement ation of JiTT in classroom Step 4 Develop Comprehe nsive	Thus, the lecturer uses student responses to develop interactive, cooperative- learning exercises that target learning gaps made visible in students' responses or extend the concepts included in the exercise. The teacher implements JiTT in classroom by simple showing a sample of students' responses (anonymously) at front of the classroom. This is followed with classroom discussion, asking students to point out incomplete or correct thought processes, expand on submitted responses, or extend the highlighted concept. The teachers solves the question for the students. Thus, the teacher maintains close linkage between out-of-class responses and in class activities provides	Students join in discussion, answer questions	cooperative- learning Discussion; Active- learning; Interactive- learning; Questioning Discussion; Active- learning; Interactive- learning
and Develop in- class Active Learning Exercises Step 3 Implement ation of JiTT in classroom Step 4 Develop Comprehe nsive Bosponso	Thus, the lecturer uses student responses to develop interactive, cooperative- learning exercises that target learning gaps made visible in students' responses or extend the concepts included in the exercise. The teacher implements JiTT in classroom by simple showing a sample of students' responses (anonymously) at front of the classroom. This is followed with classroom discussion, asking students to point out incomplete or correct thought processes, expand on submitted responses, or extend the highlighted concept. The teachers solves the question for the students. Thus, the teacher maintains close linkage between out-of-class responses and in-class activities provides motivation for students to complete ITT	Students join in discussion, answer questions	cooperative- learning Discussion; Active- learning; Interactive- learning; Questioning Discussion; Active- learning; Interactive- learning; Interactive- learning; Interactive- learning; Interactive- learning; Interactive- learning; Interactive- learning; Interactive- learning; Discussion; Active- learning; Discussion; Disc
and Develop in- class Active Learning Exercises Step 3 Implement ation of JiTT in classroom Step 4 Develop Comprehe nsive Response	Thus, the lecturer uses student responses to develop interactive, cooperative- learning exercises that target learning gaps made visible in students' responses or extend the concepts included in the exercise. The teacher implements JiTT in classroom by simple showing a sample of students' responses (anonymously) at front of the classroom. This is followed with classroom discussion, asking students to point out incomplete or correct thought processes, expand on submitted responses, or extend the highlighted concept. The teachers solves the question for the students. Thus, the teacher maintains close linkage between out-of-class responses and in-class activities provides motivation for students to complete JiTT exercises supports ongoing formative	Students join in discussion, answer questions	cooperative- learning Discussion; Active- learning; Interactive- learning; Questioning Discussion; Active- learning; Interactive- learning; Interactive- learning; Cooperative- learning; Interactive- learning; Cooperative- learning; Cooperative- learning; Cooperative- learning; Cooperative- learning; Cooperative- learning; Discussion; Active- learning; Cooperative- learning; Cooperative- learning; Cooperative- learning; Cooperative- learning; Discussion; Active- learning; Cooperative- learning; Discussion; Discussion; Active- learning; Cooperative- Coopera
and Develop in- class Active Learning Exercises Step 3 Implement ation of JiTT in classroom Step 4 Develop Comprehe nsive Response	Thus, the lecturer uses student responses to develop interactive, cooperative- learning exercises that target learning gaps made visible in students' responses or extend the concepts included in the exercise. The teacher implements JiTT in classroom by simple showing a sample of students' responses (anonymously) at front of the classroom. This is followed with classroom discussion, asking students to point out incomplete or correct thought processes, expand on submitted responses, or extend the highlighted concept. The teachers solves the question for the students. Thus, the teacher maintains close linkage between out-of-class responses and in-class activities provides motivation for students to complete JiTT exercises, supports ongoing formative assessment in the classroom and	Students join in discussion, answer questions	cooperative- learning Discussion; Active- learning; Interactive- learning; Questioning Discussion; Active- learning; Interactive- learning;
and Develop in- class Active Learning Exercises Step 3 Implement ation of JiTT in classroom Step 4 Develop Comprehe nsive Response	Thus, the lecturer uses student responses to develop interactive, cooperative- learning exercises that target learning gaps made visible in students' responses or extend the concepts included in the exercise. The teacher implements JiTT in classroom by simple showing a sample of students' responses (anonymously) at front of the classroom. This is followed with classroom discussion, asking students to point out incomplete or correct thought processes, expand on submitted responses, or extend the highlighted concept. The teachers solves the question for the students. Thus, the teacher maintains close linkage between out-of-class responses and in-class activities provides motivation for students to complete JiTT exercises, supports ongoing formative assessment in the classroom, and promotes learning while concepts are	Students join in discussion, answer questions	cooperative- learning Discussion; Active- learning; Interactive- learning; Questioning Discussion; Active- learning; Interactive- learning; Interactive- learning; Interactive- learning; Ouestioning
and Develop in- class Active Learning Exercises Step 3 Implement ation of JiTT in classroom Step 4 Develop Comprehe nsive Response	Thus, the lecturer uses student responses to develop interactive, cooperative- learning exercises that target learning gaps made visible in students' responses or extend the concepts included in the exercise. The teacher implements JiTT in classroom by simple showing a sample of students' responses (anonymously) at front of the classroom. This is followed with classroom discussion, asking students to point out incomplete or correct thought processes, expand on submitted responses, or extend the highlighted concept. The teachers solves the question for the students. Thus, the teacher maintains close linkage between out-of-class responses and in-class activities provides motivation for students to complete JiTT exercises, supports ongoing formative assessment in the classroom, and promotes learning while concepts are fresh in students' minds	Students join in discussion, answer questions	cooperative- learning Discussion; Active- learning; Interactive- learning; Questioning Discussion; Active- learning; Interactive- learning; Interactive- learning; Questioning

Summary: After the classroom discussion, the teacher summaries the lesson by clearing misconceptions in students responses.

Evaluation: The teacher evaluates the lesson by asking students the following questions:

- 1. Enumerate horizontal format of manufacturing account.
- 2. State the vertical format of manufacturing account.
- 3. Identify some key important points that must be considered when preparing manufacturing account.
- 5. Factory overhead include -----, -----, -----,
- Assignment: Read the lesson material on the Edmodo site www.edmodo.com, answer the follow-up questions and submit responses via the same site next week. This as to get themselves ready for the next class

WEEK III

Lesson Plan on Trading, Profit and Loss Account for JiTT Experiment

Subject: Financial Accounting

Class: NCE II

Number of Students: 120

Duration: 1 hour

Topic: Preparation of Trading, Profit and Loss Account

Specific Objectives: By the end of the Lesson students should be able to:

- 1. Write down the format for preparing manufacturing trading, profit and loss accounts.
- 2. Prepare manufacturing, trading, profit and loss accounts.

Entry Behaviour: Since students have done manufacturing account. Based on that the teacher asks the student the following;

i. Enumerate format of manufacturing account.

Instructional Materials: Textbook, Lap top, projector, VCD and calculator.

Instructional Procedure

Instructional Materials: Textbook, Lap top, projector, VCD and calculator.

Instructional Procedure

CONTENT DEVELOP MENT	TEACHERS' PERFORMANCE ACTIVITIES	STUDENTS' PERFORMA NCE	SKILL EMPHASIZ ED
Step 1 Pre-Lesson Posting of Materials	 The lecturer posts the following lesson contents: Meaning of trading, profit and loss account. Benefit of preparing trading, profit and loss account. Format of trading, profit and loss account. Exercise on trading, profit and loss account. The teacher also posts the follow-up questions: 	ACTIVITIES The students read the material and attempt the follow-up questions individually at home within the time given.	Questioning, Web-mastery, Independent study habit; Problem- solving

Using the format of the trading, profit	
and loss account solve the following	
question.	
Okey is a manufacturer of expended	
materials The following balances have	
extracted from the books of the business	
for the year ended 31 st December 2014	
for the year chuck of December, 2011.	
N	
Capital	
18,400	
Drawings 720	
Stock at January, 2014	
Raw materials 8,000	
Work-in-progress 3,250	
Finished goods 6,000	
Manufacturing wages -Direct 6,450	
-Indirect 2,800	
Miscellaneous expenses 260	
Travelling expenses 2,400	
Rent and Rates- Factory 600	
Freehold premises 10,000	
Plant and Machinery- factory 16,000	
Sales 98,260	
Debtor 4.050	
Creditor 3.190	
Salaries 4.050	
Wages 3.500	
Bank 6 000	
Cash 2,000	
Selling and administration	
expenses 2 850	
Discount received 150	
Discount allowed 120	
Purchases of raw materials 45 000	
r drendses of raw materials +3,000	
Additional Information	
i. Stock at 31 st December, 2014	
Raw Materials N 9,500	
Work-in-progress N- 3.750	
Finished goods \mathbb{N} 5.840	
ii. Rates paid in advanced $\frac{1}{10}$	
iii. A provision for bad debts of \mathbf{N}	
300 is to be made	
iv. Depreciation provisions is to be	
provided on plant and machinery	
at 20%	
You are required to prepare	
trading and profit and Loss	
account using horizontal format	
for the year ended 31 st December	
2014	
2017.	1

	The time-frame for students to respond to the questions is also posted.		
Step 2	The lecturer reviews the responses from	Students join	Active-
Keview of	the students and develops in-class active-	in discussion,	learning;
Students'	rearning exercises based on the learning	answer	Interactive-
and	Thus, the lecturer uses student responses.	questions	cooperative
Develop in-	to develop interactive, cooperative-		learning
class Active	learning exercises that target learning		learning
Learning	gaps made visible in students' responses		
Exercises	or extend the concepts included in the		
	exercise.		
Step 3	The teacher implements JiTT in	Students join	Discussion;
Implement	classroom by simple showing a sample of	in discussion,	Active-
ation of	students' responses (anonymously) at	answer	learning;
JiTT in	front of the classroom. This is followed	questions	Interactive-
classroom	with classroom discussion, asking		learning,
	students to point out incomplete or		cooperative-
	correct thought processes, expand on		learning;
	submitted responses, or extend the		Questioning
<u>Stars</u> 4	The teachers solves the substitut for the		Diaguasiant
Step 4 Develop	tudents. Thus, the teacher maintains		Activo
Comprehe	close linkage between out-of-class		learning:
nsive	responses and in-class activities provides		Interactive-
Response	motivation for students to complete JiTT		learning.
	exercises, supports ongoing formative		cooperative-
	assessment in the classroom, and		learning;
	promotes learning while concepts are		Questioning
	fresh in students' minds.		· · · · · · · · · · · · · · · · · · ·

Evaluation: The teacher evaluates the lesson by asking students the following questions:

- **B.** Enumerate horizontal format of trading, profit and loss account.
- C. Mention four benefit of preparing trading, profit and loss account.
- **D.** ----- profit is arrive at after preparing trading account.

Summary: After the classroom discussion, the teacher summaries the lesson by clearing

misconceptions in students responses.

Assignment: Read the lesson material on the Edmodo site www.edmodo.com, answer the

follow-up questions and submit responses via the same site next week. This as

to get themselves ready for the next class

WEEK IV

Lesson plan on Balance Sheet (Statement of Financial Position) for JiTT

Subject: Financial Accounting

Class: NCE II

Duration: 1 hour

Topic: Preparation of Balance Sheet (Statement of Financial Position).

Specific Objectives: By the end of the Lesson students should be able to:

Specific Objectives:

- Define balance sheet.
- Discuss the benefit of balance sheet.
- Write down the format for balance sheet.
- Prepare a balance sheet or statement of financial position.

Entry Behaviour: Students have done manufacturing, trading and profit and loss account. Based on that, the teacher asks students the following question:

- i. What type of profit do we get at after preparing profit and loss account?
- ii. Which side of the account are expenses recorded?

Instructional Materials: Textbook, Lap top, projector, CD and calculator.

Instructional Procedure

CONTENT DEVELOP MENT	TEACHERS' PERFORMANCE ACTIVITIES	STUDENT S' PERFOR MANCE ACTIVITI ES	SKILL EMPHASIZ ED
Step 1	The lecturer posts the following lesson	The	Questioning,
Pre-Lesson	contents:	students	Web-mastery,
Posting of	1. Meaning of balance sheet trading, profit	read the	Independent
Materials	and loss account.	material and	study habit;
	2. Benefit of balance sheet.	attempt the	Problem-
	3. Formats of balance of balance sheet.	follow-up	solving
	4. Illustrations on balance sheet.	questions individually	

	The teacher also n	osts the	follow-up	at home	
	questions.	5565 the	romon up	within the	
	Using the format of ha	lance shee	et solve the	time given	
	following question	iunce shee	t solve the	time given.	
	Isaac Enwere I to in a manufacturer of				
	cooking utensils				
	The following information was extracted				
	from				
	the books of the comp	ny for the	Vear		
	anded	iny for the	year		
	31 st December 2015				
	51 December 2015	Dr	Cr		
		N	N		
	Plant and machinery	72 000			
	Conitol	72,000	148 800		
	Capital Motor vahiala	26.000	140,000		
		10,000			
	LOUSE LOUIS at	10,800			
			204.000		
	Durchosses of m	51.000	204,000		
	Purchases of raw	51,000			
	materials	46.000			
	Factory wages	46,800			
	Light and power	6,000			
	Machinery repairs	9,120			
	Motor vehicle	14,400			
	running expenses				
	Rent and insurance	13,920			
	Administrative staff	37,200			
	salaries				
	Administrative	10,800			
	expenses				
	Debtors	10,800			
	Creditors		19,800		
	Distribution staff	15,600			
	salaries				
	Cash in hand	15,000			
	Drawings	7,200			
	Stock of raw	600			
	material				
	TOTAL	366,240	366,240		
	The time-frame for stu	udents to	respond to		
	the questions is also pos	sted.			
Step 2	The lecturer reviews the	e responses	s from the	Students	Active-
Review of	students and develops in	n-class act	ive-	join in	learning;
Students'	learning exercises based	d on the lea	arning	discussion,	Interactive-
Responses	gaps identified from the	e JITT resp	onses.	answer	learning,
and	Thus, the lecturer uses s	student res	ponses to	questions	cooperative-
Develop in-	develop interactive, coc	perative-le	earning		learning
class Active	exercises that target learning gaps made				
Learning	visible in students' resp	onses or ex	stend the		
Exercises	concepts included in the	e exercise.		1	

Step 3	The teacher implements JiTT in classroom	Students	Discussion;
Implement	by simple showing a sample of students'	join in	Active-
ation of	responses (anonymously) at front of the	discussion,	learning;
JiTT in	classroom. This is followed with classroom	answer	Interactive-
classroom	discussion, asking students to point out	questions	learning,
	incomplete or correct thought processes,		cooperative-
	expand on submitted responses, or extend		learning;
	the highlighted concept.		Questioning
Step 4	The teachers solves the question for the		Discussion;
Develop	students. Thus, the teacher maintains close		Active-
Comprehe	linkage between out-of-class responses and		learning;
nsive	in-class activities provides motivation for		Interactive-
Response	students to complete JiTT exercises,		learning,
	supports ongoing formative assessment in		cooperative-
	the classroom, and promotes learning while		learning;
	concepts are fresh in students' minds.		Questioning

Evaluation: The teacher evaluates the lesson by asking students the following questions:

- Define balance sheet.
- Explain benefits of balance sheet.
- Enumerate format of balance sheet.

Summary: After the classroom discussion, the teacher summaries the lesson by clearing misconceptions in students responses.

Assignment/Closure: The teacher tells the students that they have come to the end of the experiment and they should read up their books and prepare for post- test.