TITLE PAGE

EFFECTS OF BLENDED LEARNING APPROACH ON BUSINESS EDUCATION STUDENTS' ACADEMIC ACHIEVEMENT AND RETENTION IN FINANCIAL ACCOUNTING IN UNIVERSITIES IN RIVERS STATE

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APPROVAL PAGE

This dissertation has been approved in partial fulfilment of the requirements for the award of Doctor of Philosophy (PhD) Degree in Business Education (Accountancy), Nnamdi Azikiwe University, Awka.

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CERTIFICATION PAGE

This is to certify that the research report here is the original work of Bupo, Godwin Omoni with registration number 2014197004P. The references to the existing works are duly acknowledged. The work contained in this dissertation has not been submitted to this University or any other institution in part or full for the award of a degree.

…… ……

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DEDICATION

This work is dedicated to my wonderful wife, Bupo, Martha Chinelo.

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ABSTRACT

This studysought to determine the effect of teaching financial accounting with blended learning approach on business education students' academic achievement and retention in universities in Rivers State universities. Four research questions were answered and six hypotheses were tested at 0.05 level of significance. Quasi-experimental non-randomized pre-test post-test control group research design was adopted for the study. The population of the study consisted of685 first-level business education students (of all options) in two universities that offer business education in Rivers State. The sample size was made upof 160 year-one business education students (in accountancy option) in the two universities (Rivers State University and Ignatius University of Education). Purposive sampling technique was adopted as intact classes were selected as experimental and control groups. Students in the experimental group were enrolled on a learning management system (MOODLE) which served as the virtual learning environment for the blended learning approach. The instrument for data collection was an achievement test titled *Financial Accounting Achievement Test* (FAAT) which contained 40 items covering three topics in introduction to financial accounting. The instrument was validated by three experts and standardized through item analysis. The reliability of the instrument was determined using Kuder Richardson (KR 21) formula which yielded a coefficient of 0.77. The instrument was administered as pre-test to both experimental and control groups. The teaching approaches were applied for five weeks after which the post-test was administered. The delayed post-test was administered two weeks after the post-test to test for retention. Mean and standard deviation were used to answer the research questions while Analysis of Covariance (ANCOVA) was used to the test the hypotheses at 0.05 level of significance. The findings of the study revealed that blended learning approach had a significant effect on students' achievement and retention in financial accounting than the conventional classroom approach. The results also show that male students did not significantly differ from female students in their achievement and retention scores in financial accounting when taught with blended learning approach. It was recommended, among others that, professional institutions regulating the practice of accounting (like ICAN and ABEN), should insist that lecturers of financial accounting use blended learning approach as it improves students' academic achievement and retention in the course.

CHAPTER ONE

INTRODUCTION

Background to the Study

Business education is a programme of study that prepares students for the world of work by exposing them to theoretical and practical knowledge in business practice and pedagogy. The programme has a slogan, *education for and about business*, which indicates that it covers the practical aspects of business knowledge and exposure of ways of teaching business. Oladunjoye (2016) viewed business education as the combination of subject areas that aid the acquisition, inculcation and development of proper values needed for the survival of an individual in a society. This has to do with acquiring the skills and competencies that are needed to carry out commerce effectively. Also, business education programme seeks to raise teachers of business, who are competent and skillful in subject areas in commercial sciences.

As a part of vocational education, business education plays a vital role in national development. The programme provides instruction and training for office occupations like secretaries, accountants, computer operators, data processors and so on, and also exposes students to the knowledge of economic, financial, marketing, accounting and managerial aspects of business endeavor (Oladunjoye, 2016). Students are therefore, trained to be self-reliant either by becoming entrepreneurs or by being gainfully employed. Graduates of business education programme should be able to start small businesses and manage them properly and also teach business subjects in the secondary school level.

Business education is taught at different levels of education with different nomenclature. At junior secondary level, the programme is taught as business studies with book-keeping, commerce, typing, and office practice, as component parts. In the senior secondary level,

business education is taught as financial accounting, commerce, economics, and entrepreneurship (practicals). At the tertiary level, the programme is operated by colleges of education, polytechnics and universities as a three-year, two-year or four-year course of study, depending on the nature of the programme enrolled for (Ezeani & Ogundola, 2016). Due to the robost nature of the programme, some tertiary institutions divide the programme of study into specialized options like accountancy, commerce and cooperatives, marketing, management and office management technology (formerly known as secretarial option). These options usually run general courses in the first level of study after which students focus on specialized subject areas from their second level. One of the general courses taught to first level students (especially in the university) is introduction to financial accounting because it is expected that every business owner or worker should have basic knowledge of the principles and practices of financial accounting.

Financial accounting is that aspect of accounting that is involved with the recording, analyzing, classifying, summarizing of financial transactions of a business enterprise and the interpretation of such information to the potential users of the information. Miller (2012) defined financial accounting as the art of recording, classifying and summarizing in a significant manner and in terms of money transactions and events which are in part at least, of financial character and interpreting the results thereof. The content of the course, introduction to financial accounting, as shown by the Department of Business Education Handbook, Rivers State University (2015), covers topics like the nature and scope of Accounting, the role of Accountants, History, principles and conventions of accounting, double entry bookkeeping system, subsidiary books, the ledger, the trial balance and final accounts among others. Introduction to financial accounting lays the foundation for other accounting courses that

students will have to offer before graduating. Accounting courses like management accounting, cost accounting, auditing and investigation, taxation and so on, derive their basic operations from principles covered in financial accounting. As a result, a proper understanding of introduction to financial accounting may result in better learning outcomes in other accounting courses. However, the approach adopted in teaching financial accounting could be a factor to be considered in measuring how students understand the course.

Generally, financial accounting is being taught with a conventional classroom approach where the teacher physically stands before the students and gives out the learning materials, using a variety of teaching methods, and assesses the students through home works and class activities. This approach (which is also known as the face-to-face approach) entails that the teacher coordinates the learning process by giving out the learning materials in class as students listen and possibly take notes. At appropriate times, assignments and class activities are given by the teacher to evaluate students' comprehension of what is taught. The benefits of this approach are far reaching. According to Cooper (2018), the conventional classroom approach encourages physical interaction between teacher and learner, supports socialization among learners and enhances motivation through the learning process. It encourages teacher in-person instruction where the teacher takes the center stage. However, this approach may not consider students' individual learning style, and also may not be flexible enough for self-paced learning. As a result, the conventional classroom approach may not be student-centered as students' participation may be restricted to only what the teacher permits in class. Integrating technology into the teaching and learning process (usually known as e-learning) could help to close the gap created by conventional classroom approach.

E-learning is the use of electronic devices in the teaching and learning process (Ndinechi & Bupo, 2015). It encompasses the usage of audio and video devices, synchronous and asynchronous processes, individual and group arrangements, social media, discussion boards, and any other electronically enabled communication tools in the education process. E-learning could be either fully online or a hybrid of online and face-to-face contact. The latter is known as blended learning. Blended learning is a term used to represent both teaching and learning processes that combine online learning with in-classroom learning.

Blended learning approach is the teaching/learning approach that brings together the face-to-face approach and the online learning approach. It is the hybrid of the two approaches to form a blend. Blended Learning Approach (BLA) is that approach that bridges the gap between the fully online learning approach and the conventional classroom approach. It integrates online learning with in-person instruction from the teacher. BLA involves combining classroom instruction and e-learning (Kiviniemi, 2014) which is increasing in tertiary institutions around the world (Graham, Woodfield, & Harrison, 2012). BLA has various models which include rotation model, flex model, self-blend model, and enriched-virtual model. The rotation model, is made of flipped-classroom model, lab-rotation model, station-rotation model and individual-rotation model. The model adopted for this study was the flipped classroom model.

In the conventional classroom approach, the class teacher provides the lesson materials to students in class and gives them take home assignments while in blended learning approach, flipped classroom model, the resources are provided online for the students via a virtual learning environment, and the class time is used for class works and exercises. So, students are expected to go through the lesson materials at home on their own and at their pace, then the exercises and

activities are done during the class time. This could encourage students' participation as they are able to go through the lesson materials on their own.

Blended learning is referred to as an approach rather than as a method of teaching. An approach is a broad way of viewing teaching and learning while a method refers to the specific steps and procedures employed in teaching. According to Rhalmi (2018) an approach is the sum of our philosophy about something that describes the nature, knowledge and conditions of the thing. A teaching approach, therefore, refers to the ideology or generalized view of how the teaching should be carried out. On the other hand, a teaching method refers to the step-by-step procedures adopted in passing on the learning content to the students. An approach could employ several teaching methods. For instance, lecture, discussion, problem-solving, and demonstration methods can be employed in the conventional classroom approach as well as in the blended learning approach. In this study, approach refers to the modality used in teaching, whether face-to-face or blended learning.

In applying the blended learning approach, educational resources for the lessons can be made available for the students via a Learning Management System (LMS). A Learning Management System (LMS) is a software application that coordinates the learning activities of an organization which includes teaching, assessing, tracking results, getting feedback and presentation of reports of the entire process. As defined by News Ghana (2013), it is a software application that is an excellent medium for training and evaluating students which enables teachers to deliver the right kind of content to the learners. LMS, as defined by IGIglobal (n.d.), is a software application that can be used to plan, implement, assess and track learning processes. It helps teachers to create and deliver content, monitor, assess as well as coordinate the entire learning process in other to achieve the objectives of the course. This can be done with the use

of online discussion chats, fora, discussion boards, individualized assignment platforms, threaded discussions, audio and video conferencing (Carnevale cited in Mafuna & Wadasango, 2016). All these are provided for in one learning management systems and as such, if adopted, could make teaching and learning process easier (Mtebe, 2015; Noe & Lee, 2013). LMS also provides a platform for interaction between lecturer and students outside the classroom through threaded discussion forum which further enhances students' participation in the educational process. There are many Learning Management Systems (LMS) that can be applied for either fully online learning or blended learning approaches. Examples include, but not limited to, Blackboard, Google classroom, Moodle, aTutor, Canvas, ecollege, and Desire2learn. Other online platforms that can be used for blending the learning activities include blogs, social networking sites such as Facebook, Whatsapp, Instagram, Youtube and so on.

In this study, the LMS that was employed as the virtual learning environment for the blended learning is Moodle. Moodle (Modular ObjectOriented Development Learning Environment) is an open source Learning Management System that enables teachers to arrange their materials in a student-friendly manner. Moodle is a free open source LMS built on a sound educational philosophy through collaboration from members of the Moodle community (Cole, 2005). It is open source because each user has access to the software's source code and can design the environment to suit any perculiarities. As a result, Moodle can be used in the blended learning approach as teachers can post educational resources and links online which can be accessed by students at any time and place as long as there is internet conection.

Academic achievement refers to the extent to which a student has achieved the short term goals of a course, measured in the scores obtained after a test. As defined by the United States Department of Agriculture (2014), academic achievement is the accomplishments of students

that results from study and learning in a schooling system. As it applies to education, academic achievement refers to the attainment of outcomes that are tied to educational experiences (York, Gibson, & Rankin, 2015). Students are exposed to educational experiences within a given period and then assessed to see the outcomes of such exposure. The results of the assessments are computed and then used as the achievement of the students.

Retention refers to the ability to remember what was taught after some time. According to Eze, Ezenwafor and Obidile (2016) retention has to do with the ability to remember and recall what has been taught after a given period of time as a mark of students' progress. Retention in financial accounting, as in most other courses, is very important as it shows the extent to which students can recall and apply the knowledge gained after a period of time. Both academic achievement and retention are measurement constructs that every teacher should be concerned with. Teachers are, therefore, to encourage students' participation in the learning process as this may improve their retention of what is taught. However, students' gender may also be a factor to consider as the teacher considers applying blending learning approach to the teaching of financial accounting.

Gender can be a factor that could influence the application of technology in the teaching and learning process. Alghamdi and Bayaga (2016) had observed that LMS was not actively used for teaching which was as a result of the attitude of the members of staff, age and gender. Also, male and female business education students may differ in their response to the usage of LMS in teaching and this may influence their achievement. As pointed out in Eze, Ezenwafor and Obidile (2016), male and female students who were taught financial accounting using problem based method did not differ significantly in their academic performance and retention

scores in the course. Male and female students' achievement and retention in financial accounting may differ when the course is taught with innovative approaches.

Financial accounting in Universities in Rivers State is generally taught using the conventional classroom approach. The lecturer delivers the learning content in class as students participate by asking questions and doing class activites. However, students' achievement in financial accounting over the years, has been shown to be below average (Bupo, Oboh & Nwosu, 2018, see Appendix V, pg. 200). This gave rise to the need to determine whether blended learning approach can improve students' achievement and retention in financial accounting better than the conventional classroom approach.

Statement of the Problem

Proper knowledge of financial accounting and the application of its principles will help business education students on graduation to perform accounting duties in any organization they find themselves. However, business education students appear to be performing poorly in the financial accounting course. Despite efforts of teachers to make classroom instruction interactive and engaging, students' retention and academic achievement in this skill course have been low.

Students' poor performance in financial accounting could lead to frustration and increase in drop-out levels which may lead to increased unemployment among youths in the society. Also, students' poor performance in financial accounting could result in their inability to perform accounting duties in the public or private institutions where they will be employed after graduation. The resultant effect of this could be loss of jobs and loss of confidence in the graduates of business education by employers of labour.

The problem of students' poor performance in financial accounting at the tertiary institution level may be as a result of teaching approach and learning environment, among other factors. Teaching many students, sitting in a class that is most times overcrowded, as the case is with business education departments in Rivers State Universities, may lead to lack of comprehension of what is taught. The problem of poor performance and its ripple effect on society calls for the need to try new approaches in the teaching of financial accounting. This 21st Century is characterized by technological innovations that are applicable in education. One of such innovation is e-learning. Therefore, if e-learning is applied in its blended form to the teaching of financial accounting, what effect would it have on the business education students' academic achievement and retention? This is the problem this study sought to address.

Purpose of the study

The purpose of the study was to ascertain the effects of blended learning approach on business education students' academic achievement and retention in financial accounting in Universities in Rivers State. Specifically, the study sought to determine:

1. The difference in mean academic achievement scores of business education students taught financial accounting using blended learning approach and those taught using conventional classroom approach.
2. The difference in mean retention scores of business education students taught financial accounting using blended learning approach and those taught using conventional classroom approach.
3. The difference in mean academic achievement scores of male and female students taught financial accounting using blended learning approach.

4. The difference in mean retention scores of male and female students taught financial accounting using blended learning approach.
5. The interaction effect of blended learning approach, conventional classroom approach and gender on students' mean achievement scores in financial accounting.
6. The interaction effect of blended learning approach, conventional classroom approach and gender on students' mean retention scores in financial accounting.

Significance of the Study

The findings of this study would be beneficial to business educators, management of universities, professional bodies in charge of accounting education and business education students. The findings of the study, when published, will be of benefit to business educators who are faced with the challenge of handling large classes. The results indicate the effect of blended learning on students' achievement and retention in financial accounting. As such, business and accounting educators can consider the option of adopting blended learning approaches in teaching. Also, teachers can see the effect of the flipped classroom model of blended learning on students' achievement and retention.

The findings of the study would be of immense benefit to management of universities in Rivers State who have been trying to adopt e-learning solutions in their educational process. The findings of the study, when published in a reputable journal, will show how the usage of a learning management system (with the blended learning approach) affected students' achievement and retention in financial accounting. This could influence their adoption of learning management systems in their institutions.

Professional bodies that are saddled with the responsibility of regulating business and accounting education, would benefit from the findings of the study. The Association of Business

Educators of Nigeria (ABEN) and the Institute of Chartered Accountants of Nigeria (ICAN), could consider the adoption of blended learning approaches as a standard for teaching students in tertiary institutions. This can be made possible as the findings of the study showed the effect of blended learning approach on students' academic achievement and retention in financial accounting.

Business education students, both at undergraduate and post-graduate levels, would benefit from the finding of this study. The findings, when published, will show how male and female students differ in their academic achievement and retention in financial accounting when blended learning approach is used. Also, the results of this study would open up other areas of research about Learning Management Systems on which students may intend to carry out their own research.

Scope of the Study

In this study, the blended learning model used was the flipped-classroom model. This model entailed that the learning resources were made available to the students via a Learning Management System (LMS) which they could access while at home and then class time was used for class activities and solving problems. The LMS used in this study was Moodle because it is more robust and it is also an open source management system.

The content of the course, Introduction to Financial Accounting 2, comprises of topics such as manufacturing accounting, bank reconciliation statement, control accounts, accounting for single entry and incomplete records, accounting for non-profit oriented organizations, and accounting for depreciation. However, this study only covered three topics: manufacturing accounts, bank reconciliation statement, and control accounts.

Research Questions

The following research questions guided the study:

1. What is the difference in mean academic achievement scores of business education students taught financial accounting using blended learning approach and those taught using conventional classroom approach?
2. What is the difference in mean retention scores of business education students taught Financial Accounting using blended learning approach and those taught using conventional classroom approach?
3. What is the difference in mean academic achievement scores of male and female students taught financial accounting using blended learning approach?
4. What is the difference in mean retention scores of male and female students taught financial accounting using blended learning approach?

Hypotheses

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

1. There is no significant difference between the academic achievement scores of students taught financial accounting using blended learning approach and those taught using conventional classroom approach.
2. There is no significant difference between the retention scores of students taught financial accounting using blended learning approach and those taught using conventional classroom approach.

3. There is no significant difference between the academic achievement scores of male and female students taught financial accounting using blended learning approach.
4. There is no significant difference between the retention scores of male and female students taught financial accounting using blended learning approach.
5. There is no significant interaction effect of blended learning approach, conventional approach and gender on students' achievement scores in financial accounting.
6. There is no significant interaction effect of blended learning approach, conventional approach and gender on students' retention scores in financial accounting.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

This chapter contains the review of literature related to the study. The review was done under the following sub-headings:

Conceptual Framework

- Conventional Classroom Approach
- Blended Learning Approach
- Business Education
- Financial Accounting
- Academic Achievement
- Retention

Theoretical Framework

- Cognitive learning theory
- Constructivist learning theory
- Connectivism learning theory

Theoretical Studies

- Advantages and Challenges of Conventional Approach
- Types of Blended Learning Models
- Flipped Classroom Model
- Learning Management Systems applied in Blended Learning Approach
- Moodle: A Free Open Source LMS
- Gender influence in Technology Integration

Empirical Studies

Blended learning approach and students' academic achievement

Blended learning approach and students' retention

Gender and academic achievement

Gender and retention

Summary of Review of Related Literature

Conceptual Framework

The following concepts were reviewed under this section: conventional classroom approach, blended learning approach, business education, financial accounting, academic achievement and retention.

Conventional Classroom Approach

This is the approach of teaching where the teacher is present physically with the students in class. According to Redmond (2011),conventional classroom approach is that approach in which learning takes place where the teacher and the students are in the same geographical location. Imogen (2018) also posited that the conventional classroom approach is that approach where physical human interactions are encouraged as students interact with the teacher and their classmates face-to-face. Sometimes called the face-to-face teaching/learning approach, the conventional approach refers to a situation where the instructor and the student of an educational institution are in a place devoted to instruction and the teaching and learning take place at the same time. (Purdue University, 2019).

Blended Learning Approach

Blended learning approach is the learning approach that combines classroom learning and online learning processes (Noni, Abdullah, & Ismail, 2017; Bicen, Ozdamli, & Uzunboylu, 2012). Blended learning is that approach that brings together different learning models to create

a learning environment most suitable for the students. Graham (2006) considered blended learning to be that approach that brings together the traditional face-to-face teaching and online learning.Also,Kiviniemi (2014) defined blended learning as the learning model that combines online and face-to-face components into one new module that is viewed as one course. That is, blended learning approach should not be viewed as a strange mix of the two approaches (online and traditional approach) but a synchronized approach that is now seen as working together. According to Lalima and Dangwal (2017), blended learning is an innovative approach that encourages the synchronization of the advantages of both traditional teaching in classroom and ICT-supported learning modules (offline or online).

The definition of blended learning as the combination of online learning approach and face-to-face approach has been contested as reported by Benson, Anderson, and Ooms (2011). The contest was as a result of the argument that such definition ignores the need for course design and re-engineering of the pedagogical process (Vaughan cited in Benson, Anderson & Ooms, 2011). That is, blended learning goes beyond introducing technology to the traditional classroom teaching; it exceeds putting some educational content online for easy access by the students. Vaughan is of the idea that blended learning definition should not be narrowed but expanded to include the design of the course and pedagogical process of delivering the course with the blended approach. Also Oliver and Tingwell, cited in Department of Education and Early Childhood Development (2012), argued that blended learning has been ill-defined as describing teaching with technology. To them, the term blended learning will become redundant when it is seen as the practice of mixing traditional classroom approach with technology. Earlier on, Singh (2003) had opined that blended learning is based on the fact that learning is not a one-time act but a continuous process that incorporates various learning media. Department of

Education and Early Childhood Development (2012) defined blended learning, as it is practiced in Victorian Schools, to "refer to the planned implementation of a learning model that integrates student-centred, traditional in-class learning with other flexible learning methodologies using mobile and web-based online (especially collaborative) approaches in order to realise strategic advantages for the education system", pg 6. This shows that the blending process has to be properly planned and deliberately structured with the integration of appropriate technologies that will aid in realising the strategic goals set.

Futhermore, Aretio (2018) defined blended learning as "an integration of means, resources, technologies, methodologies, activities, strategies and, both face-to-face and distance learning techniques to satisfy each specific learning need" pg 9. From the above definitions, one could say that blended learning, as a term on its own, is not mainly a combination of online and offline learning. It could be seen as a combination of varioius educational methods, approaches and techniques to achieve a particular learning goal. With the various definitions that several authors have given concerning blended learning and in view of the arguments, in this study blended learning is viewed as the deliberate combination of aspects of conventional face-to-face instruction with online learning approach, taking into consideration the design and pedagogy, to produce a blend that is more student-centered and encourages self-paced learning.

Business Education

Business education has been defined severally by authors as an aspect of vocational education that pursues the acquisition of skills, attitudes, aptitudes, and knowledge that will enable graduates of the programme to function effectively in the world of work (Bupo & Okiridu, 2017; Udo & Babangida, 2017; Ubulom & Singer, 2017). According to Udo (2016), it is a comprehensive activity-based occupational education programme that involves the

acquisition of practical skills and knowledge needed to succeed in a chosen business career. The courses taught in business education have as their general objective, the inculcation of business skills, knowledge and exposure with which students can be self-reliant in the world of work. Oladunjoye (2016) defined business education as a conglomerate of courses that is concerned with the acquisition, development and inculcation of the proper values for the survival of the individual and the society. Ezeani and Ogundola (2016) defined business education as a course that offers knowledge and competences needed for entry into business occupations of all kinds and prospering in them. Ile, Odimmega and Azu (2016) defined business education as "an educational process or context, which has the primary aim of preparing people for roles in enterprises" pg. 123. Ezeonwurie (2016) further alluded that business education is a component of vocational technical education programme that prepares individuals for career in business and also to be an intelligent consumer of economic goods and services.

'Business education' and 'business teacher education' are terms that have been used interchangeably, although there are differences between them. Agboola (2015) explained that the terms are different: while business education entails education or training in business related courses like marketing, accountancy, business administration etc., business teacher education entails both the training of students in the business related area and also in the teaching of those courses. The business teacher education (as it is called in the United States of America) provides both professional training and pedagogical training for students. The students, upon graduation, are able to perform roles as busines teachers, business owners and business professionals. In Nigeria, the two terms (business education and business teacher education) are used interchangeably. In the words of Agboola (2015), the business educator is "anyone who has

undergone professional training in a business or business-related course and has, in addition, undergone training in the pedagogy of that course"pg 5.

The business education programme, as administered in tertairy instutions, is a 4-year, 3-year or 2-year programme run by an accredited university, college of education or polytechnic. The number of years for running the programme, depends on what degree is sought by the students and the tertairy instution that the programme is undertaken. As a 4-year programme in universities, the business education programme is usually divided into options that cover specialised subject areas. The options of study include: Accountancy option, Management option, Marketing option (also called commerce and cooperatives option) and OfficeTechnology and Management (sometimes called Secretarial option). The diffent options offer similar general courses in their first year to give all the students a grasp of general business practice. Then, from the second year, specialised courses in the different areas of specialization are then given to the students. One of the general courses offered by business education students in their first year is *Introduction to Financial Accounting.* This is the first of series of Accounting courses that business education students offer. It lays the foundation for understanding the other aspects of accounting (cost accounting, management accounting, taxation, auditing and so on).

Financial Accounting

Accounting has been said to be the language of business (Mahesh, n.d.) because it has to do with communicating the reports of financial transactions of a particular organization to stakeholders who will use such information for investment or other purposes. Financial accounting, according to Igben (2009), is the process of collecting, recording, presenting and analyzing financial information for the users of organizations' financial statements. Accounting is the art of recording, classifying and summarizing in a significant manner and in terms of

money transactions and events which are in part at least, of financial character and interpreting the results thereof (Miller, 2012). All organizations, profit and non-profit organizations, need to know how their organizations have fared financially over a period of time. For that to be possible, records have to be diligently kept, analyzed and summarized. It is the process of doing this that is called financial accounting.

Financial accounting is that aspect of accounting that is involved with the recording, analyzing, classifying, summarizing of financial transactions of a business enterprise and the interpretation of such information to the potential users of the information. The course, *Introduction to Financial Accounting*, is offered in two semesters of the first year of the business education programme. The content of the course, Introduction to Financial Accounting, as shown by the Department of Business Education, Rivers State University (2015), covers topics like the nature and scope of Accounting, the role of Accountants, History, principles and conventions of accounting, Double entry bookkeeping system, subsidiary books, the ledger, the trial balance, final accounts, manufacturing accounts, bank reconciliation statement among others.

Academic Achievement

Achievement refers to the attainment level of a person towards a pre-set goal. It refers to the level at which the goals set by someone have been attained after a specific period of time. According to Afzal and Afzal (2015), achievement has to do with the completion of a task, an attainment and accomplishment after a specified period of training. As it applies to education, academic achievement refers to the attainment of outcomes that are tied to educational experiences (York, Gibson, & Rankin, 2015). Students are exposed to educational experiences within a given period and then assessed to see the outcomes of such exposure. The results of the assessments are computed and then used as the achievement of the students. Osokoya, as cited

in Ogundokun and Adeyemo (2010), defined academic achievement as the product of the learning experience offered to students. It is the outcome of instruction and a measure of what the students have learned during the teaching-learning process. Academic achievement goes beyond measuring the extent to which schools have achieve their goals but is a major determinant of a person's future attainment and of the Nation's progress (Meenu, 2016).

Several authors have tried to differentiate between the terms, academic performance and academic achievement. Yusuf (n.d.) attempted to differentiate between academic achievement and academic performance. According to him, academic performance refers to the observable and measurable behaviour that a student has after undergoing teaching and at a particular point in time. Performance consists of students' scores in a particular teacher-made tests, term-examinations and so on. On the other hand, Yusuf sees academic achievement to mean measurable behaviour of students in a standardized test. Achievement test is usually constructed and standardized to measure proficiency in school subjects. On the contrary, Afzal and Afzal (2015) did not see any difference between the two terms. In this study, academic achievement referred to the students' scores in financial accounting achievement test administered to them.

Retention

Retention has been defined severally by authors to mean ability to remember and recall things (Eze, Ezenwafor & Obidile, 2016; Safo, Ezenwa & Wushishi, 2013;Hornby, 2001). It is the ability to keep the possession of knowledge of lesson learnt and to recall or apply such knowledge when it is required (Safo, Ezenwa & Wushishi, 2013). Retention is the continued capacity to behave in specific ways that have been learned previously (Iji, 2010). Iji also pointed out that retention is measured in collaboration with achievement. Eze, Ezenwafor and Obidile defined retention to be "the ability to recall or remember what has been taught after a given time

as a measure of students' progress", pg 2. Students' retention level is vital to their learning and the teacher ought to know this. Hafeez and Aamir (2014) explained retention to mean the process of storing encoded information or events and recalling them in responses to external stimuli. Also, Parker (2009) defined retention as the ability to remember facts and other information. For this study, retention is defined as the ability of students to recall what they have been taught.

Theoretical Framework

Theories form the basis for the expansion of knowledge. It is essential to develop models and theories because they help the knowledge creation process and give guidance into inquiry and practice (Graham, Henrie, & Gibbons, 2014). Three theories that relate to the blended learning approach will be discussed in this section:

a) Cognitive learning theory
b) Constructivist learning theory
c) Connectivism learning theory

Cognitive Learning Theory

The cognitive learning theory was propounded by Jean Piaget (1896-1980). The theory states that knowledge is constructed from learners' existing cognitive structures.It emphasizes that learning is based on what the learner knows rather than what he/she does (Arshad, Khawaja, & Saad, 2012). According to Bratton, Callinan, Forshaw, and Sawchuk (2007), the origin of the cognitive learning theory can be traced to the works and researchers of some German gestalt theorists (Max Wertheimer, 1880-1943; Kurt Lewin, 1886-1941; and Wolfgang Kohler, 1887-1967). These psychologists were of the view that human consciousness cannot be fully comprehended by unscrambling its component parts but by studying the entire whole. That is,

studies of human nature should be taken as a whole and should not be discussed in separate bits. The concept of wholeness, as considered by these psychologists, suggest that the whole is greater than the sum of its parts (Khalid, 2015). While Wolfgang suggested that learning occurs in a form of insight that does not need any training, stimuli or reinforcement, Kurt was of the idea that human behavior is affected by two factors (positive and negative) which act as forces and influences his direction. The cognitive learning theory evolved as the suggestions of these psychologists were further studied.

The contributions of child psychologist, Jean Piaget (1896-1980), also aided the development of the theory. Piaget, through his studies and write-ups, suggested that learners develop 'schemas' as they are exposed to different levels of educational training. Schema here, means both the category of knowledge and the process of acquiring such knowledge. According to Piaget, as children are exposed to different experiences, they form new schemas and more exposure will lead to either the modification or change of the schemas. With this understanding, the teacher should direct the teaching process to be one that exposes students to learning materials in such a way that enables the students to actively process such materials with their existing knowledge.

The cognitive learning theory lays the foundation for how concepts are analyzed and procedures organized especially as it has to do with curriculum design. For knowledge to be acquired there has to be proper structuring of the curriculum. According to Franks, kramer, Rankin, and Wooten (2018) knowledge is acquired as a result of the interaction of the experiences (old and new) that the child is exposed to. As it applies to blended learning, the teacher is supposed to arrange the curriculum in such a way that new exposure to knowledge is being 'assimilated' or 'accomodated' by the previous knowledge or 'schema' of the student. The

learners are then able to comprehend how new concepts and old information interact even when technology is applied in the learning process. Hartley, cited by Arshad, Khawaja, and Saad (2012) explained how the cognitive learning theory applies to blended learning: "…instruction should be well organized and clearly structured, perceptual features of the task and prior knowledge is important…", pg. 184. The theory has it that as children grow, they are able to understand more sophisticated material. Also that new knowledge is acquired and understood as it is tied to a previous knowledge. The theory therefore, considers age difference and application in the knowledge acquisition process. The teacher who is applying the blended approach, should be able to arrange educational materials that stimulate learning as learners build on their knowledge by applying previous knowledge. Though the cognitive theory focused on organizing learning content in an orderly manner, it focused only on teacher-activity and did not cover student-centered learning activity. Hence, the need to consider constructivist learning theory.

Constructivist Learning Theory

The constructivist learning theory is of the view that learning occurs through an active process of creating knowledge based on previous knowledge. Contributors to this theory are Jean Piaget (1896-1980) and Lev Vygotsky (1896-1934). Piaget propounded the cognitive constructivist learning theory which premises that we build or construct new knowledge based on our existing knowledge and our understanding of the world around us. Vygotsky propounded the social constructivist learning theory which emphasizes that learning occurs based on the interactions of students with other students. Vygotsky opined that children are active learners and they have the ability to construct their own knowledge based on their level of experience (Khalid, 2015). The assumptions of Vygotsky theory include:

a) A child's stage of development has to be defined before his/her cognitive skills can be measured (Harry, 2008).
b) "Cognitive skills are mediated through psychological tools or mediators that facilitate transforming and assessing mental processes and functions such as language, words, counting systems, mnemonic techniques, algebraic symbols, artwork, writing patterns, maps…" (Khalid, 2015, p. 317).
c) Cognitive skills are developed in socio-cultural settings. According to Vygotsky, knowledge is collaborative and builds up as people interact in social settings.

What this implies is that, as social interaction is important for human existence, it is also very important for education (Chew & Wee, 2015). Students like to have their experiences evaluated or checked by others (especially their peers). They would like to know what other people think concerning what they are doing or have done. Social constructivism argues that individuals build their own learning patterns as they interact with others. It views learning as a process where learners actively construct their own representation of learning based on their prior experience and knowledge (Franks, kramer, Rankin, & Wooten, 2018).

Social constructionists are of the view that knowledge is constructed rather than created (Andrews, 2012). Acccording to Koohang (2009), designing activities with a constructivist approach will include elements of cooperation, collaboration, real life examples, allowing various perspectives and representations of ideas etc. This approach makes the teacher a facilitator and not a dictator. It makes the students active learners as they construct their own knowledge which is a critical point in blended learning approach. The constructivist learning theory did not cover the application of technology and internet in the learning process hence the need to consider the connectivism learning theory.

Connectivism Learning Theory

Connectivism learning theory is a theory that describes how people in the digital age learn through transfer and sharing of information over the internet. The proponents of this theory are Siemens (2005) and Downes (2010) who tried to explain how the internet and all its applications have facilitated the way people share information and learn in an age that is technologically advancing by the day. The theory explains how digital technology, especially those enabled by the internet like blogs, wikis, discussion forum, social media networks, emails etc., can facilitate the learning process through information sharing. The theory posits that learning starts when a learner connects to a learning community (online) and shares knowledge with members of the community (Kop & Hill, 2008). Learning community here, refers to a coming together of like-minds who have the same interests and they encourage dialogue, information sharing, interaction and discussions. Connectivism to Duke, Harper, and Johnston (2013:6) is "social learning that is networked". That is, learning that is facilitated by a network of people (called the learning group). Downes, as cited in Duke et. al, posisted that connectivism suggests that knowledge is shared across a network of connections which therefore means that learning involves having the ability to connect with other people.

In connectivism, learning groups are seen as 'nodes' which refer to the connection points that are found on a network. These connection points, which could be two or more on a network, enable the sharing of information on the network. The strength of the node will depend on the level of information transferred between them (Downes cited by Kop & Hill, 2008). According to Siemens (2005), learning occurs within an unclear environment that is ever changing especially in a digital era. Siemens therefore gave the following principles of connectivism (pg. 7):

- Learning and knowledge rests in diversity of opinions.
- Learning is a process of connecting specialized nodes or information sources.
- Learning may reside in non-human appliances.
- Capacity to know more is more critical than what is currently known
- Nurturing and maintaining connections is needed to facilitate continual learning.
- Ability to see connections between fields, ideas, and concepts is a core skill.
- Currency (accurate, up-to-date knowledge) is the intent of all connectivist learning activities.
- Decision-making is a learning process. Choosing what to learn and the meaning of incoming information is seen through the lens of a shifting reality. While there is a right answer now, it may be wrong tomorrow due to alterations in the information climate affecting the decision.

The implication of the connectivism learning theory to blended learning is that the teacher should be able to create a learning environment in which students can connect with each other through discussion forum, chats, emails and peer review assignments. Blended learning approach which adopts the connectivism theory will create the opportunity for student to learn by interacting with their peers online through peer review assignments and discussion forum.

Theoretical Studies

Under this section, literature on the advantages and challenges of conventional classroom approach, reasons for blended learning approach, types of blended learning models, learning management systems, Moodle, Instructional design for the Moodle site, and gender influence in technology integration were reviewed.

Advantages and Challenges of Conventional Approach

The merits of conventional face-to-face approach were pointed out by Imogen (2018) to include: enhanced human interactions, instant reply to students' queries, socialization of peers, and physical collaboration among learners. Human interactions is encouraged as the students and the teachers are in a physical classroom viewing what is been done. Students are free to ask questions to which instant replies could be given by the teacher. This approach encourages physical collaboration which is needed for constructive development of learners.

Although the emphasy for e-learning has been on the increase, the importance of in-class instructor-led training can not be overlooked. Tobin (2017) pointed out ten advantanges of face-to-face learning. Some of the advantages Tobin raised include:

Focus: Students tend to focus more in a physical classroom than on an e-learning platform. The classroom reduces distraction levels that other approaches may have.

Confidentiality: In a classroom setting, a good teacher tends to create an environment that fosters confidentiality. Students can confide in the teacher as issues discussed in the class are only for the classroom and no more elsewhere.

Practice: Face-to-face approach encourages classroom practise of assignments and other activities better than an online approach. With interaction with other students and the teacher, a student is encouraged to participate in the class activities.

Adaptability: Tobin (2017) pointed out that a good instructor can adapt the classroom activities to the individual needs of the students. Although this may be hard to do considering the time available for each class and the amount of work to be covered.

Some other advantages of the face-to-face approach to learning, as posited by Tobin (2017) include individual attention to students' needs, establishing a dialogue between teacher and student, learning from other participants, building personal network and breaking hindrances to personal communication. However, the challenges encountered in the face-to-face approach are worth considering.

One challenge prevalent in the face-to-face approach is that learning can be stifled as only dominant personalities in the class may take the bulk of discussions (Danbury, 2018). Students who are introverted may be sidelined as they may not want to struggle with the extroverted students. Another challenge is the inability to balance individual learning needs in the classroom (Doskocil, 2016). Students have different learning speed, comprehension and assimilation levels. The face-to-face approach may not give room for the teacher to put students' individual difference into consideration. In the face-to-face approach, the pedagogical process is sometimes content-driven. That is, the teacher is driven to finish the delivery of learning content within the stipulated time. Emphasis on content-delivery may hinder the teacher from focusing on the learning needs of the students. These are some of the challenges faced in the face-to-face learning approach.

Reasons for Blended Learning Approach

Learning, in recent times, has been facilitated by the internet and many educational institutions have been trying to change from face-to-face approach to online approach. This is only possible when all the facilities needed for a full online approach are available. Although Garrison and Kanuka (2004) opined that the hybrid of text-based asynchronous internet learning with face-to-face learning is on the increase, the adequacy of facilities and the necessary infrastructure have made the full integration of online learning difficult. Wright (2014) pointed

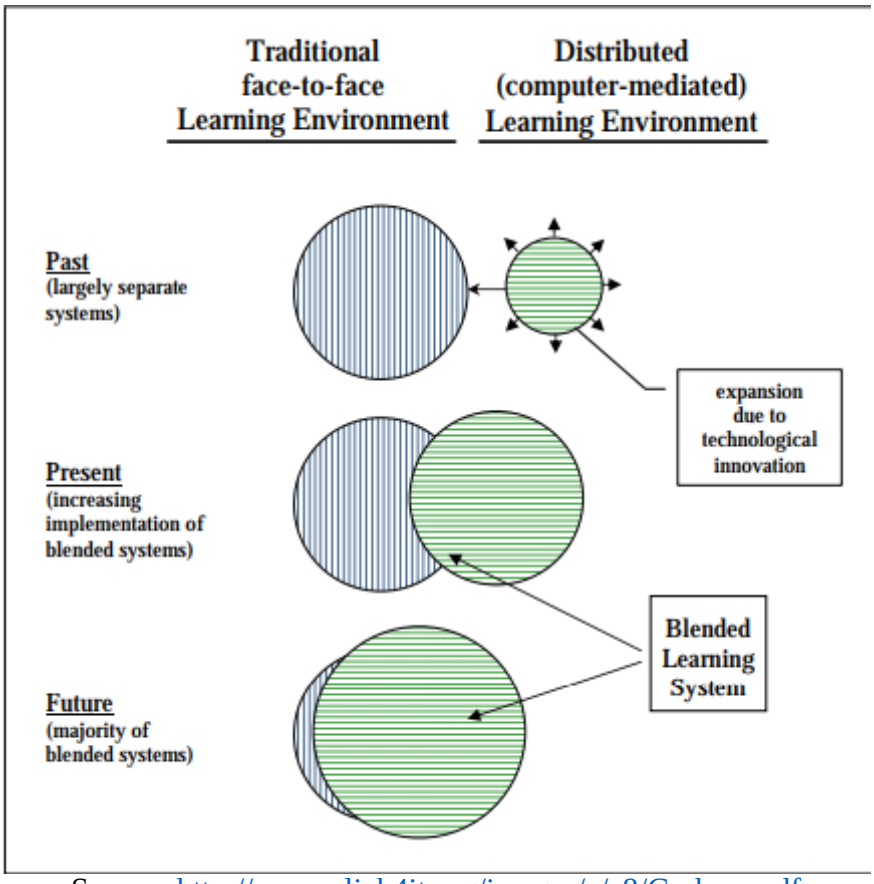
out that electric power, internet connectivity, training and professional developmentare issues that, when not considered, slow down the integration of technology in the teaching and learning process. In other to bridge the gap between online learning and the face-to-face classroom learning approaches, educationists have sought to find a blend of the two approaches. This blend or mixture (so to speak) of the two approaches is referred to as blended learning.

In blended learning approach, the teacher attempts to synchronize face-to-face learning experience with online learning experiences to give the students a taste of the two approaches. Each approach complements the other. For instance, lecture materials can be provided online for students to study whenever and wherever they are able to connect to the internet, thereby freeing up class time which can be used for more practical examples and explanations (Kiviniemi, 2014). In the traditional face-to-face approach, the teacher pilots the helm of affairs and is the center of attraction, the originator and director of the learning process. However, in the blended learning approach, the learner takes the center stage and the interaction between teacher and learner becomes much more flexible (Anh, 2017). In the blended learning approach the teacher is only a facilitator of the process while the learners are engaged in active learning.

Blended Learning Approach brings together the advantages of the traditional face-to-face learning and those of online learning (Kose, 2010; Benson, Anderson, & Ooms, 2011) and helps to reduce the disadvantages of the two approaches (Pima, Odetayo, Iqbal, & Sedoyeta, 2018). Kose (2010) posited that though e-learning platforms are very effective in providing a conducive environment for students to learn, there is still the problem of socialization of students. That is, students socialize more in a face-to-face setting than on an online forum. Also, student-dropout rate is higher in e-learning approaches than in conventional face-to-face approach (Berge & Yi-Ping, 2004). However, online learning provides time-flexibility, place-flexibility (Gecer, 2013)

and takes into consideration individual learning style and speed, which are not catered for in the traditional face-to-face approach. The disadvantages of e-learning as argued by Kose (2010) and Berge and Yi-Ping (2004) led to the search for an approach that bridges the gap created by e-learning. Blended learning is that approach that brings together different learning models to create a learning environment most suited for the students. Learning resources and materials are provided to the students via an online platform (e-learning) while other learning activities are held in class with the teacher. This way, the students are able to access learning resources online (whenever and wherever they choose to) and learn from in-person instruction of the teacher.

The evolution of blended learning was clearly explained by Graham (2006) with a diagram that shows the historical progression of learning models from face-to-face to online. According to Graham, blended learning goes beyond a mixture of teaching methods to a synchronization of learning approaches. Actually, there is no learning approach that does not contain a mixture of teaching methods. So, the focus in blended learning is not the teaching methodology applied but the teaching and learning platform/environment employed. Graham considered blended learning to be that approach that brings together the traditional face-to-face teaching and online learning.



Source: http://www.click4it.org/images/a/a8/Graham.pdf

Figure 1: Progressive convergence of traditional F2F and distributed environments allowing development of blended learning systems

Figure 1 shows that the evolution of blended learning has seen a shift from traditional face-to-face learning environment towards a distributed (computer-mediated) learning environment over the years. Graham illustrated this in Figure 1 depicting progressive convergence of traditional face-to-face and distributed environment allowing development of blended learning systems.

The integration of technology into the educational system has brought blended learning to the lime light. Blended learning has been used in distance education approaches where the students could undergo a few classes with the teacher and then other activities were done through correspondence. According to Aretio (2018), blended learning was used to support face-to-face

contact in the distance education model long before technology came on board. However, the advancement of technology and its adoption for educational reasons has led to a more robust application of blended learning.

Types of Blended Learning Models

There are many blended learning models that can be used in tertiary education level. The essence of all the models of blended learning approach is that the student spends sometime in the classroom with the teacher for in-person instruction, and sometime outside the classroom for personalized instruction (usually via a virtual learning environment). According to Horn and Staker (2014a), there are four major models of blends between brick-and-mortar learning and online learning. The four models are:

1. Rotation Model

   This model has other sub-models:

   a. Station Rotation

   b. Lab Rotation

   c. Flipped Classroom

   d. Individual rotation

2. Flex Model
3. Self-Blend (A la Carte) Model and
4. Enriched Virtual Model

Figure 2: Blended Learning Models

(Source: http://buildinghope.org/wp-content/uploads/2016/07/BlendedLearningReport.pdf)

Rotation Model

In the rotation models, the students switch between the teaching approaches at the discretion of the teacher. These are models in which the students rotate between teaching modalities (classroom and online) at the instance of the teacher. According to ReadingHorizons (2016), "the rotation often consists of students either moving between online learning, small-group instruction, and paper-pencil work, or moving between whole-class instruction and online learning", pg 7. The learners rotate between learning modalities, one of which is online, at the discretion of the teacher (Horn & Staker, 2014b). The rotation model consist of station rotation, lab rotation, flipped classroom and individual rotation.

Station Rotation: This model is sometimes called classroom rotation or in-class rotation (Google Sites, n.d.). In this model, students rotate within stations in the classroom or set of classrooms using different modalities like individul learning using online learning activity, independent work at student's desk and small group direct instruction with the teacher. The class is usally arranged in station-form (online station, small-group stations, group project, individual tutoring etc.). All the students are expected to rotate through all the stations as the teacher works around and attends to the students at different stations. According to Maxwell and Fisher (2017), students rotate among learning centres (learning stations) that engage the students in several learning activities all geared towards achieving a learning goal. This model can be used when the class size is manageable and the necessary facilities are available in the classroom. See figure 3.

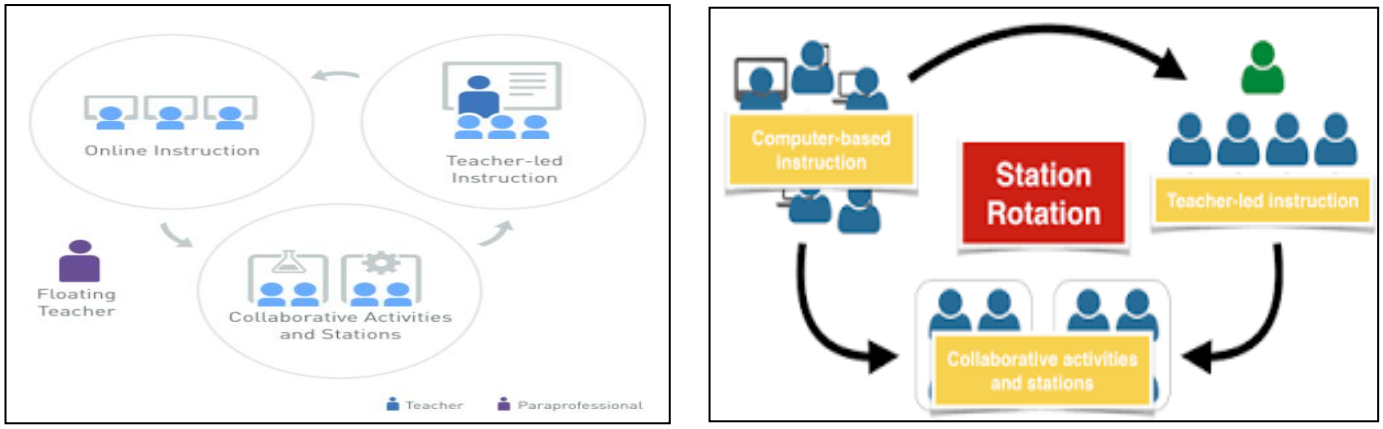


Figure 3: Station Rotation Charts (sites.google.com)

Lab Rotation: In the lab rotation model, the students rotate from the class to a computer lab to carry out part of the lessons taught in the class. The lab rotation model is very similar to the station rotation model, the only difference is that more class space is freed up in the lab rotation model (ReadingHorizons, 2016). Also, it enables the teacher to schedule class time in a more

structured manner that enables the students to move from the class to the computer lab for more learning activity. See Figure 4.

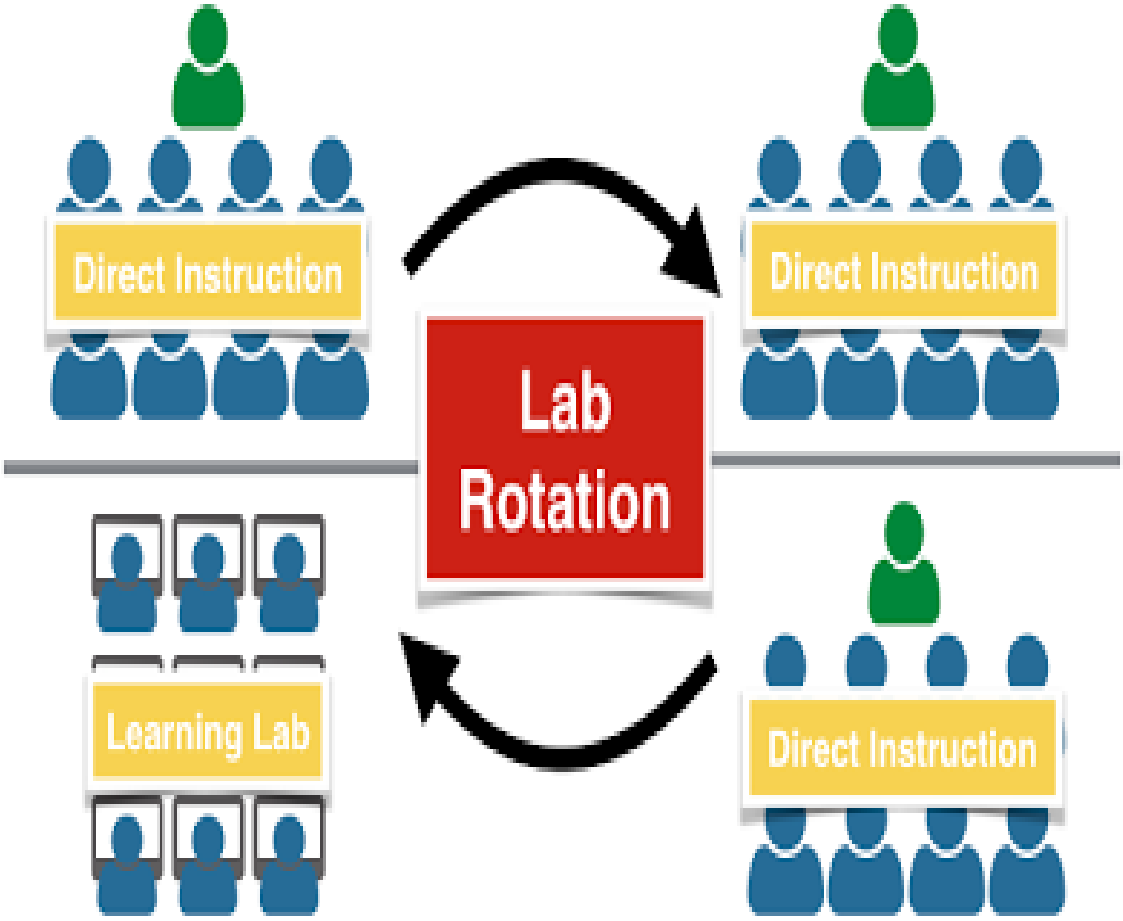


Figure 4: Lab Rotation Chart (Source: sites.google.com)

Flipped Classroom Model: In the flipped classroom model, students go through learning materials and resources at home and use the class period for problem solving or questions and activity with the teacher present to answer questions and assist those students lagging behind (ReadingHorizons, 2016). Flipped classroom derived its name from the activity it represents. In the normal classroom setting, the teacher provides learning resources and materials for the students in the classroom and gives them assignments to do at home. Now, we are flipping the

classroom by doing what should have been done in class, at home, and doing what we should do at home, in class (See Figures 5 and 6). So, the students access educational resources and course materials at home via an online platform and at their own pace and then come to class to solve exercises and do other activities with the teacher.

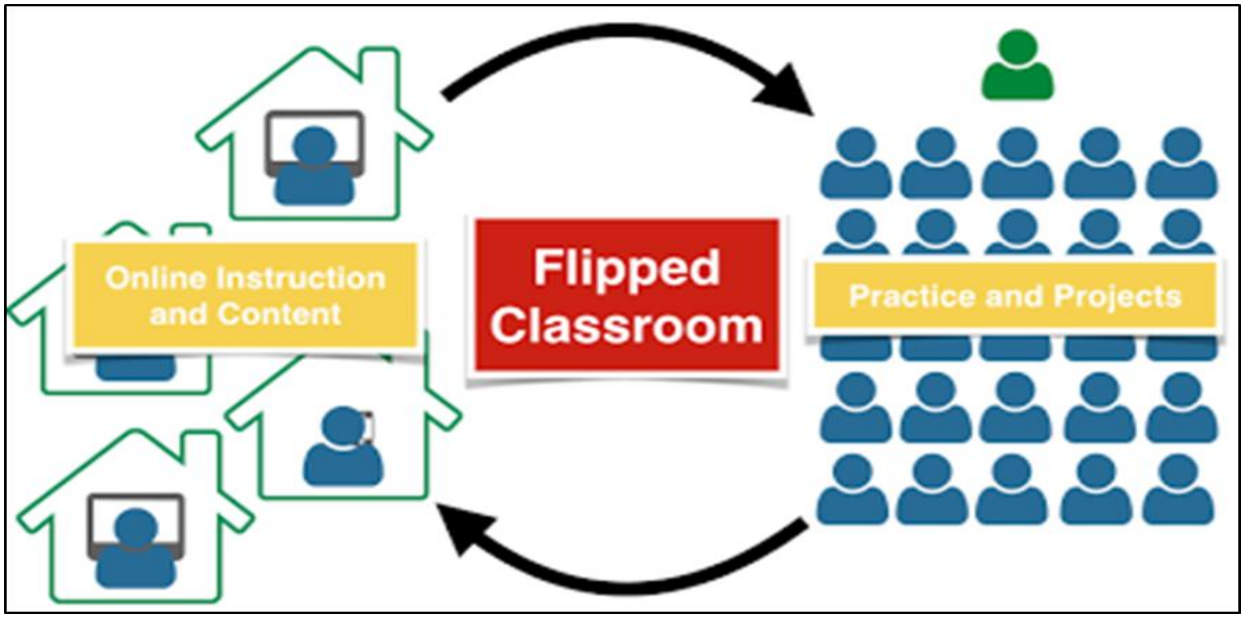


Figure 5: Flipped Classroom Chart (Source: sites.google.com)

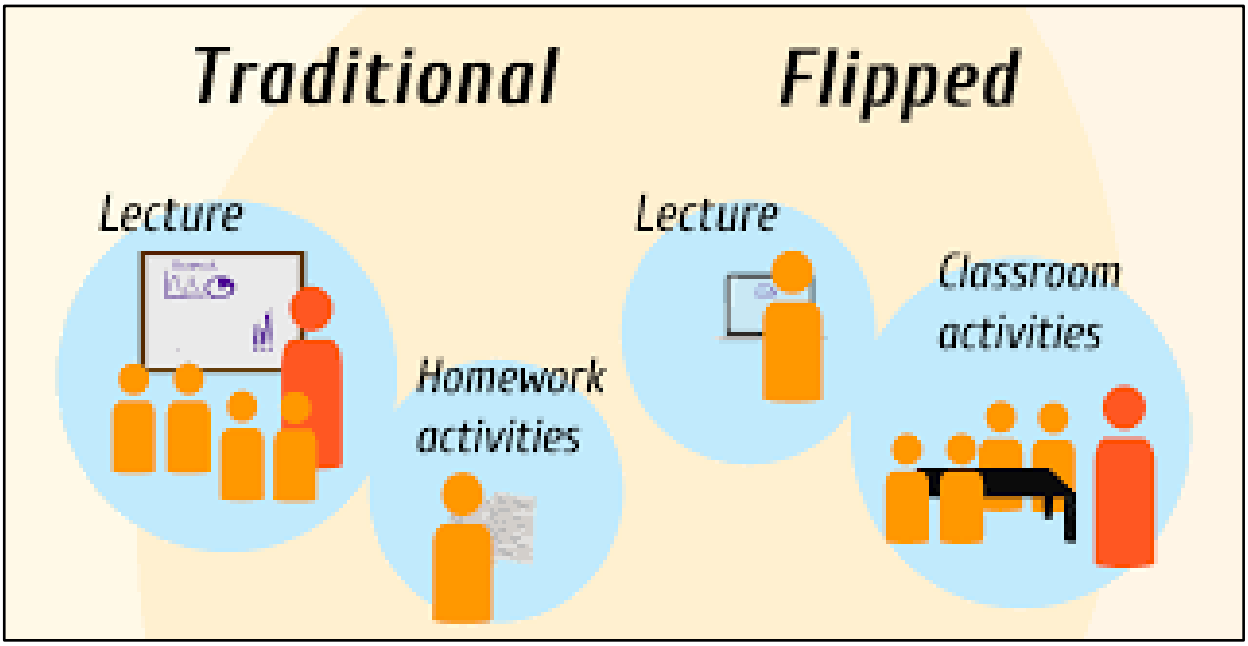


Figure 6: Chart showing the difference between Traditional classroom and Flipped Classroom (Source: blog.animatron.com)

The benefits of flipped classroom model include:

1. It frees up the in-class time of instruction as the instructional materials have been provided for the students before the class via online platforms.
2. The teacher can concentrate on answering questions and solving exercises.
3. Students can learn at their own pace by going over educational resources over and over again at their own speed and in whatever place they can get internet connection.

Individual Rotation: In the rotation model, the students rotate through a variety of modalities based on each student's need and peculiarity but the teacher is present to expand the information learned online through face to face meetings or projects organized based on the students' need. In this model, the course content arrangement is determined by the students' individual need. (ReadingHorizons, 2016). According to Brooke (2017), in the individual rotation model, the students are to go through all or some of the class stations based on the student's individual prescription given by the teacher. So, the teacher helps the student to detect which station to rotate to based on the students learning capability which the teacher has assessed and determined. This model helps the student to match up his abilities with understanding the lesson content which has some technology integration. The student can decide to go to the computer lab to take online instructions before going for the collaborative activities or the individual project. However, the teacher monitors the students' rotation plan to ensure that the goal of the model is achieved.

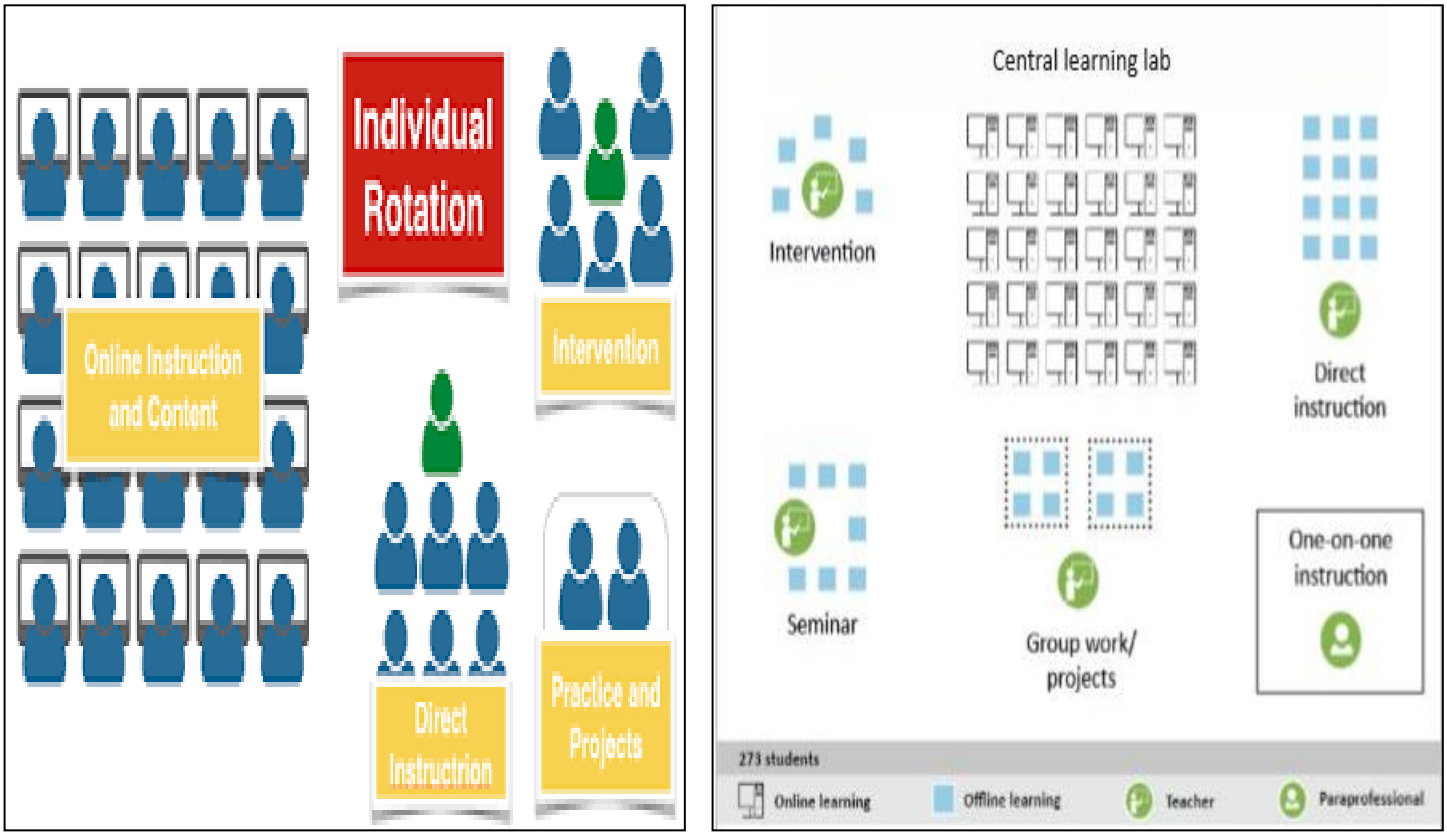


Figure 7: Individual Rotation Model Charts (Source: sites.google.com)

Flex Model

In the flex model, students take lesson materials via an online learning platform (which forms the backbone of the entire learning process) mixed with interactions with the teacher who is usually on site (Powell, et al., 2015). The teacher is available in the school to attend to students who may have need of attention. Also, though online instruction is the major form of instruction used in this model, the student could be referred to offline activities too. Students move through the flex course according to their needs. According to Eastman (2015) the flex model is designed to allow students work at their own pace with the occasion of having small face-to-face interactions with the teacher and their peers to bolster the learning process.

Self-Blend/A La Carte Model

The self-blend model is one in which the student can decide to take one or more courses online as a supplement to the other courses that are taken traditionally in a brick and mortar classroom. The teacher in this model is the online teacher. Staker and Horn (2012) argued that this model is different from the fully online learning and the enriched-virtual learning model because it is not a whole-school experience. That is, the student chooses the course(s) that will be taken online and the other courses will be taken in the classroom. Online course can be handled anywhere there is internet service (whether in school or at home) and at a time convenient for the student.

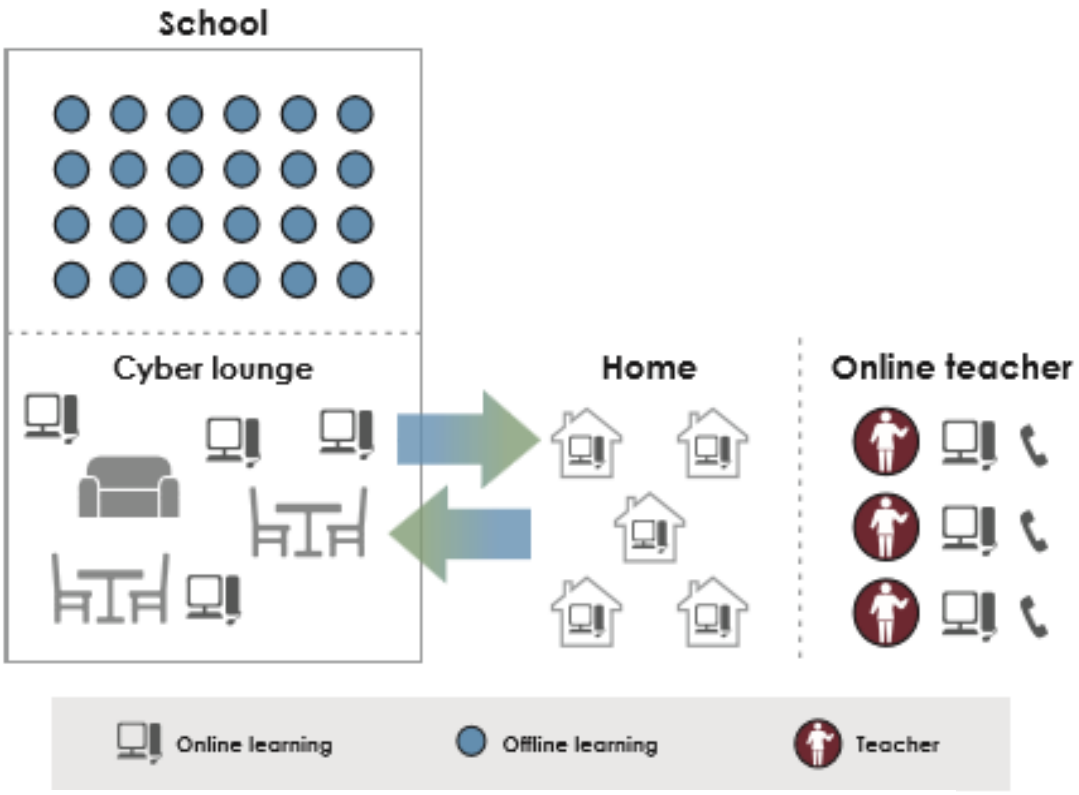


Figure 8: Self-Blend Chart (source: Staker & Horn, 2012)

Enriched Virtual Model

In this model, the students are to divide their entire course time between online content delivery (which can be done remotely) and a face-to-face instruction model which is not on a regular basis. The students seldom attend the face-to-face instruction and it is a whole-school experience (Staker & Horn, 2012).

All the models of blended learning approach can be carried out with the use of a learning management system. Learning Management systems are virtual learning environments that can be used for blended learning.

Learning Management Systems applied in Blended Learning Approach

A Learning Management System (LMS) is a software application that coordinates the learning activities of an organization which includes teaching, assessing, tracking results, getting feedback and presentation of reports of the entire process. As defined by News Ghana (2013), it a software application that is an excellent medium for training, evaluating and tracking results and that enables management to deliver the right kind of content to the learners. LMS, as defined by IGIglobal (n.d.), is a software application that can be used to plan, implement, assess and track learning processes. It helps teachers to create and deliver content, monitor and assess students, and coordinate the entire learning process in other to achieve the objectives of the course. This can be done with the use of online discussion chats, forums, discussion boards, individualized assignment platforms, threaded discussions, audio and video conferencing (Carnevale cited in Mafuna & Wadasango, 2016). All these are provided for in one learning management system and it makes teaching and learning process easier (Nor & Lee, 2013; Mtebe, 2015). LMS also provides a platform for interaction between the lecturer and the students

outside the classroom through threaded discussion fora which further enhances students' participation in the educational process.

Learning Management Systems are Virtual Learning Environments (VLE) where teachers can interact with their students by providing educational resources (or links to these resources) and providing feedback on inquisitions from students. It is a platform where teachers and students can come together to interact in order to achieve an educational goal (Rowell, 2012). They have the ability to coordinate all the learning activities of students ranging from registration, class activities, assignments, education resource material provision to examinations, assessment and giving out feedbacks.

Learning management systems could be of different types having different features. They are not only used by educational institutions but also by corporate bodies and business organizations for the training of their staff (Chaffe, 2016). According to Mtebe (2015), the most widely adopted LMS in sub-Saharan Africa include Blackboard, Sakai, KEWL, and Moodle. Learning management systems can also be built or programmed by institutions to suit their current programmes. For instance, the Rivers State University Port Harcourt, uses a portal (ecampus portal) to manage students' course registrations, examinations, reports etc. That portal also has features that lecturers can use in the preparation and administration of course content but this is not currently happening. Eke (2011) pointed out that University of Nigeria, Nsukka (UNN), adopted Moodle because it offers such features as class activities, fora, chats, blogs, wikis, and quizzes. It also offers an opportunity for students to obtain username and password in order to log in and participate in activities. Some of the learning management systems are free and open courseware while others have to be paid for. Examples of free LMS include Moodle, aTutor, Canvas, google classroom and so on, while examples of paid LMS include Blackboard

Learning System, eCollege, Desire2learn and so on. In this study, the Learning Management System that was used for the blended learning approach was Moodle.

Moodle: A Free Open Source Learning Management System

Moodle is a Learning Management System that was developed by Martin Dougiamas, a computer scientist and educator who sought to create a virtual learning environment that is more student-friendly and encourages collaboration of students. According to Cole (2005), Moodle is a short form for Modular Object Oriented Development Learning Environment which is a free open source LMS built on a sound educational philosophy through collaboration from members of the Moodle community. It is open source because each user has assess to the source code and can design the environment to suit any special perculiarities. This LMS can be used by individual lecturers or by an entire institution because it is free and flexible and does not need high knowledge of programming to use. Moodle can be used to teach financial accounting thereby enhancing students' participation and collaboration although, in Rivers State, this has not been done before to the best of the researchers knowledge. Satu (2016) posited that Moodle offers a great variety of functions such as integrating instructional material (via audio, video and text), e-mail, live chat sessions, online discussions, forums, quizzes, tests and assignments. These functions can encourage students' participation, collaboration and interest in the learning materials presented by the teacher. Two screenshots of the Moodle page used in this research are presented in Figures 9 and 10.

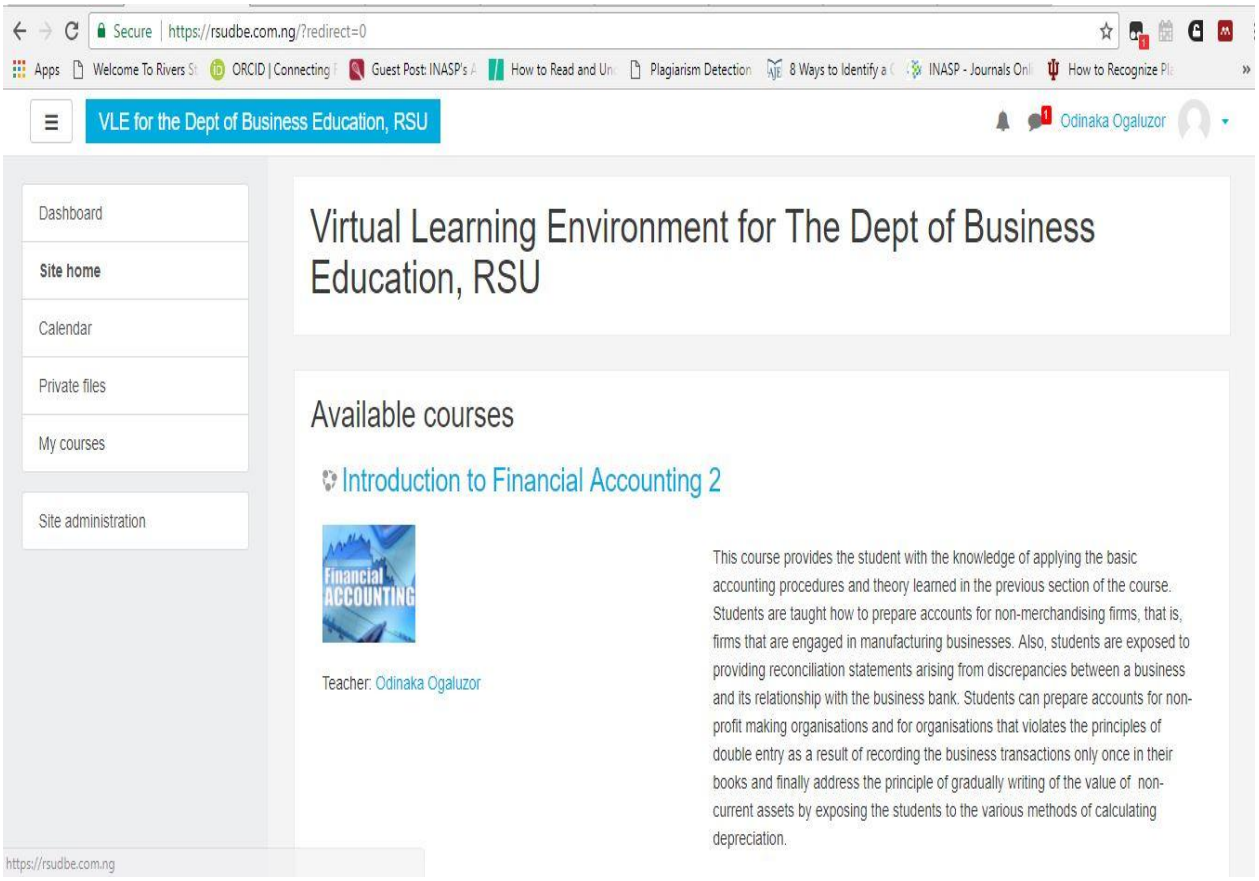


Figure 9: Screen shot showing the Moodle Site Dashboard

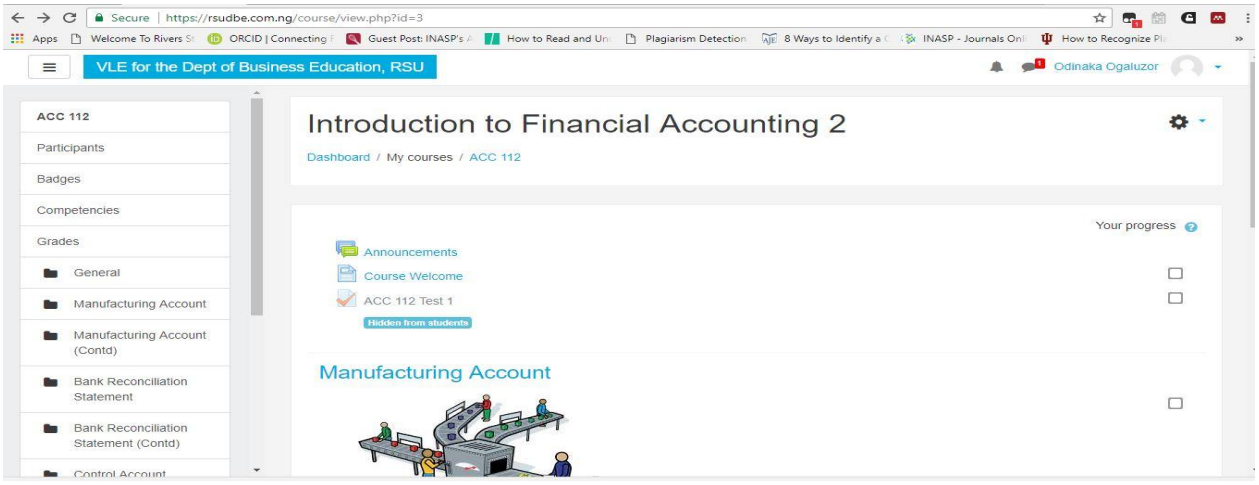


Figure 10: Screen shot showing the first page of the course (ACC 112) on Moodle

Instructional Design for the Online Content

In order to design the learning content for the online environment, the instructional design used was the ADDIE model developed over the years by instructional designers. The model is made out of the 5 phases which form its name: Analysis, Design, Development, Implementation and Evaluation. The ADDIE model can be used in both online and face-to-face approaches (Aldoobie, 2015). The different stages are:

Analysis Phase: This is the initial stage of the design and it is very crucial as it lays the foundation for the entire work. This phase has to do with:

a) *Setting instructional goals*
b) *Carrying out an instructional analysis*
c) *Carrying out learner analysis and*
d) *Setting the learning objectives*

Design Phase: This is the stage where the assessments are designed, the learning format decided and the instructional strategy determined. This phase includes:

a) *Designing the assessments*
b) *Choosing a course format* (blended learning approach as in this study).
c) *Creating an instructional strategy*

Development Phase: This is the stage where learning content are created and assembled in the order in which they were designed. Technology is integrated and tested for workability in this stage. This phase includes doing the following:

a) Creating a sample
b) Developing the course materials

c) Conducting a run-through (which will include getting a feedback, maybe through a pilot study).

Implementation Phase: This phase has to do with turning plans into action. Here, the procedure for training the instructors and learners is developed and the learning environment is organized. The components of this phase according to Aldoobie (2015) include:

a) Training the instructors

b) Preparing the learners and

c) Organizing the learning environment

Evaluation Phase: This is the last phase of the ADDIE model. This has to do with checking up whether the goals of the instructional design are achieved. There are two types of evaluation: *Formative Evaluation*, which continues throughout all the stages of the design and could be one-on-one, small group or field trial evaluation; Summative *Evaluation*, which comes at the end to the entire instruction and reveals the real value of the instructional design (Aldoobie, 2015).

Gender Influence in Technology Integration

Using electronic devices in the learning process can be challenging. Male and female students may not perform differently when technology is applied in the teaching process. Tweed (2013) found out that the teacher's gender did not significantly affect their usage of technology in the class and there was a weak positive relationship between the teachers age and technology usage in the classroom. Eze, Ezenwafor and Obidile (2016) opined that educational opportunities should be equally distributed to both sexes which also includes the integration of technology in the learning process. Eze, et.al., also found out that gender did not significantly

influence students' academic performance and retention in financial accounting in technical colleges.

Mahdi and Al-Dera (2013) found out, among others, that teachers from the ages of 41-60years had more access to the internet (at home and in their offices) more than those teachers below 40years. They also found out that there was no significant difference in technology integration levels of the two age groups. Mahdi and Al-Dera's study also revealed that there was a significant difference in the ICT integration levels of female and male teachers in the teaching of English Language. Their study showed that male teachers had used the computer and internet more in teaching English Lanaguage more than the female teachers.

Empirical Studies

The review of empirical studies was done under the following headings: Blended learning approach and students' academic achievement, blended learning approach and retention, gender and academic achievement, gender and retention.

Blended learning approach and Students' Academic Achievement

Lopez-Perez, Perez-Lopez, and Rodriguez-Ariza (2013) carried out a study on the 'application of blended learning in accounting: a comparative analysis of different degrees in higher education in Spain. The purpose of the study was to report the effect of blended learning on first year undergraduates students in four different programmes at the University of Granada. The design of the study was descriptive survey design. The population of the study was 1431 students who registered in 2009/2010 academic session in the four programmes studied (Business Administration, Business Studies, Economics and the double business administration/law programme). A questionnaire was used to collect data from the students and

985 valid responses were obtained and used for the study. The findings of the study showed that blended learning had a positive effect on students of the four programmes studied, reduced drop-out rate and improved the students score. The study of Lopez-Perez et. al., is different from this study in the methodology employed. They studied students' perception of application of blended learning to the teaching of accounting (by using descriptive survery design) while this present study employed a quazi-experimental design to determine the effect of blended learning approach on students' academic achievement and retention in financial accounting. The two studies are similar in the level of students studied (first year undergraduate students) but different in the area of study and the course studied.

In a study conducted by Chak and Fung (2015), the relationship between students' academic performance and their participation in quizzes that were uploaded online was assessed. One hundred and twenty nine undergraduate students that enrolled for a cost and management accounting course in their second year in a private University in Malaysia formed the population for the study. The results of the study showed that there was a positive impact of partaking in online quizzes on students' final exam score in the course. Chak and Fung's study, titled:Exploring the effectiveness of blended learning in cost and management accounting: an empirical study, focused mainly on study's online assessment in a private University in Malaysia. This present study covered both online assessment and provision of learning resources online. Also, the effect of blended learning in this present study was compared to conventional face-to-face approach.

In a study titled,effects of a blended learning approach on student outcomes in a graduate-level public health coursein University of Bafalo, USA, Kiviniemi (2014) sought to determine whether blended learning impacted on students' outcomes if course content and

learning objectives were held constant. The study was carried out on a public health course using a quasi-experimental, non-equivalent control group design of 28 students (traditional approach) and 38 students (blended learning approach). During the course after each unit of instruction, the students were made to complete a non-cumulative assessment. At the end of the course, the students were made to anonymously complete a standardized assessment on the course. These assessments were used to carry out the study. The results show that there was a significant increase in the performance of the students taught with blended learning appraoch. Also a majority of the students responded to showing preference in the usage of blended learning approach. Kiviniemi's study is similar to this present study in the design which was applied. The present study applied the quasi-experimental research design. Kiviniemi's study was conducted on a public health course while this present research was on a financial accounting course.

Jones and Chen (2008) in their study on Blended learning in a Graduate Accounting course: Student satisfaction and course design issues, sought to determine the relative effectiveness of blended-learning and conventional delivery approach in terms of students' perceptions. Descriptive survey design was the research design employed for the study. 64 students (average age of 31 years) from two sections of an MBA programme that offered the course Financial and Managerial Accounting were used for the study. The first section (traditional approach) had 34 students while the second section (blended approach) had 30 students. The students were assessed through homework case performance (50%), class participation (10%) and examinations (40%) and they were given a questionnaire to gather their opinions on the two approaches. The results showed that the ages of the participants, their undergraduate GPA and their years of prior work experience did not significantly affect the

performances of the participants in the two sections. The results showed that the blended learning students were more prone to receive immediate feedback from their instructors. Also, the results show that blended-learning fell short in areas like student engagement and the instructors preparedness. Jones and Chen's study is similar to this present student in that they both focus on the effect blended learning has on students' learning outcome in Accounting. The design used in Jones and Chen's study is different from this present study which adopted the quasi-experimental research design.

Blended Learning Approach and Students' Retention

Suleiman, Salaudeen, and Falode (2017) investigated effects of Computer-based blended learning strategy on secondary school Chemistry students' retention in individualized and collaborative learning settings in Minna, Niger State, Nigeria. The study adopted a quasi-experimental design as three research questions and three null hypotheses were formulated to guide the study. Multi-staged sampling procedure was used to select a total of 120 (71 female & 49 male) students from three co-educational schools within the study area. The selected students were randomly assigned to experimental group I (Computer–based blended learning in individualized setting) experimental group II (Computer–based blended learning in collaborative setting) and the control group (lecture method). A multiple-choice test on Chemistry that was developed, validated by the Chemistry experts was pilot-tested and a reliability coefficient of 0.74 was obtained using test re-test method. The achievement test was administered as instrument for data collection to students as pre-test, post-test and retention test. The data obtained from the administration of research instruments were analyzed using Analysis of Covariance (ANCOVA) statistics. The results indicated that Computer–Based Blended learning strategy improved students' retention in chemistry in collaborative learning settings better than in

individualized learning setting and in lecture method. It was therefore recommended among others that students should be exposed to Computer–based blended learning strategy in collaborative learning setting in order to aid their retention of chemistry concepts. This present study is similar to that of Suleiman, Salaudeen and Falode in the research design adopted, method of data analysis used and the variables studied (retention, and gender). However, they differ in the subject studied and the area of the study.

In order to determine the effect of blended learning in comparison with traditional teaching, Marchalot, Dureuil, Veber, Fellahi, Hanouz, et al. (2017) conducted a study in France from 2007 to 2014 on the performance of first year Medical residents. In the pre-intervention period (2007-2010), the traditional teaching approach was employed while blended learning was introduced in Rouen University Hospital (which served as the experimental group) in the year 2011. Three hundred and eight residents were studied during the entire period (2007 – 2014). The experimental design pre-test post-test control group design was employed. The results indicated that there was no significant difference in the results of the two groups (experimental and control) during the pre-intervention period. However there was a significant difference in the results of the groups in the post-intervention period showing an increase in the mean score of those taught with blended learning. The study suggested that blended learning approach had a positive impact on the performance of anaesthesia and critical care residents. The study of Marchalot, et. al employed the experimental design while this study applied the quasi-experimental design. The two studies have similar purpose of comparing the effect of blended learning approach over conventional face-to-face approach. However, the two studies are different in that Marchalot, et. al. carried out their study over a period of seven to eight years on

Medical residents while this study focused on the business education students offering financial accounting course in one year.

In the same way, Shorey, Kowitlawakul, Devi, Chen,et al. (2017), investigated the effect of blended learning of undergraduate nursing students' communication skills in National University of Singapore. The study investigated how blended learning affected the students' self-efficacy, satisfaction levels and attitudes towards learning a communication course. The design used for the study was a single group pre-test post-test quasi-experimental design. One hundred and twenty four nursing undergraduate students were studied with reliable instruments properly validated used to collect data on attitudes and self-efficacy. The findings revealed that blended learning had a positive effect on the students satisfaction levels, attitude and self efficacy. This present study is similar to that of Shorey, et. al., in the research design adopted for the study. Also, this research employed the flipped classroom model of blended learning and a learning management system (Moodle) as the virtual learning environment.

Gender and Academic Achievement

Nnamani and Oyibe (2016) conducted a study on gender and academic achievement of secondary school students in Social Studies. Two research questions were asked and two null hypotheses were tested at 0.05 level of significance. The population of this study comprised of 3,479 Junior Secondary School II (JSS II) students selected from all the secondary schools in Abakaliki urban of Ebonyi State. The instrument used for data collection was Social Studies Achievement Test (SOSAT), data were analyzed using mean and standard deviation for all research questions, and analysis of co-variance (ANCOVA) was used to test the null hypotheses at 0.05 level of significance. The findings of the study revealed that the mean achievement score of female secondary school students was higher than the mean achievement scores of male

students. The findings of the study also revealed that: male and female secondary school students taught social studies by male teachers obtained higher mean scores than male and female students taught Social studies by female teachers, and female students taught Social studies by male teachers performed better than male students taught social studies by male teachers. The study also revealed that there were significant difference in the mean achievement of secondary school students in Social Studies based on gender. Based on these findings, the researcher recommended that Social Studies teachers should re-assess their classroom instructional practice because there is a need for them to shift to instructional practice that will give the students equal opportunities to excel in educational activities.

Nnamani and Oyibe's study is similar to this study in that gender influence on academic achievement was considered. However, the study differs from this present study in the subject considered and in the utilization of blended learning approaches. Both studies also employed the same method of data analysis.

Du (2011) conducted a comparison between traditional and blended learning approaches in the teaching of an Introductory Principles of Accounting course in University of Massachusetts, USA. The study was carried out over the period 2009 to 2010 using 128 students. The blended learning model applied was categorized into four: online quizzes before class, online homework assignments and quizzes after class, comments and posts on discussion forums after class, and project online postings. The results of the study showed that gender was found to be positively related to final examination course grades in the traditional approach but not in the blended learning approach. Also the results show that blended learning approach had a positive effect on students' final performance as it encouraged in-dept class activities. Du's research is similar to this present study in the methodology employed but it is different in the

blended learning model adopted. While Du used a blended learning model that was divided into four activity heads, this present study used the flipped classroom model of blending learning.

Gogo (2018) carried out a study using Moodle as the learning management system. The study was titled Attitude and performance of postgraduate students in an e-learning course on CorelDraw. The aim of the study was to determine the impact of an e-learning course on the attitude and performace of postgraduate students in the University of Port Harcourt. The research design employed was two-group post-test only quasi-experimental design. Six research questions were answered and five hypotheses tested. A sample of seventy-seven post graduate students was purposively sampled from the population of one hundred and twenty seven. Four instruments were used in collecting data. The reliability of the instruments were 0.9, 0.7, 0.75 and 0.79 for QOPSFWEA, QOPSATE, CBT and CAT respectively. SPSS was used to analyze the data. Mean, standard deviation, z-test, ANOVA, MCAR, chi-quare and PPMC were used to answer the research questions and test the hypotheses. The findings revealed that the e-learning course ran on a Moodle site enhanced performance of male and female students. It was recommended that e-learning should be infused into the traditional classroom using any blended learning model. Gogo's study is similar to this present study because they both use the Moodle site as the learning management system for instructional delivery. However, there are differences in the research design employed, course taught and type of instruments used for data collection.

Gender and Retention

Eze, Ezenwafor and Obidile (2016) carried out a study on effect of gender on students' academic performace and retention in finacial accounting in technical colleges in Anambra State. The study had four research questions and two null hypotheses. The research design employed

for the study was quasi experimental design of Pre-test, post-test, non-randomized control group. A sample of One hundred and thirty eight National Business Certificate year II students from eleven State-owned technical colleges were selected from a population of one hundred and sixty eight. The instrument used for data collection was an Accounting Achievement Test which was validated by three experts and had a reliability coefficient of 0.83 using Kuder-Richardson Formula 21. The research questions were answered using mean and standard deviation while the hypotheses were tested using Analysis of Covariance (ANCOVA). The findings of the study showed that male and female students taught fnancial accounting using Problem-based teaching method performed better with higher post test scores than those taught with lecture method. The findings also showed that there was no significant difference in the mean retention scores of male and female students taught financial accounting using Problem-based teaching method. The study recommended that accounting teachers at post basic education level should use Problem-based teaching method in teaching financial accounting. This study is similar to the present study in the research design adopted and the variables studied (gender, academic performance and retention). Also the course taught is similar to the one considered in the present study (financial accounting). However, the study differs from this present study in that this present study focused of the effect of blended learning on students' achievement and retention in financial accounting. The present study used a learning management system (Moodle) where students were partly taught online and partly in class.

Okocha, Eyiolorunshe, and Oguntayo (2016) carried out a study on students' acceptance of blended learning in Nigeria to determine the level of acceptance that undergraduate students of Landmark University have towards blended learning. The study employed the descriptive survey design as three hundred copies of a questionnaire were given to students undergoing a

course using blended learning approach. Two hundred copies of the questionnaire were retrieved and used for the study. Blended learning is still in its infancy stage at the Landmark University and as such, lecture notes and materials were uploaded online and few lecturers participated in the discussion forum, exercises and quizzes. Descriptive statistics and regression analysis were used to analyze data collected. The results revealed that the students were more interested in the lecture materials and resources placed online in the Learning Management System than on the discussions and interactions that go on. The results also showed that there was no relationship between the students' learning style and their acceptance of blended learning. One major finding of the study was that gender did not significantly affect the user acceptance of blended learning. This result contradicted the views of Venkatesh, Morris, Davis, and Davis (2003), and Venkatesh and Morris (2000) who reported that gender had a great role to play in technology acceptance. The study of Okocha, Eyiolorunshe, and Oguntayo is similar to this present study as regards gender as this study sought to determine whether there was a significant diffence in the academic achievement of male and female business education students taught financial accounting with the blended learning approach.

Noni, Abdullah and Ismail (2017) conducted a study to determine the level of satisfaction that polytechnic students had in blended learning approach and to determine the students' perferred blended learning construct. The study was carried out on 206 students who enrolled in the engineering mathematics course in the Ibrahim Sultan Polytechnic, Malaysia, in the 2016/2017 academic session. The research instrument used was a questionnaire adapted from Kalantarrashidi, Mohammadpour and Sahraei (2015). The reliability of the instrument was determined using Cronbach alpha which yielded a reliability coefficient of 0.86. Mean, standard deviation and t-test were the statistical tools used for the analysis which was carried out

on SPSS (Statistical Package for social Sciences). The results show that gender did not significantly influence the perception that students had of the level of satsisfaction towards blended learning environment. Noni, et.al's study is similar to this present study as they both considered gender as affected by blended learning adoption. However, the methodology employed and the students studied (Engineering students) by Noni, et. al is different from this present. Their study was conducted in a polytechnic while this study was carried out in Universities in Rivers State, Nigeria.

Summary of Review of Related Literature

This chapter reviewed literature that is relevant to the study. The concept of blended learning was examined which has to do with the combination of online learning with conventional classroom teaching approach. Other concepts reviewed include: business education, financial accounting, academic achievement and retention. The thoeries of cognitive learning, constructivist learning and connectivism were explained. These thoeries, as propounded by Jean Piaget (cognitive learning), Lev Vygotsky (constructivist learning), Siemens and Downes (connectivism learning) show how people learn from what they already know, constructing new knowledge and from connecting with other people. All of these influence the integration of technology in the classroom which is what blended learning is all about.

Futhermore, different blended learning models were reviewed. The models of blended learning include: the rotation model, flex blend model, self blend (A la Carte Model) and enriched virtual model. The rotational model has four sub-models which includes: station rotation, lab rotation, flipped classroom and individual rotation. In applying any of the blended learning approaches, the teacher ought to consider the various determining factors such as class

space (especially for station rotation model), the available of facilities like computer lab, internet access of students and so on.

Also, to effectively use blended learning approach a virtual learning environment (VLE) should be used. The VLE that administers and manages all the educative activities from registering students to accessing them and providing feedbacks is called a Learning Managament System. In this study, Moodle was the LMS that was used in carrying out the research. Moodle (short form for Modular Object Oriented Development Learning Environmemtn) is a free open source LMS that can help teachers apply blended learning approach.

The literature reviewed covered the application of blended learning in other fields of learning and in other countries. To the best of the researchers' knowledge, the effect of blended learning on students performance in financial accounting in Rivers State, Nigeria, had not been studied hence the need for this study. This is the gap that this study sought to fill.

CHAPTER THREE

METHOD

This chapter covers the method that was used in carrying out the study. The chapter is arranged under the following headings: research design, area of the study, population, sample and sampling technique, instrument for data collection, validation of the instrument, reliability of the instrument, method of data collection, method of data analysis and experimental procedure.

Research Design

The study employed a quasi-experimental non-randomized control group, pre-test-post-test design. This design was most appropriate for the study as randomization of the students into experimental and control groups was not very possible in the present situation. According to Koul (2007:500) where it is not practically "posible to upset class schedules in order to gather subjects in order to employ randomization procedures for getting equivalent control and experimental groups, the experimenter may use pre-assembled groups, such as intact classes, for framing experimental and control groups". This design was also used by Shorey, et al., (2017) and as such it was considered appropriate for the study.

The symbolic representation of the design is presented in Figure 11.

Group	Pre-test	Treatment	Post- test	Delayed Post-test
E	0_1 ----------	E_1 ----------	0_2 ----------	0_3
C	0_1 ----------	C_1 ----------	0_2 ----------	0_3

Figure 11: Representation of the Research Design

Where

E means experimental group

C means control group

O_1 means pre-test

O_2 means post-test

O_3 means delayed post-test

E_1 means teaching approach for experimental group using blended learning approach (flipped classroom model)

C_1 means teaching approach for Control Group using the conventional classroom approach

Area of the Study

The study was conducted in Rivers State which is located in the southern part of Nigeria. Rivers State is one ofnine Niger Delta States in the south-south geopolitical zone of Nigeria. The state is bounded on the south by the Atlantic Ocean, on the north by Anambra, Imo and Abia States, the east by Akwa-Ibom State and west by Bayelsa and Delta States. The state is rich in oil deposits which attracts International Oil Companies (IOCs), oil serving companies and other businesses. Students' achievement in financial accounting can determine whether or not they will have better job opportunities in these companies. This prompted the researcher to carry out the research in this area.

Population for The Study

The population for this study comprised of all first-year business education students in universities in Rivers State. Records from the Department of Business Education, Rivers State University and the faculty of business studies, Ignatius Ajuru University of Education, indicate that there are 685 year one business education Students which formed the population for the study. See Appendix A (Pg 102) for more information

Sample and Sampling Technique

The sample for this study was made of 160 year-one business education students in two universities offering business education in Rivers State. The sample size was made up of 122 business education (accountancy) students in Ignatius Ajuru University of Education (43 males and 79 females), and 38 business education (accountancy) students in Rivers State University (17 males and 21 females). Purposive sampling technique was used as intact classes were chosen for the study. The sample from the Rivers State University was chosen as the experimental group because of the availability of facilities for blended learning while the sample from Ignatius Ajuru University of Education was chosen as the control group.

Instrument for Data Collection

The instrument that was used for the collection of data was an achievement test titled, *Financial Accounting Achievement Test (FAAT).* The FAAT was developed by the researcher from the lesson plans raised for the selected topics in the course, *Introduction to Financial Accounting 2*. The instrument is made up of 40 multiple choice questions (with options A to E) which was given as pre-test to the students and also as post-test after the instruction. The test was reshuffled before it was given to the students as post-test. For the experimental group, the test was taken on the Learning Management System which reshuffled the questions for each student. That is, each student's questions were reshuffled and rearranged thereby making it difficult for students to cheat. Also, the test was timed automatically to go off at the expiration of 40 minutes. To avoid network issues, the students were warned by the system to ensure that they were in the best place for the test before beginning the test. Each correct answer was given 2.5 marks.

Validation of The Instrument

The instrument was validated by two experts in the field of business education (from Nnamdi Azikiwe University and Rivers State University) and one expert in the field of Measurement and Evaluation from Nnamdi Azikiwe University. The topic of the study, statement of the problem, purpose of the study, research questions, hypotheses, lesson plans and the instrument (FAAT) were given to the experts. Their criticism and comments on the overall work was submitted to the research supervisor and used in the preparation of the final copy of the instrument. Some corrections resulting from the validation were made.

Item Analysis

Item analysis was carried out on 40 items in the instrument (FAAT) to ensure standardization. The instrument was administered to 30 business education students in Federal University Otuoke, Bayelsa, which was not part of the population of the study. The item analysis was facilitated by the use of an online portal (https://www.assess.com/citas/). Two indices were used to determine whether an item should be retained, modified or rejected.

Item difficulty index: This is the measure of how easy or difficult a test item appears. It is determined by the percentage of candidates that got the right answer out of the total respondents. The formula for calculating the item difficulty is:

$$P = \frac{R \times 100}{T}$$

Where

P = Item difficulty Index

T = Total number of candidates who attempted the items

R = Number of students who got the answer correctly

Discrimination Index: This is the degree to which an item discriminates between very high achievers and low achievers. The discrimination index tells the extent to which high achievers choose the wrong options and the extent to which the low achievers choose the correct answer to the question items. It tells whether the distractors are properly situated and whether the stem of the question needs modification. A high positive discriminatory index means that the distractors in the question are proper. However, a negative discriminatory index indicates that there is a problem with the distractors or the stem of the question item.Though the discriminatory index and difficulty index can be gotten with manual calculations, the researcher chose to use an online tool found at https://www.assess.com/citas/ . The results of the item analysis are shown in appendix N (pg 172).

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

1. Any item witha low difficulty index below 0.30 or with a very high difficulty index of 0.70 and above were modified. The stems of the items and/or the distractors were changed.
2. Any item with a negative or very low discriminatory index was modified. The distractors and stems were modified.

Initially, there were 40 items before the validation. After the validation and standardization, 26 items were retained and 14 items were modified. The results are presented in Appendix N (Pg 172).

Reliability of the Instrument

Kuder Richardson (K-21) formula was used to determine the reliability of the Instrument. Copies of the instrument were administered to 30 business education Students in Federal University Otuoke, Bayelsa State. The reliability coefficient of 0.77 was obtained (see Appendix M, pg. 170, for the computation). This means that the instrument is judged to be reliable.

Method of Data Collection

The instrument (FAAT) was administered to the control group and the experimental group as pre-test. Students in the control group were given the pre-test during the first class. Copies of the instrument were produced and administered to the students for 40 minutes. For the experimental group, the pre-test was activated on the Learning Management System. After the pre-test, the treatment was applied for a period of 5 weeks after which the post test was administered to both the control group and the experimental group. The post test was re-administered two weeks after as delayed post-test, to test for retention.

Experimental Procedure

The procedure that was adopted in carrying out the study is outlined below:

Step 1 - Installing Moodle Software: The first step was to install the software that served as the virtual learning environment. The Moodle software (version 3.4) was downloaded and hosted on a Web hosting service called *whogohost.com* with the domain name, www.rsudbe.com.ng(see Appendix B, pg. 103, for screenshot of domain name registration). This enabled users to access the Learning Management System from any device connected to internet.

Step 2 - Briefing of the Research Assistants: The next step was to brief the research assistants, who actually were the lecturers of the course ACC 112 (*Introduction to Financial Accounting 2*)

in Rivers State University and Ignatius Ajuru University, Port Harcourt. They were informed (separately) of the purpose of the research and the methodology to be employed. They were also informed of the pre-test and post-test to be administered to the students. Emphasis was laid on using the lesson plan that was written for the study.

Step 3 - Training of the Research Assistant for the Experimental Group: The research assistant for the experimental group was further trained on how to use Moodle. The training manual that was used for the training is attached in Appendix C, pg. 104.

Step 4 - Sensitization of the Participants: On the first day of class, the research assistant for the experimental group (lecturer of the course, ACC112) informed the students of the adoption of blended learning approach. The flipped classroom model was explained to the students. All students submitted their emails to the lecturer who used the emails to enroll the students into the Moodle site. It was expected that all students should have emails because it is a requirement for admissions by the Joint Admission and Matriculations Board (JAMB). However, those students who did not have active emails were asked to open one. The students were told how to use the platform for assessing learning materials, discussions and for partaking in the class activities. The rules of the platform were given. The rules included:

1. That the Moodle site was only for educational purposes.
2. No posting of unrelated comments or items was allowed.
3. Only discussions that were related to the various topics were allowed in the discussion forum provided.
4. Cyber bullying and defamation were not tolerated.
5. Students were free to ask questions on each lesson and the lecturer would ensure that such questions were answered.

6. Individual learning difference was considered as students could post learning materials that they individually found and that could be beneficial to the class.
7. Students' privacy was protected.

There was no special sensitization of the students in the control group because they used the conventional classroom approach.

Step 5 - Administration of the Pre-test: The pre-test was administered to the two groups by the research assistants. The Research assistant for the control group administered the hard copies of the test to the students on the first day of the class. The pre-test sheet had a demographic section where the students indicated their gender. On the other hand, the pre-test of the experimental group was uploaded on the Moodle site. The test was taken after the first class which took place in the Information Technology Center (ITC) of the University. The test was timed 40 minutes and at the expiration of the time, the system automatically ended the test. The students could not have access to the pre-test anymore.

Step 6 - Treatment Packages: The control group was taught using the conventional classroom approach applying the lecture method with the lesson plan prepared (see Appendix D, Pg. 106). For the experimental group, lesson content for three selected topics was uploaded on the Moodle site prior to beginning the course and content for each topic was activated at the beginning of the respective week. The blended learning approach was applied using flipped model in accordance to the lesson plan prepared (See Appendix D, pg. 106). The treatment lasted for five weeks. Each topic became accessible to the students at the beginning of the related week.

Flipping the Class: The lesson content was uploaded on the Moodle site with exercises at the end of each lesson. The students had access to the learning content and were expected to go

through the exercises on their own. The teacher then used the class time to go through the exercises and to give attention to students who did not understand specific areas.

Week 1 -2: Manufacturing Account: The lesson content for Manufacturing Account was made active at the beginning of week 1. The lecturer came to the class, and solved the exercises that were posted on the Moodle site. A question and answer time was created and the teacher responded to students' questions. The teacher moving round the class, attended to students who did not understand the concepts. Also, students were encouraged to post their comments on the forum that was created for the topic and the teacher answered such questions online.

Week 3-4: Bank Reconciliation Statement: The lesson resources for bank reconciliation statement was made active at the beginning of week 3. Exercises were uploaded at the end of the lesson content to which the students were to attempt on their own. In the class, the teacher briefly recapped what was uploaded on the site and then solved the exercises. Questions were answered both in class and on the online platform.

Week 5: Control Accounts: The lesson materials for this topic was activated at the beginning of week 5. Students were required to go through the lesson content and attempt the questions added at the end of the lesson content. The teacher used the class time to solve the questions and explained the concept. The teacher also created discussion forum for the topic.

Step 6 - Administration of Post-Test: At the end of the 5th week, the two groups took the post-test. The instrument, *Financial Accounting Achievement Test,* was shuffled and administered to the students. The Moodle site automatically shuffled the questions for each student, so no two students had identical question numbering.

Step 7 - Administration of Delayed Post-Test: Two weeks after the post test, the instrument FAAT was administered to the students to test for retention.

Control of Extraneous Variables

Extraneous variables are undesirable variables that could influence the relationship between the independent and dependent variables. They are variables that are not intentionally studied but could affect the results of the experiment thereby threatening the internal validity of the research.

Experimental mortality/Attrition: This is a situation where subjects drop out of the experiment as a result of illness or resentment towards to the study (Street, 1995), or inability to access the required facilities. To control this, the researcher briefed the research assistants to maintain standardization of procedure and instruction. The research assistant for the experimental group properly briefed students on how flipped classroom model was to be applied. Also, the researcher sought approval from the Director of the Information Technology Centre in Rivers State University to make ICT facilities available for students in the experimental group who complained of not having internet-enabled devices. Students in both groups were encouraged to participate fully during the weeks of treatment

Experimental Expectancy Effects: To avoid experimental expectancy effects, the researcher ensured that research assistance use the lesson plan prepared. Standardization of procedure was key to controlling this variable.

Experimental Bias: To control experimental bias, the researcher ensured that the research assistants (who are the course lecturers) followed the lesson plan that was provided. The

researcher was not involved in the teaching of any of the groups and as such the students did not know that they were being studied.

Novelty Effect: To control this variable, the students were already familiar with the course lecturers. These lecturers had taught them the first part of the course in the first semester, Introduction to Financial Accounting 1 (ACC 111). The students were also used to using their phones for internet browsing and messaging.

Method of Data Analysis

The research questions were answered using mean and standard deviation. The difference between the means of the pre-test and post-test for both groups was used to determine the effect. The decision rule for answering the research questions was as follow:

1. For academic achievement, any approach that yielded a higher mean difference between pre-test and post-test scores was taken to have a highereffect than the other.
2. For retention, any approachthat yielded a higher mean difference between post-test and delayed post-test scores was taken to have a higher effect on students' retention than the other.
3. For gender, any group that had a higher mean gain was taken to mean that blended learning approach had a higher effect on that group.

To test the hypotheses, Analysis of Covariance (ANCOVA) was used. The null hypothesis was accepted if the calculated p-value was greater than level of significance (i.e. p-value > 0.05 = accept null hypothesis) and rejected if the p-value was less than the level of significance (i.e. p-value < 0.05 = reject null hypothesis).

CHAPTER FOUR

DATA PRESENTATION AND ANALYSIS

This chapter contains the analysis and presentation of data. The analysis of the data was done using the Statistical Package for Social Sciences (SPSS), version 25. Throughout the presentation, BLA represents Blended Learning Approach and CCA represents Conventional Classroom Approach. The number of students in the two intact classes used was 208 (53 in the experimental group and 155 in the control group). However, only results of students who partook in the three tests given, were used for the analysis. A total of 160 students' results were used.

Presentation of Results

The presentation was done according to the research questions asked and hypotheses formulated in Chapter one.

Research Question 1

What is the difference in mean academic achievement scores of business education students taught financial accounting using blended learning approach and those taught using conventional classroom approach?

Table 1: The effect of blended learning approach on students' academic achievement in financial accounting when compared with conventional classroom approach

Approach	N	Pre-test		Post-test		Mean Difference	Remark
		Mean	Std. Deviation	Mean	Std. Deviation		
Blended Learning Approach	38	33.24	12.17	63.06	10.96	29.82	BLA has a higher effect
Conventional Approach	122	24.63	9.35	33.23	13.33	8.60	

The result in Table 1 that the mean score of the pre-test for experimental group (BLA) was 33.24 while the post-test mean score was 63.06. This signifies a mean difference of 29.82. On the other hand, the mean score of the pre-test for the control group (CCA) was 24.63 while the post-test mean score was 33.23. The control group also had a mean difference of 8.60. The mean score of the pre-test for the experimental group was higher than that of the control group (Pre-test_BLA > Pre-test_CCA; 33.24> 24.63). Also, the post-test for the experimental group was higher than that of the control group (Post-test_BLA > Post-test_CCA; 63.06> 33.23). The mean difference of both groups show positive results (29.82 for BLA, and 8.60 for CCA) however, the mean difference of the experimental group is a higher than that of the control group. The standard deviation of the experimental group for both pre-test and post-test (12.17 and 10.96 respectively) is higher than that of the control group (9.35 and 13.33). This shows that the scores in the control group are more homogenous than the scores in the experimental group. The results therefore indicate that blended learning approach has a higher effect on students' academic achievement scores in financial accounting when compared to conventional classroom approach.

Research Question 2

What is the difference in mean retention scores of business education students taught financial accounting using blended learning approach and those taught using conventional classroom approach?

Table 2: The effect of blended learning approach on students' retention in financial accounting when compared with conventional classroom approach

		Post-test		**Delayed Post-test**			
Approach	N	Mean	Std. Deviation	Mean	Std. Deviation	Mean Difference	Remark
Blended Learning Approach	38	63.06	10.96	68.43	9.35	5.37	BLA has a higher effect
Conventional Classroom Approach	122	33.23	13.33	37.89	14.00	4.66	

From the results in Table 2, the mean score of the post-test for the experimental group is 63.06 while that the mean score of the delayed post-test for the same group is 68.43. This signifies a mean difference of 5.37 for the experimental group. On the other hand, the mean score of the post-test for the control group is 33.23 and 37.89 for the delayed post-test. The control group also has a mean difference of 4.66. The post-test mean score for the experimental group is higher than that of the control group (Post-test_BLA >Post-test_CCA; 63.06> 33.23), and the delayed post-test mean score for the experimental group is also higher than that of the control group (delayed_post-test_BLA > delayed_post-test_CCA; 68.43> 37.89). The mean difference for the experimental group (5.37) is higher than that of the control group (4.66). This therefore means that the retention scores of students taught financial accounting with blended learning approach is higher than those taught with conventional classroom approach. The standard deviation of the experimental group is higher than that of the control group which signifies that the scores in the experimental group are more heterogeneous than the scores in the control group.Blended learning approach has a higher effect on students' retention in financial accounting than conventional classroom approach

Research Question 3

What is the difference in mean academic achievement scores of male and female students taught financial accounting using blended learning approach?

Table 3: Results showing the effect of blended learning approach on achievement scores of male and female students in financial accounting

Gender		**Pre-test**		**Post-test**			**Remark**
	N	**Mean**	**Std. Deviation**	**Mean**	**Std. Deviation**	**Mean Difference**	
Male Students	17	36.47	13.69	66.06	9.72	29.59	BLA had more effect on female students' achievement
Female Students	21	30.00	10.22	60.06	11.39	30.06	

The result in Table 3indicates that male students taught with blended learning approach had mean achievement scores of 36.47 and 66.06 for the pre-test and post-test respectively. This resulted in a mean difference of 29.59. On the other hand, the female students taught with blended learning approach had mean achievement scores of 30.00 and 60.06 for the pre-test and post-test respectively. Also, the female students had a mean difference of 30.06. The standard deviation of the female students is higher than those of the male students which means that the scores of the female students have more variability from the mean than those of the male students. The results show that the female students taught financial accounting with blended learning approach had a higher mean difference than their male counterparts. It therefore means that blended learning approach in the teaching of financial accounting had more effect on female students' achievement scores than on that of the male students.

Research Question 4

What is the difference in mean retention scores of male and female students taught financial accounting using blended learning approach?

Table 4: Results showing the effect of blended learning approach on retention scores of male and female students in financial accounting

Gender		Post-test		Delayed Post-test			Remark
	N	Mean	Std. Deviation	Mean	Std. Deviation	Mean Difference	
Male Students	22	66.06	9.72	70.22	7.86	4.16	BLA had more effect on female students' Retention
Female Students	27	60.06	11.39	66.63	10.31	6.57	

The result in Table 4indicates that male students taught with blended learning approach had mean scores of 66.06 and 70.22 for the post-test and delayed post-test respectively. This resulted in a mean difference of 4.16. On the other hand, the female students taught with blended learning approach had mean scores of 60.06 and 66.63 for the post-test and delayed post-

testrespectively. Also, the female students had a mean difference of 6.57. The standard deviation of the male students is lower than those of the female students which means that the scores of the male students are a little more homogenous than those of the female students. The results show that the female students taught financial accounting with blended learning approach had a higher mean difference on their retention scores than their male counterparts. It therefore means that blended learning approach had more effect on female students' retention scores in financial accounting than on that of the male students.

Hypothesis 1

There is no significant difference between the academic achievement scores of students taught financial accounting using blended learning approach and those taught using conventional classroom approach.

Table 5: ANCOVA result showing difference in students' achievement scores between approaches

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Decision
Corrected Model	27507.965[a]	2	13753.983	88.955	0.000	0.531	
Intercept	24432.767	1	24432.767	158.020	0.000	0.502	
Pre-test	1683.536	1	1683.536	10.888	0.001	0.065	
Approach	19293.028	1	19293.028	124.779	0.000	0.443	Significant.
Error	24275.031	157	154.618				
Total	307523.063	160					
Corrected Total	51782.996	159					

a. R Squared = .531 (Adjusted R Squared = .525)

The data in Table 5 show that the F-cal value was 124.7 and the P-value was 0.000. Since the p-value is less than the level of significance (P-value<0.05), the F-value is significant. That is, the null hypothesis will be rejected as there is a statistically significant difference in the effect of the independent variable (Approach) on the dependent variable (achievement scores). This

difference is in favour of the blended learning approach as shown in the pairwise comparison table below.

Table 6: Pairwise comparison result showing the significant mean difference in achievement scores between approaches

Pairwise Comparisons						
Dependent Variable: Post-test					95% Confidence Interval for difference[b]	
(I) Approach	(J) Approach	Mean Difference (I-J)	Std. Error	Sig.[b]	Lower Bound	Upper Bound
BLA	CCA	29.83*	2.440	.000	22.439	32.079
CCA	BLA	-29.83*	2.440	.000	-32.079	-22.439

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

b. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

The result show that the mean difference between achievement scores of BLA and CCA is 29.83 in favour of BLA and that this mean difference is significant. Therefore, the null hypothesis is rejected, which means that blended learning approach has a significant effect on students' achievement in financial accounting more than conventional classroom approach.

Hypothesis 2

There is no significant difference between the retention scores of students taught financial accounting using blended learning approach and those taught using conventional classroom approach.

Table 7: ANCOVA result showing difference in students' retention scores between approaches

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Decision
Corrected Model	26725.448[a]	3	8908.483	52.855	0.000	0.504	
Intercept	16431.904	1	16431.904	97.492	0.000	0.385	
Pre-test	118.494	1	118.494	0.703	0.403	0.004	
Post-test	380.661	1	380.661	2.259	0.135	0.014	
Approach	9443.132	1	9443.132	56.027	0.000	0.264	Significant.
Error	26293.152	156	168.546				
Total	382259.625	160					
Corrected Total	53018.600	159					

a. R Squared = .504 (Adjusted R Squared = .495)

The data in Table 7 above shows that the F-Stat is 56.027 and the p-value is 0.000. Since the P-value is less than the level of significance (p-value<0.05), the F-value is significant. The null hypothesis will be rejected as there is a statistically significant difference in the effect of the independent variable (Approach) on the dependent variable (retention scores- delayed post-test). The paired comparisons show the direction of the significant difference.

Table 8: Pairwise comparison result showing the significant mean difference in retention scores between approaches

Pairwise Comparisons

Dependent Variable: Delay Post-test					95% Confidence Interval for difference[b]	
(I) Approach	(J) Approach	Mean Difference (I-J)	Std. Error	Sig.[b]	Lower Bound	Upper Bound
BLA	CCA	30.54*	3.413	.000	18.806	32.291
CCA	BLA	-30.54*	3.413	.000	-32.291	-18.806

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

b. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

The result in Table 8 shows that the retention scores of students taught financial accounting with blended learning approach has a positive mean difference of 30.34 in

comparison to the scores of those taught using conventional approach. Also the P-value of 0.000 show that the mean difference is statistically significant. Therefore, the null hypothesis is rejected. The retention scores of students taught financial accounting using blended learning approach significantly defers from those taught using conventional approach.

Hypothesis 3

There is no significant difference between the academic achievement scores of male and female students taught financial accounting using blended learning approach.

Table 9: ANCOVA result showing difference in mean achievement scores of male and female students taught financial accounting with blended learning approach

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Decision
Corrected Model	1685.047[a]	2	842.524	10.681	0.000	0.379	
Intercept	8667.668	1	8667.668	109.886	0.000	0.758	
Pre-test	1346.916	1	1346.916	17.076	0.000	0.328	
Gender	62.176	1	62.176	0.788	0.381	0.022	Not Significant
Error	2760.764	35	78.879				
Total	154041.813	38					
Corrected Total	4445.811	37					

a. R Squared = .379 (Adjusted R Squared = .344)

The data in Table 9 shows that the F-value for gender variable effect on the post-test scores was 0.788 and the p-value was 0.381 which is not statistically significant. The hypothesis will not be rejected as the p-value is greater than the level of significance (P-value>0.05). The pairwise comparison shows it better.

Table 10: Pairwise comparison result showing the significant mean difference in achievement scores of male and female students

Pairwise Comparisons						
Dependent Variable: Post-test		Mean Difference (I-J)	Std. Error	Sig.[a]	95% Confidence Interval for difference[a]	
(I) Gender	(J) Gender				Lower Bound	Upper Bound
Male	Female	6.00	3.008	.381	-3.435	8.776
Female	Male	-6.00	3.008	.381	-8.776	3.435

The data in Table 10 shows that male students had a mean difference of 6.00 over their female counterparts and a p-value of 0.381 which is not significant. The null hypothesis is therefore, not rejected and that means that the achievement scores of male students taught financial accounting with blended learning approach do not significantly differ from their female counterparts.

Hypothesis 4

There is no significant difference in the retention scores of male and female students taught financial accounting using blended learning approach.

Table 11: ANCOVA result showing difference in mean retention scores of male and female students taught financial accounting with blended learning approach

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Decision
Corrected Model	779.455[a]	3	259.818	3.599	0.023	0.241	
Intercept	2062.995	1	2062.995	28.576	0.000	0.457	
Pre-test	72.393	1	72.393	1.003	0.324	0.029	
Post-test	224.208	1	224.208	3.106	0.087	0.084	
Gender	7.512	1	7.512	0.104	0.749	0.003	Not Significant.
Error	2454.538	34	72.192				
Total	180172.125	38					
Corrected Total	3233.993	37					

a. R Squared = .241 (Adjusted R Squared = .174)

The data in Table 11 shows that the F-value obtained is 0.104 and the p-value is 0.749. The p-value is higher than the level of significance (p-value > 0.05). The hypothesis will be retained because the difference is not statistically significant. What this means is that male and female students taught financial accounting with blended learning approach do not significantly differ in their retention scores. The pairwise comparisons shows it more in the table below.

Table 12: Pairwise comparison result showing the significant mean difference in retention scores of male and female students

Pairwise Comparisons

Dependent Variable: Delayed post-test					95% Confidence Interval for Difference[a]	
(I) Gender	(J) Gender	Mean Difference (I-J)	Std. Error	Sig.[a]	Lower Bound	Upper Bound
Male	Female	3.59	2.909	.749	-4.974	6.851
Female	Male	-3.59	2.909	.749	-6.851	4.974

The data in Table 12 shows that the male students had a mean difference in the delayed post-test scores above their female counterparts. However, this difference is not significant as a result, the hypothesis is not rejected. Male students taught financial accounting with blended learning approach did not significantly differ from their female counterparts in their retention scores.

Hypothesis 5

There is no significant interaction effect of blended learning approach, conventional approach and gender on students' achievement scores in financial accounting.

Table 13: ANCOVA result showing the interaction effect of blended learnng approach, conventional approach and gender on students' achievement scores in financial accounting

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Decision
Corrected Model	27873.449[a]	4	6968.362	45.174	0.000	0.538	
Intercept	24270.562	1	24270.562	157.340	0.000	0.504	
Pre-test	1567.174	1	1567.174	10.160	0.002	0.062	
Approach	18212.456	1	18212.456	118.067	0.000	0.432	
Gender	317.501	1	317.501	2.058	0.153	0.013	
Approach * Gender	8.841	1	8.841	0.057	0.811	0.000	Not Significant.
Error	23909.548	155	154.255				
Total	307523.063	160					
Corrected Total	51782.996	159					

a. R Squared = .538 (Adjusted R Squared = .526)

The data in Table 13 reveals that the F-cal for Approach*Gender is 0.057 and the p-value is 0.811 which is greater the level of significance (p-value > 0.05). The p-value is not statistically significant which means that the hypothesis will be retained. When considered separately, the approach variable had a significant effect on students' achievement in financial accounting, while the gender variable did not, but the interaction between these variables do not significantly influence the dependent variable. Therefore, the hypothesis will not be rejected. The interaction effect of approach and gender on students' academic achievement in financial accounting is not statistically significant.

Hypothesis 6

There is no statistically significant interaction effect of blended learning approach, conventional approach and gender on students' retention scores in financial accounting.

Table 14: ANCOVA result showing the interaction effect of blended learning approach, conventional approach and gender on students' retention scores in financial accounting

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Decision
Corrected Model	26956.621[a]	5	5391.324	31.857	0.000	0.508	
Intercept	15951.867	1	15951.867	94.259	0.000	0.380	
Pre-test	73.376	1	73.376	0.434	0.511	0.003	
Post-test	404.014	1	404.014	2.387	0.124	0.015	
Approach	9551.138	1	9551.138	56.438	0.000	0.268	
Gender	0.332	1	0.332	0.002	0.965	0.000	
Approach * Gender	165.228	1	165.228	0.976	0.325	0.006	Not significant.
Error	26061.979	154	169.234				
Total	382259.625	160					
Corrected Total	53018.600	159					

a. R Squared = .508 (Adjusted R Squared = .492)

The data in Table 14 reveals that the F-value for Approach*Gender is 0.976 while the p-value is 0.325. Since the p-value is greater than the level of significance (p-value > 0.05), the interaction effect of the two independent variables on the dependent variable is not statistically significant. The hypothesis is therefore retained. This means that there is no significant interaction effect of blended learning approach, face-to-face approach and gender on the retention scores of business education students in financial accounting.

Summary of Findings

The findings of the study are summarized below:

1. Blended learning approach had a higher effect on students' academic achievement scores in financial accounting when compared to conventional approach.

2. Blended learning approach had a higher effect on students' retention in financial accounting than conventional classroom approach.
3. Blended learning approach had more effect on female students' achievement scores in financial accounting than on that of the male students.
4. Blended learning approach had more effect on female students' retention scores in financial accounting than on that of the male students.
5. The effect of blended learning approach on students' achievement scores in financial accounting was statistically significant.
6. There was a statistically significant difference between the retention scores of students taught financial accounting using blended learning approach and those taught using conventional classroom approach.
7. The achievement scores of male students taught financial accounting with blended learning approach did not significantly differ from their female counterparts.
8. Male students taught financial accounting with blended learning approach did not significantly differ from their female counterparts in their retention scores.
9. The interaction effect of approach and gender on students' academic achievement in financial accounting was not statistically significant.
10. There was no significant interaction effect of approach and gender on students' retention scores in financial accounting.

CHAPTER FIVE

DISCUSSION, CONCLUSION AND RECOMMENDATIONS

This chapter contains the discussion of the findings, summary of the research work, conclusion, recommendations, educational implication and suggestions for further study.

Discussion of Findings

This session contains the discussion of the results presented in chapter four. The discussion was done based on the research questions asked and the hypotheses formulated inchapter one.

Blended Learning and Students' Academic Achievement in Financial Accounting

The data gathered under research question one and presented in Table 1, show that students taught financial accounting with blended learning approach had a mean gain of 29.82 while those taught with conventional classroom approach had a mean of 8.60 in their achievement scores. This indicates that although the two approaches had positive effects, the blended learning approach had a higher positive effect on the students' achievement scores than the conventional approach. The results of this study are in line with those of Lopez-Perez, Perez-Lopez, and Rodriguez-Ariza (2013) who found out that blended learning approach had a positive effect on undergraduate students' performance in four different business programs. The increase in students' academic achievement may be as a result of the increase participation level of students in blended learning approach. Blended learning approach mixes the benefits of both face-to-face approach and online learning approach to create a blend that is better for the students (Kose, 2010; Benson, Anderson, & Ooms, 2011). The findings also agree with the studies of Chak and Fung (2015) and Kiviniemi (2014), who discovered that students'

performance increased better in the blended learning model than in the conventional face-to-face approach. While Chak and Fung (2015) discovered that students' performance improved significantly in the online quiz model, Kiviniemi's study showed that students indicated more interest in the blended learning class and as such their participation was higher.

The result of the test of hypothesis one, which was presented on Table 5, showed that the p-value was significant (P-value<0.05), and as such the hypothesis was rejected. This means that there is a significant difference between the achievement scores of business education students taught financial accounting with the blended learning approach and those taught with the conventional face-to-face approach. This difference is in favour of the blended learning approach (as shown in Table 6). The results are in line with those of Marchalot, Dureuil, Veber, Fellahi, Hanouz, et al. (2017); Shorey, Kowitlawakul, Devi, Chen,et al. (2017) and Gogo (2018), who all discovered a significant difference in the performance of students taught with blended learning models from those taught with face-to face approaches.

However, some other studies are not in agreement with the findings of this particular study. Jones and Chen (2008) did not discover a significant difference in students' outcomes in the two approaches. They found out that blended learning approach fell short in areas like students engagement and teacher preparedness. Keller, John, Sally, and James (2009) also pointed out that there was no difference between blended learning and traditional learning approaches. This may be based on the pattern of employment of blended learning. Moreso, though blended learning approach may increase students' participation level, there is the possibility of high-drop out rates as in fully online learning models (Berge & Yi-ping, 2004). The teacher will have to discover the best model of blending face-to-face approach and online approach in other to encourage students' continued participation. Also, there is the possibility of distractions from

technology usage in blended learning approach which may not be present in conventional face-to-face approch.

Blended Learning and Students' Retention in Financial Accounting

The results of research question two, which was presented in Table 2, reveal that business education students taught financial accounting with blended learning approach had a higher mean gain on their retention scores than those taught with conventional classroom approach. The mean score of the delayed post test for the experimental group was 68.43 while that of the control group was 37.89. The mean gain of the experimental group was 5.37 while that of the control group was 4.66. Blended learning approach had a higher effect on students' retention in financial accounting than conventional approach. The findings are in line with those of Eze, Ezenwafor and Obidile (2016), Okocha, Eyiolorunshe, and Oguntayo (2016) and Noni, Abdullah and Ismail (2017), who found higher retention scores of students taught financial accounting with special methods like problem-based method, blended learning and e-learning models as against the conventional teaching method.

From the results, blended learning approch aids retention of learning content taught, and this is because it encourages self-paced learning, place-flexibility and ease of acess of learning materials (Gecer,2013; Kose, 2010). This enables students to learn at their own time and speed. Slow learners are not in a hurry to catch up what the teacher is saying, as in the case of conventional classroom approach. Students are at liberty to interract with the learning materials in any way they deem fit. This could enhance their understanding of what is being taught. Retaining what is being taught is very important as such knowledge is transferred into the students' residual knowledge which can be applied in practical situations in the place of work. Blended learning combines the best of online learning and face-to-face learning to give the

students that atmosphere to interract constructively with learning materials, thereby forstering and improving their retention (Franks, Kramer, Rankin & Wooten, 2018).

The results of the test of hypothesis two, which is presented in Table 7 showed that the p-value is less than the level of significance (p-value<0.05). The ANCOVA result indicates that there is a statistically significant difference in the effect of the independent variable (Approach) on the dependent variable (retention scores- delayed post-test). The hypothesis is therefore rejected. This means that the retention scores of business education students taught financial accounting with blended learning approach differ significantly from those who were taught with conventional approach. The results are in line with the findings of Suleiman, Salaudeen, and Falode (2017) who discovered that there was a significant difference in the retention of students taught chemistry with computer-based blended learning strategies. They discovered that the computer-based blended learning had significant impact on students' retention scores.

Gender and Academic Achievement

The results of research question three, which was presented in Table 3 reveal that female students taught financial accounting with blended learning approach had a higher main gain score than their male counterparts (males=29.59; females=30.06). It therefore means that blended learning approach in the teaching of financial accounting had more effect on female students' achievement scores than on that of the male students. The finding is contrary to the findings of Du (2011) and Gogo (2018) who discovered that male students performed better than the female students on an e-learning course taught with a blended learning approach. An explanation for this, may be that male students are less technophobic than female students. Male students tend to explore technology for education more than female students. On the other hand,

the finding collaborates the findings of Nnamani and Oyibe (2016) who discovered that female students had higher mean achievement scores than males in social studies.

The null hypothesis three was tested using ANCOVA and the result, which is presented in Table 9 indicates that the F-value of 0.788 is not significant (P-value>0.05; 0.381>0.05) As a result the hypothesis was retained. It therefore means that the achievement scores of male students taught financial accounting with blended learning approach do not significantly differ from their female counterparts. Though the female students had a higher mean gain on achievement scores than the male students taught financial accounting with blended learning approach, the results show that the difference is not statistically significant. This is in line with the findings of Eze, Ezenwafor and Obidile (2016), Okocha, Eyiolorunshe, and Oguntayo (2016) and Noni, Abdullah and Ismail (2017) who found out that male and female students did not differ in their achievement scores. However, the finding is different from the findings of Nnamani and Oyibe (2016) who found out that that there was significant difference in the mean achievement of secondary school students in Social Studies based on gender. Also, this finding contradicts the views of Venkatesh, Morris, Davis, and Davis (2003), and Venkatesh and Morris (2000), who reported that gender had a great role to play in technology acceptance.

Gender and Retention

The result of research question four, presented in Table 4 reveal that female students taught financial accounting with blended learning approach had a higher mean gain on retention scores than their male counterparts. The mean retention score of female students was 66.63 and the mean gain on retention scores was 6.57. On the other hand, the mean retention score of male students was 70.22 and the mean gain was 4.16. The result show that female students improved more on retention scores than male students when mean gain scores are considered. It therefore

means that blended learning approach in the teaching of financial accounting had more effect on female students' retention scores than on that of the male students.

This finding is in line with the findings of Nnamani and Oyibe (2016) who discovered that female students had a higher achievement score than their male counterparts in social studies and that there was a significant difference in the scores of male and female students. Suleiman, Salaudeen, and Falode (2017) also found out there was a significant difference in the retention scores of male and female students taught Chemistry through a computer-based blended learning strategy.

The test of hypothesis four, which is presented in Table 11, indicated that gender did not have a significant effect on students' retention in Financal Accounting. The F-value of 0.104 was not significant as p-value was greater than the alpha level (p-value>0.05; 0.749>0.05). The hypothesis was therefore retained. What this means is that male and female students taught financial accounting with blended learning approach did not significantly differ in their retention scores. Though female students had a higher mean gain on retention scores than male students, the result indicates that this difference is not statistically significant.

This finding is line with that of Eze, Ezenwafor and Obidile (2016) who found that there was no significant difference in the mean retention scores of male and female students taught financial accounting using Problem-based teaching method. This finding contradicts the findings of Nnamani and Oyibe (2016) and Suleiman, Salaudeen, and Falode (2017), who found out that there was a significant difference in the retention scores of male and female students.

Interraction effect of Approach and Gender on Academic Achievement

The result of the test of hypothesis 5 presented in Table 13 shows that the interraction between approach and gender (Approach*Gender) had a p-value of 0.811 which is not significant (p-value > 0.05; 0.811> 0.05). The hypothesis was therefore retained. This means that interaction effect between approach and gender on students' academic achievement score is not statiscally significant. Though approach, as an independent variable, had a significant effect on students' achievement scores, the interaction between approach and gender did not have a significant affect on students achievement scores in financial accounting. The results are in line with Kiviniemi (2014) who found significant effect of blended learning on students' achievement scores, and Eze, Ezenwafor and Obidile (2016) who found no significant difference in students scores as a result of gender.When considered separately, blended learning approach had a higher effect on students' achievement scores than conventional approach. Also, male and female students taught with blended learning approach had higher achievement scores than their counterparts taught with conventional classroom approach. However, when considered together, there appears to be interaction between the approaches and gender on the students' achievement score in financial accounting. This is evident in the mean gain score of male students taught with conventional approach which is higher than male students taught with blended learning approach. The finding is in line with the views of Chak and Fung (2015) and Kiviniemi (2014) who discovered a positive effect of blended learning on male and female students' achievement scores.

Interraction effect of Approach and Gender on Retention

The test of hypothesis six, presented in Table 14, show that the interaction of approach and gender (Approach*Gender) on students' retention scores was not significant. The F-cal was

0.976 and the p-value was 0.325. Since the p-value was greater than the level of significance, the F-cal is not statistically significant (p-value > 0.05; 0.325>0.05). The hypothesis is therefore retained. This means that the interaction between blended learning approach, conventional approach and gender on students' retention scores in Financial is not significant. The result indicated that the mean gain scores of male and female students taught with blended learning approach were higher than those taught with conventional classroom approach. The result shows no interaction effect as for every level of gender, students taught with blended learning approach had the high mean gain retention score than those taught with face-to-face approach. This is in line with the findings of Suleiman, Salaudeen, and Falode (2017) who found out that a computer-based blended learning strategy improved male and female students' retention scores in Chemistry.This finding is line with the findings of Eze, Ezenwafor and Obidile (2016) who found out that there was no significant difference in the mean retention of male and female students taught financial accounting with problem-based teaching.

Conclusion

From the findings of the study, it is concluded that blended learning approach has a higher effect on business education students' achievement and retention in financial accounting than the conventional classroom approach. This is because blended learning approach encourages self-paced learning, increased students' participation and is more student-friendly than the conventional classroom approach. It is concluded that students' gender did not significantly affect their academic achievement and retention in financial accounting whether they were taught with either blended learning approach or face-to-face approach.

Implications of the study

This study revealed that blended learning approach can help improve business education students' academic achievement and retention in financial accounting. This is because blending the best of face-to-face class instruction and online learning modalities get students more involved as well as enabling self-paced learning. Although, blended learning modalities may require more effort from the teacher (especially at the initial stages), students are more engaged in the learning process thereby increasing their interaction with the learning materials.

Consequently, business education teachers and accounting educators have a great responsibility to attempt integrating blending learning models into their instructional strategy. Learning content have to be reorganized in such a way as to enable students have the opportunity to learn at their own speed and time. Educators will need to be trained on how to use learning management systems, like Moodle, Blackboard, Edmodo and so on, to facilitate learning especially at the tertiary levels.

Recommendations

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

1. Accounting Educators should adopt the flipped classroom model of blended learning approach in the teaching of financial accounting as it has a higher effect on students' academic achievement and retention.
2. Business Educators should pursue training in the use of Learning Management Systems, like Moodle, for teaching students because LMS can be used to facilitate blended learning.

3. University Management should consider the adoption of university-wide Learning Management Systems for increased acceptance of blended learning approach in the teaching and learning of courses like financial accounting.
4. University Management should provide internet service in the university campus so that students can have unhindered access to online materials placed on the platforms used for blended learning.
5. Professional institutions regulating the practice of Accounting should insist that lecturers of financial accounting, and other aspects of Accounting, use blended learning approach as it improves students' retention of what is taught.

Suggestions for further studies

The following suggestions are made:

1. A study to determine the effect of blended learning approach on students' drop out levels should be conducted.
2. Teachers' competence in the usage of blended learning modalities should be studied.
3. The study should be replicated for other aspects of Accounting, like Management Accounting and Cost Accounting.

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APPENDIX A - Population Distribution

IGNATIUS AJURU UNIVERSITY OF EDUCATION, PORT HARCOURT

FACULTY OF BUSINESS STUDIES

Number of Students for the 2017/2018 Session

	MGT	OIM	ACC	MKT	Total
Level 1	160	30	155	90	435
Level 2	162	67	149	73	451
Level 3	163	76	109	88	436
Level 4	104	69	93	75	341
Total	589	242	506	326	1663

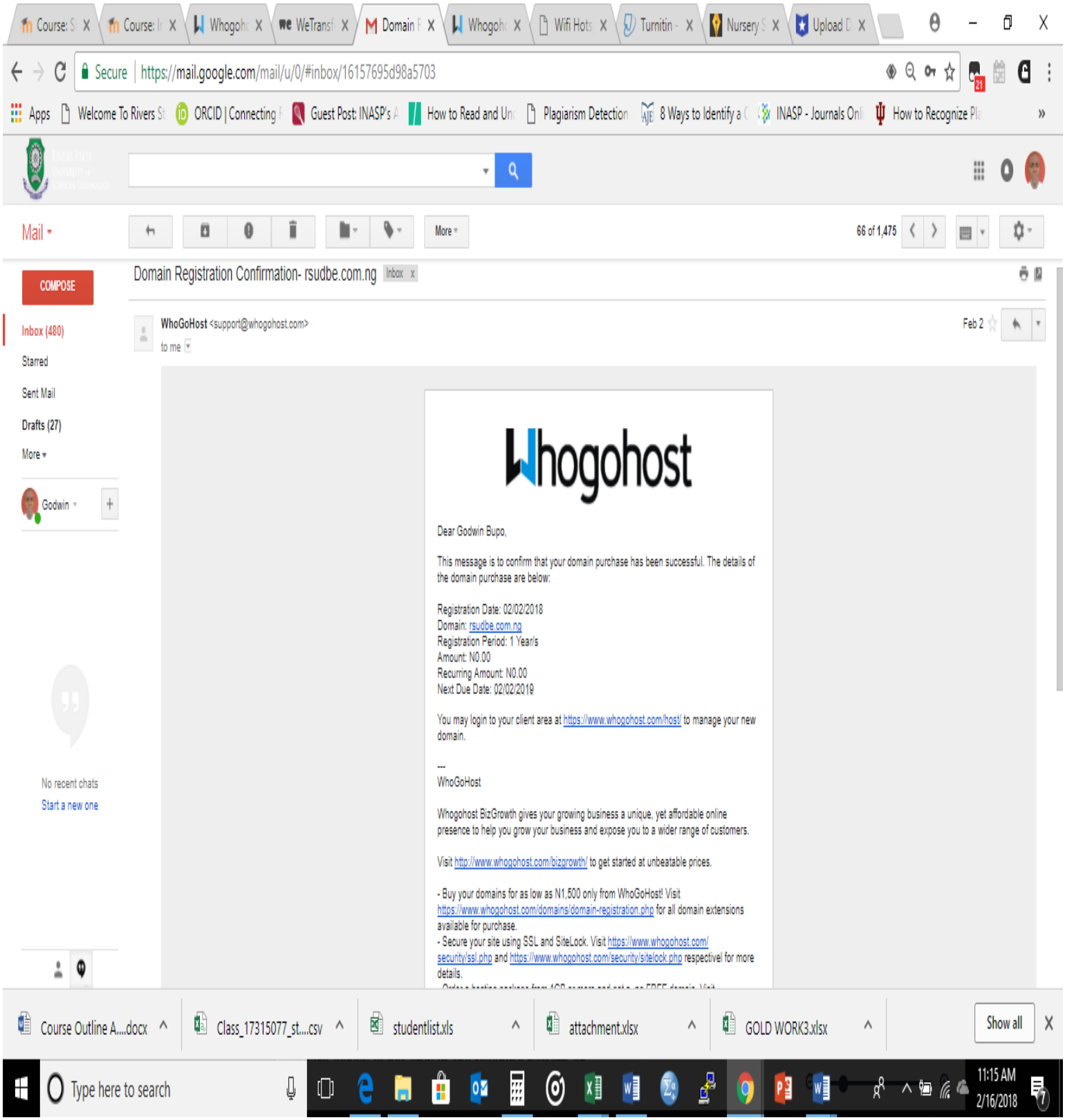
RIVERS STATE UNIVERSITY

DEPARTMENT OF BUSINESS EDUCATION

Number of Students for the 2017/2018 Session

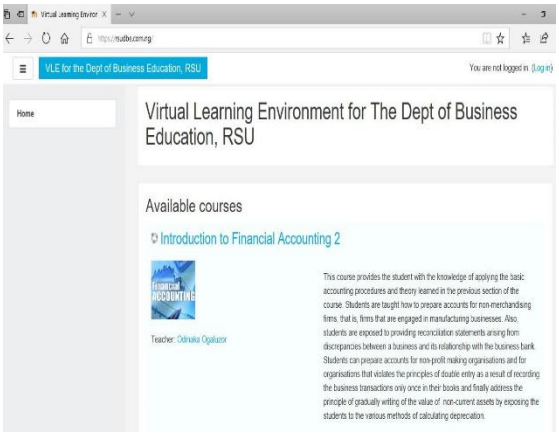
	MGT	OMT	ACC	MKT	Total
Level 1	180	4	53	13	250
Level 2	175	27	25	15	242
Level 3	217	20	56	36	329
Level 4	143	18	72	21	254
Total	715	69	206	85	1075

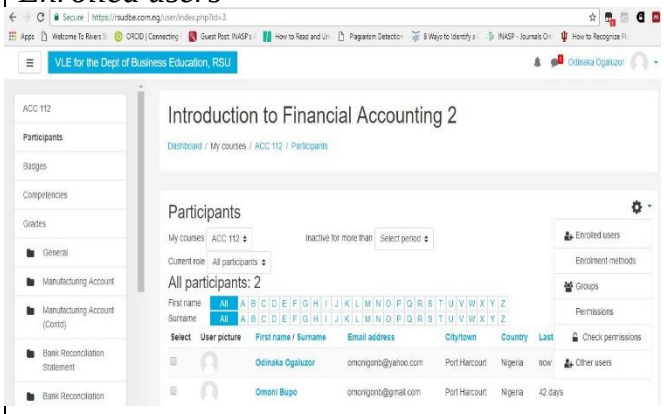
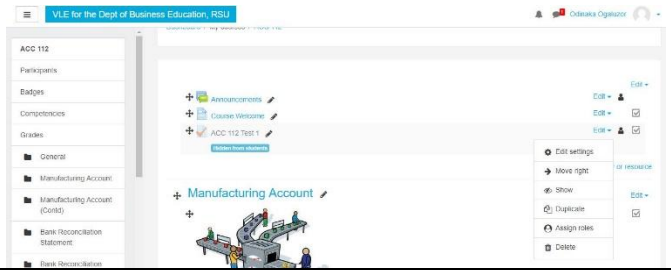
APPENDIX B – Screenshot of Domain Name Registration



APPENDIX C – Training Manual for Research Assistant for the Experimental Group

The research assistant for the experimental group (Blended Learning Approach) will be trained on how to navigate the Moodle site. The manual for training is presented in a tabular form below:

Area of Training	Training Process	Remark
Logging in	The research assistant will be shown how to log into the VLE Moodle site. The web address (www.rsudbe.com.ng) will be typed in the Universal Resource Locator (URL). The username and password has already being created for the research assistant. 	Done
Enrolling students	The research assistant will be taught how to enroll students into the course. There are several enrollment methods in Moodle. Enrollment means registering students to take the course. The manual enrollment method will be adopted, that is the teacher or site administrator will enroll the students into the course. In this case, the research assistant will be taught how to enroll students manually in the course. Steps: *Click *Participants* on the Nav Draw (top left	Done

	corner of the Course Page * Click the gear by the right and select *Enrolled users*  • Click on *enroll users* and select the users (whose email have been entered beforehand)	
Creating Forum Discussion group and participating in the Forum	To create Forum, "Turn Editing on", Click "Add an Activity or Resource", Select Forum from the activity chooser. Then choose the forum structure that is best.	Done
Pre-test and Post-test activation	To Activate the Pre-test, "Turn Editing On" on the course page, Click the gear menu beside the Pre-test and click the eye icon to activate the pre-test. The same process applies to the Post-test.  	Done
Assessing students' scores and grades	To assess students' grades, click on the Grade tab in the Navigation Draw by the left corner of the course page. Then click view grades and a list of participants and their grades will be shown.	Done
Monitoring Students' participation	To monitor students' participation, click on the Grade tab in the Navigation Draw, then click the tab *User report.*	Done

APPENDIX D - LESSON NOTES

Control Group (Week 1)

Class: Accountancy Department

Duration: 2 Hours

Course: ACC 121 – Introduction to Financial Accounting 2

Topic: Manufacturing Account – Analysis of Cost

Sex: Male and Female

Age: 16years and above

Learning Objectives: By the end of the lesson, students should be able to

a) Explain direct cost (material and labour)
b) Describe factory overhead costs
c) Define administrative overhead costs
d) Illustrate the different stocks of a manufacturing business

Instructional Techniques: Listening and note taking, and use of examples.

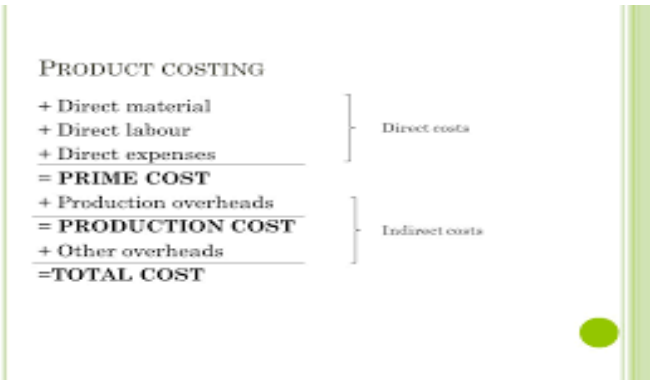
Instructional Materials: The teacher, students, recommended text book, white board and marker.

Entry Behaviour: Students can prepare final accounts for non-manufacturing firms.

Set Induction: The teacher reminds the students of the accounts prepared for non-manufacturing firms and why some firms manufacture their products.

Instructional Procedure

CONTENT	TEACHER ACTIVITIES	STUDENT ACTIVITIES	INSTRUCTIONAL STRATEGIES
Introduction to the lesson	The teacher gives the course outline to the students. The course will cover the following topics: 1. Manufacturing Account 2. Bank Reconciliation Statement 3. Control Account 4. Accounting for Non-Profit oriented organizations 5. Accounting for depreciation The teacher then reminds the students of the accounts prepared by sole traders who buy and sell finished goods. The teacher	The students listen and take down the course outline in their notes	Lecture notes, recommended text book, White board and marker.

	then explains that other businesses may decide to produce the goods that they sell.		
Reason for Manufacturing Account	The reasons for manufacturing their own product include: • The production cost could be cheaper • Could lead to other streams of income These businesses ought to maintain a manufacturing account. The purpose of a manufacturing account is to determine the production cost of the goods manufactured. Some importance of the manufacturing account are: • 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.	The students listen, take down points and ask questions.	
Analysis of costs	The teacher draws the diagram:  The teacher explains that direct material costs when added to direct labour costs and direct expenses gives the **prime cost**. When prime cost is added to factory or manufacturing overheads, the result is **production cost** or cost of goods manufactured. In general, direct materials, direct labour, direct expenses and factory overhead are the four elements of manufacturing cost usually recognized in a manufacturing account. The cost of goods manufactured is transferred to the trading account to take the place of purchases. The combination of production cost with the selling, distrbution and administration overheads gives the total cost which when compared with the selling price of the product results in a profit or a loss.	The students draw the diagram, listen, take down points and ask questions.	
Direct Materials	The teacher explains the meaning of direct materials which are those materials that become an integral part of the finished product, the cost of which can be conveniently traced or identified with the finished product. Example: the wood in a table, the sheet steel in filing cabinet, the cost of carriage on raw materials and so on.	The students listen, take down points and ask questions.	

Direct Labour	The teacher explains that direct labour refer to labour costs that can be physically traced and allocated without undue cost and inconvenience to the creation of products. Such labour costs can be traced without difficulty to the end product. Example: the labour costs of carpenters, bricklayers and machine operators.	The students listen, take down points and ask questions.	
Direct Expenses	The teacher explains that direct expenses are those expenses other than direct material and direct labour costs that are also directly incurred and could be easily identified in production. Examples include the hire of special purpose tools or equipment for a particular job, maintenance cost of such equipment, royalties paid per unit of output by the manufacturer etc.	The students listen, take down points and ask questions.	
Factory Overheads	The teacher explains that factory overheads refers to all cost of manufacturing except direct materials and direct labour. Such expenses cannot be directly traced to any of the units produced. Examples: factory fuel and power, lubricants, factory salaries, factory insurance, depreciation of production plant and machinery and so on.	The students listen, take down points and ask questions.	
Selling and Distribution Overheads	The teacher explains that selling and distribution overheads are non-manufacturing costs incurred in inducing customers to place orders and in getting the finished product from the factory to the customer. Examples: carriage outwards, warehouse wages and insurance, salesmen commission and salaries etc.	The students listen, take down points and ask questions.	
Administrative overheads	The teacher explains that these are expenses incurred in managing the enterprise that cannot logically be included under either production or selling costs. Examples: top management costs, office salaries, office rent, rates and insurance etc.	The students listen, take down points and ask questions.	
Stocks of a Manufacturing Firm	The teacher explains the three types of stocks of a manufacturing business. a) Stocks of raw materials are raw materials at the end of the period that are accounted for in the manufacturing account when calculating the cost of raw materials used. b) Stock of work-in-progress or unfinished goods are those goods not yet fully manufactured at the date of the preparation of the final accounts. They are accounted for in the manufacturing account when calculating prime cost. c) Stock of finished goods are stock of goods already manufactured but have not been sold at the end of the period. They are accounted for in the trading account when calculating gross profit.	The students listen, take down points and ask questions.	
Evaluation	The teacher asks the students to answer the following questions: (a) What is the main purpose of manufacturing account? (b) Explain the following in relation to manufacturing	The students answer the teacher's questions and	

	accounts: direct materials, direct labour, direct expenses and manufacturing overheads. (c) Explain the treatment of stock of work-in-progress in the manufacturing account.	also ask questions	
Conclusion	The teacher summaries the lesson for the day by reminding the students the analysis of cost and their meaning. The teacher also reminds the students the components of the manufacturing account. The teacher answers the questions of the students	The students listen carefully and ask questions	
Home Activity	Attempt the following questions. 1. What is the difference between direct materials and indirect materials? 2. Explain the components that make up the Prime cost 3. If the Prime cost is N400,000 and the direct expenses and direct labour are N15,000 and N40,000 respectively, what is the direct material cost?	Students take the home activity and solve the problem at home	

Experimental Group (Week 1)

Class: Accountancy option

Duration: 2 Hours

Course: ACC 112 – Introduction to Financial Accounting II

Topic: Manufacturing Account – Analysis of Cost

Sex: Male and Female

Age: 16years and above

Learning Objectives: By the end of the lesson, students should be able to

a) Explain direct cost (material and labour)
b) Explain factory overhead costs
c) Explain administrative overhead costs
d) Explain the different stocks of a manufacturing business

Instructional Techniques: Questioning, illustration, feedback, one-on-one attention.

Instructional Materials: The teacher, students, LMS, white board and marker.

Entry Behaviour: Students can prepare final accounts for non-manufacturing firms and the students have gone through the lesson content on the Learning Management System.

Set Induction: The teacher reminds the students of the accounts prepared for non-manufacturing firms and why some firms manufacture their products.

Instructional Procedure

CONTENT	TEACHER ACTIVITIES	STUDENT ACTIVITIES	INSTRUCTIONAL STRATEGIES
Review of Online Content	The teacher asks the students to comment on the lesson materials that were provided on the Learning Management System.	The students respond by commenting on the learning resources uploaded on the LMS.	Questioning and feedback
Reason for Manufacturing Account	The teacher asks the students to explain the reason for manufacturing account	The students explain the reasons why a manufacturing account is maintained.	The teacher applauds those students who get the answer correctly.

Analysis of costs	The teacher refers to the diagram on the analysis of cost posted on the Learning Management System and asks the students to explain the diagram	The students explains in their own understanding the analysis of coast as portrayed by the diagram.	The teacher validates or corrects the answers given by the students.
Class Activity	The teacher solves the exercise that was posted on the LMS: Attempt the following questions. 4. What is the difference between direct materials and indirect materials? 5. Explain the components that make up the Prime cost 6. If the Prime cost is N400,000 and the direct expenses and direct labour are N15,000 and N40,000 respectively, what is the direct material cost?	The students follow the explanation of the teacher and ask questions where they do not understand.	Illustration, demonstration and explanation.
One-one-One Attention	The teacher goes from desk to desk to see each student's work and listen to the students questions. The teacher answers the students' questions.	Students interact with the teacher showing him areas that they do not understand.	Questioning and feedback getting.
Evaluation	The teacher asks the students to answer the following questions: (a) What is the main purpose of manufacturing account? (b) Explain the following in relation to manufacturing accounts: direct materials, direct labour, direct expenses and manufacturing overheads. (c) Explain the treatment of stock of work-in-progress in the manufacturing account.	The students answer the teacher's questions and also ask questions	The teacher applaud those students who get the answer correctly.
Conclusion	The teacher summaries the lesson taught by reminding the students the analysis of cost and their meaning. The teacher also reminds the students the components of the manufacturing account. The teacher answers the questions of the students	The students listen carefully and ask questions	The teacher encourages the students to access the learning materials on the LMS in preparation for the next class.

Control Group (Week 2)

Class: Accountancy Department

Duration: 2 Hours

Course: ACC 121 – Introduction to Financial Accounting 2

Topic: Manufacturing Account – Market Value of Goods Manufactured

Sex: Male and Female

Age: 16years and above

Learning Objectives: By the end of the lesson, students should be able to:

a) Prepare a simple manufacturing account
b) Determine profit or loss on manufacturing
c) Prepare manufacturing accounts when market value of goods produced is introduced.

Instructional Techniques: Listening and note taking, and use of examples

Instructional Materials: The teacher, students, recommended text book, white board and marker.

Entry Behaviour: Students already know the cost elements involved in a manufacturing firm.

Set Induction: The teacher reminds the students of the reason for preparing a manufacturing account.

Instructional Procedure

CONTENT	TEACHER ACTIVITIES	STUDENT ACTIVITIES	INSTRUCTIONAL STRATEGY
Introduction of the lesson	The teacher reminds the students of last week's lesson ask questions based on the home activity given to the students.	Students listen carefully and ask questions based on home activity given to them last week.	Questionnaire and explanation
Preparing the Manufacturing Account	The teacher explains that the first stage in the preparation of a manufacturing account is the calculation of the cost of raw materials used. Opening stock of raw materials X Purchases of raw materials X Carriage inwards on raw materials X Cost of raw materials available for use X less closing stock of raw materials (X)	Students listen, take notes and ask questions.	Explanation and illustration

	Cost of raw materials consumed X Adjust Work-In-Progress: Add opening stock of Work-in-Progress X less closing stock of Work-in-Progress (X) Raw material cost of finished goods X The next step is to add direct wages to arrive at the **prime cost.** Factory overheads are then listed and added to the prime cost to get the cost of goods manufactured for the period. The cost of goods manufactured is carried forward to the trading account where it is added to the opening stock of finished goods (to take the place of purchases). Gross profit is then calculated by deducting cost of goods sold from net sales. Gross profit is carried forward to the profit and loss account. Selling, distribution and administration overheads are then deducted from the gross profit to arrive at a net profit/loss for the period.		
Format of a Manufacturing, trading and profit and loss account	The teacher further explains that the three sets of final accounts prepared for purposes of profit measurement in a manufacturing firm are the manufacturing account, the trading account and the profit and loss account. Each of these accounts could be built up separately. However, they could be prepared together in one single account. **Vertical Format** **KADI Enterprises** **Manufacturing, Trading and Profit and Loss Account for the year ended 31st Dec, 2010** ₦ ₦ Opening stock of raw materials X Purchases of raw materials X Purchases returns (X) Carriage on raw materials X Cost of raw materials available for use X Closing stock of raw materials (X) Cost of raw materials used X Manufacturing wages (i.e. direct wages) X Direct Expenses X Prime Cost X Add Factory overheads: Factory light and power X Factory insurance X	The students listen and take down the format.	Explanation and illustration

	Depreciation of production plant and machinery	X			
	Factory, rent and rates	X			
	Other factory overheads	X	X		
			X		
	Operating Work-In-Progress	X			
	Closing Work-in-Progress	(X)	X		
	Cost of Goods Manufactured		XX		
	Sales		X		
	Less Sales returns		(X)		
			X		
	Less Cost of goods sold	X			
	Opening stock of finished goods	X			
	cost of goods manufactured	X			
	Purchases of finished goods, if any	X			
	Purchase returns	(X)			
	Carriage on finished	X			
	Goods available for sale	X			
	Closing stock of finished goods	(X)			
	Cost of goods sold		(X)		
	Gross profit (on trading)		X		
	Add manufacturing profit, if any		X		
			X		
	Add other incomes:				
	Discount received	X			
	Interest received	X			
	Rent received	X			
	Dividends received	X			
	Commission received	X	X		
			X		
	Less Selling and distribution overheads:				
	Carriage outwards	X			
	Salesmen commission	X			
	Depreciation of delivery vehicles	X			
	Advertising	X			
	Discount allowed	X			
	Bad debt	X	(X)		
	Less Administration overheads:				
	Office salaries	X			
	Office rent and rates	X			

	Printing and Stationery X Administrative Insurance X Public Relations expense X (X) Net profit XX		
Market Value of goods Manufactured	The teacher explains that there are times when the manufacturing firm may want to determine how profitable it is to continue manufacturing a given product. This is sometimes done by comparing the actual cost of production with the hypothetical cost of purchase from an outside supplier. In other words, the firm may want to know how much it would cost it to buy similar goods in the open market on the day of transfer of production cost to the trading account. Such comparison enables the firm to determine the gross profit or loss on manufacture of the product. Where the market value of goods produced exceeds the factory cost, a gross profit on manufacture is said to have resulted. On the other hand, if the factory cost of production exceeds the market value of the goods produced, a net loss on manufacture would have resulted. ₦ Cost of goods Manufactured X Gross Profit/(loss) on goods manufactured X Market value of goods produced XX	The students listen carefully and take down notes	Explanation
Treatment of Profit/loss when market value is introduced	The teacher explains that when the market value of goods manufactured is introduced, two figures of gross profit is shown. a) Gross profit/loss on manufacture b) Gross profit/loss on trading. The two gross figures are transferred to the profit and loss account accordingly. The teacher emphasizes that the market value must be treated twice in the accounts – once to the manufacturing account and the other to the trading account (to substitute for cost of goods produced). Similarly, the profit or loss on manufacture must appear once in the manufacturing account and second time in the profit and loss account.	The students listen carefully and take down notes	
Evaluation	The teacher asks the students to (a) Explain the steps in preparing a manufacturing account. (b) Outline the treatments applied when the market value of goods produced is introduced in to the manufacturing account	Students answer the teacher's question and also ask questions	Applauding students who get the answers correctly.
Conclusion	The teacher summarizes the lesson by explaining the process of preparing manufacturing account and how to treat profit or loss when market value of goods produced is introduced. The teacher also answers the students' questions.	Students listen and asks questions	Summary
Home Activity	The teacher gives the students two take home activities: **Activity one:**	Students take the home activity and solve the	

	From the following information extracted from the books of TORDI enterprises, you are required to prepare manufacturing, trading and profit and loss account for the year ended 30th June, 2008 and a balance sheet as at that date. ₦ Capital 68850 Building Cost 36000 Production, plant and machinery (at cost) 34500 Stocks 1/7/07: Raw materials 4500 Work-in-progress 6900 Finished goods 5400 Debtors 19500 Creditors 9750 Prepaid expenses 30/6/08 2850 Accrued expenses 30/6/08 3450 Provisions for depreciation 1/7/07: Buildings 6000 Production Plant and Machinery 15000 Drawings 12000 Cash at bank 45000 Sales 138000 Carriage on raw materials 900 Salesmen' salaries and expenses 7500 Bad debts 75 Heat and light - factory 500 Heat and light - offices 250 Wages - factory direct 22650 Wages - factory indirect 6075 Rates - factory 600 Rates - office 300 Printing and stationery 3150 Purchases -raw materials 31800 Purchases - finished goods 34350 Office expenses 1800 Motor vehicle expenses 1950 Factory overhead expenses 3000 The following information is	problems at home	

relevant:

a) Stocks - 30/6/08

Raw materials	3000
Work-in-progress	6750
Finished goods	1150

b) Depreciation is to be provided for:

Production plant and machinery	3000
Factory buildings	1500
Office buildings	500

Activity 2

VICKA Enterprises books include the following balances at 31st December, 2008

Sales (less returns): finished goods ₦82,000
Purchases (less returns): Raw materials ₦ 30,300
Purchases (less returns): finished goods ₦ 10,000
Stocks at 1st January, 2008:
- Raw materials ₦ 5,000
- W-I-P ₦ 8,000
- Finished goods ₦ 5,000

Factory wages and salaries:
- Direct ₦ 20,000
- Indirect ₦ 2,000

Factory Overhead Costs:
- Fuel ₦ 1,500
- Rent and rates ₦ 1,700
- Insurance ₦ 1,000

At 31st December, stocks held were:
- Raw materials ₦ 4,000
- W-I-P ₦ 9,000
- Finished goods ₦ 6,000

You are required to prepare the manufacturing account and trading account for Vicka Enterprises for 2008. In addition, it is known that the goods manufactured could have been purchased for ₦ 60,000. What was the profit or loss on manufacturing and on trading in 2008?

Experimental Group (Week 2)

Class:	Accountancy option
Duration:	2 Hours
Course:	ACC 112 – Introduction to Financial Accounting 2
Topic:	Manufacturing Account – Market Value of Goods Manufactured
Sex:	Male and Female
Age:	16years and above
Learning Objectives:	By the end of the lesson, students should be able to: a) Prepare a simple manufacturing account b) Determine profit or loss on manufacturing c) Prepare manufacturing accounts when market value of goods produced is introduced.

Instructional Techniques: Explanation, illustration, questioning, one-on-one attention and feedback.

Instructional Materials: The teacher, students, LMS, white board and marker.

Entry Behaviour: Students already know the cost elements involved in a manufacturing firm. Also, the students have accessed the learning resources on the LMS before the class.

Set Induction: The teacher reminds the students of the reason for preparing a manufacturing account.

Instructional Procedure

CONTENT	TEACHER ACTIVITIES	STUDENT ACTIVITIES	INSTRUCTIONAL STRATEGY
Introduction of the lesson	The teacher reminds the students of last week's lesson and ask the students to comment on the lesson materials provided for week 3 on the LMS.	The students respond by recalling what was learned. They also ask questions based on the lesson materials posted for this week on the LMS	Questionnaire and explanation
Preparing the Manufacturing Account	The teacher ask the students to respond to the lesson materials posted on the LMS by explaining the steps involved in the preparation of manufacturing account.	The students answer the teacher's	Questioning, explanation and illustration. The

<table>
<tr><td></td><td></td><td>question by explaining what they understand from the lesson materials posted on the LMS as to the steps on the preparation of manufacturing.</td><td>teacher validates the responds of the students. He corrects those who are not correct.</td></tr>
<tr><td>Format of a Manufacturing, trading and profit and loss account</td><td>The teacher reminds the students of the formats of manufacturing accounts.</td><td>The students ask questions on the format of manufacturing account.</td><td>Explanation and illustration</td></tr>
<tr><td>Class Activity</td><td>The teacher solves the two activities posted on the LMS.
Activity one:
From the following information extracted from the books of TORDI enterprises, you are required to prepare manufacturing, trading and profit and loss account for the year ended 30th June, 2008 and a balance sheet as at that date.

<table>
<tr><td></td><td>₦</td></tr>
<tr><td>Capital</td><td>68850</td></tr>
<tr><td>Building Cost</td><td>36000</td></tr>
<tr><td>Production, plant and machinery (at cost)</td><td>34500</td></tr>
<tr><td>Stocks 1/7/07:</td><td></td></tr>
<tr><td>Raw materials</td><td>4500</td></tr>
<tr><td>Work-in-progress</td><td>6900</td></tr>
<tr><td>Finished goods</td><td>5400</td></tr>
<tr><td>Debtors</td><td>19500</td></tr>
<tr><td>Creditors</td><td>9750</td></tr>
<tr><td>Prepaid expenses 30/6/08</td><td>2850</td></tr>
<tr><td>Accrued expenses 30/6/08</td><td>3450</td></tr>
<tr><td>Provisions for depreciation 1/7/07:</td><td></td></tr>
<tr><td>Buildings</td><td>6000</td></tr>
<tr><td>Production Plant and Machinery</td><td>15000</td></tr>
<tr><td>Drawings</td><td>12000</td></tr>
<tr><td>Cash at bank</td><td>45000</td></tr>
<tr><td>Sales</td><td>138000</td></tr>
<tr><td>Carriage on raw materials</td><td>900</td></tr>
<tr><td>Salesmen' salaries and expenses</td><td>7500</td></tr>
<tr><td>Bad debts</td><td>75</td></tr>
</table>
</td><td>The student listen to the teacher as he solves the problem. The students take the notes and ask questions where they are not clear.</td><td>Demonstration, illustration, and explanation.</td></tr>
</table>

		Heat and light - factory	500	
		Heat and light - offices	250	
		Wages - factory direct	22650	
		Wages - factory indirect	6075	
		Rates - factory	600	
		Rates - office	300	
		Printing and stationery	3150	
		Purchases -raw materials	31800	
		Purchases - finished goods	34350	
		Office expenses	1800	
		Motor vehicle expenses	1950	
		Factory overhead expenses	3000	
		The following information is relevant:		
	a)	Stocks - 30/6/08		
		Raw materials	3000	
		Work-in-progress	6750	
		Finished goods	1150	
	b)	Depreciation is to be provided for:		
		Production plant and machinery	3000	
		Factory buildings	1500	
		Office buildings	500	
	Activity Two VICKA Enterprises books include the following balances at 31st December, 2008 Sales (less returns): finished goods ₦82,000 Purchases (less returns): Raw materials ₦ 30,300 Purchases (less returns): finished goods ₦ 10,000 Stocks at 1st January, 2008: Raw materials ₦ 5,000 W-I-P ₦ 8,000 Finished goods ₦ 5,000 Factory wages and salaires: Direct ₦ 20,000 Indirect ₦ 2,000 Factory Overhead Costs: Fuel ₦ 1,500 Rent and rates ₦ 1,700 Insurance ₦ 1,000 At 31st December, stocks held were: Raw materials ₦ 4,000			

	W-I-P ₦ 9,000 Finished goods ₦ 6,000 You are required to prepare the manufacturing account and trading account for Vicka Enterprises for 2008. In addition, it is known that the goods manufactured could have been purchased for ₦ 60,000. What was the profit or loss on manufacturing and on trading in 2008?		
One-one-One Attention	The teacher goes from desk to desk to see each students' work and listen to the students' questions. The teacher answers the students' questions.	Students interact with the teacher showing him areas that they do not understand.	Questioning and feedback getting.
Evaluation	The teacher asks the students to (a) Explain the steps in preparing a manufacturing account. (b) Outline the treatments applied when the market value of goods produced is introduced in to the manufacturing account	Students answer the teacher's question and also ask questions	Applauding students who get the answers correctly.
Conclusion	The teacher summarizes the lesson by explaining the process of preparing manufacturing account and how to treat profit or loss when market value of goods produced is introduced. The teacher also answers the students' questions.	Students listen and asks questions	The teacher encourages the students to access the learning resources provided on the LMS for next week's class.

Control Group (Week 3)

Class: Accountancy Department

Duration: 2 Hours

Course: ACC 121 – Introduction to Financial Accounting 2

Topic: Bank Reconciliation

Sex: Male and Female

Age: 16years and above

General Objectives: At the end of the lesson, the students should be able to understand the reasons for reconciling the bank statement with the cashbook.

Learning Objectives: By the end of the lesson, students should be able to

a) Explain the need for bank reconciliation
b) List and explain some typical timing differences between bank statement and cashbook balance
c) List and explain some informational differences between bank statement and cashbook balance

Instructional Techniques: Listening and note taking, and use of examples.

Instructional Materials: The teacher, students, recommended text book, white board and marker.

Entry Behaviour: Students have bank accounts and understand what a bank statement is.

Set Induction: The teacher asks the students if they have received debit bank alerts on their phones and whether they are aware of differences in what they expect their account balance should be and the actual balance.

Instructional Procedure

CONTENT	TEACHER ACTIVITIES	STUDENT ACTIVITIES	INSTRUCTIONAL STRATEGY
Introduction to the Lesson	The teacher asks the students if they have received debit bank alerts on their phones and whether they aware of differences in what they expect their account balance should be and the actual balance. The teacher reminds the students of the cashbook which is combination of the cash account and the bank account. The	The students listen to the teacher, take down notes and ask questions.	Set Induction and explanation

	bank column of the cash book provides details of all monies paid into the business bank account and withdrawals made from the bank by means of cheques. The bank, on its part, also maintains its own records of all such lodgements and withdrawals made by the customer and issues the customer a periodic statement summarizing the transactions between the bank and the customer. This is known as a **Bank Statement**. Comparing the two records (the cashbook and the bank statement) will reveal if there are errors or omissions. A reconciliation statement is prepared where there are discrepancies. Thus, a bank reconciliation statement is prepared to harmonize the bank balance as shown by the bank statement with the bank balance as shown by the bank column of the cash book.		
Reasons for Discrepancy	The teacher explains that the difference between the bank statement and the cashbook balance can be attributed to timing and informational differences. **TIMING DIFFERENCES** These differences are consequent upon the time cheques are written and presented to the bank. There could be unpresented cheques or uncredited cheques. a) Unpresented cheques: These are cheques that have been written in favour of people who for one reason or the other have not presented them for payment. b) Uncredited Cheques: These are cheques received by the business and debited to the cashbook but have not been credited in the Bank. The bank for one reason or the other, may delay in crediting the account which will cause timing difference in the balance of the cash bank and the bank statement. c) Errors by the bank: Bank errors in posting can also cause timing differences. **INFORMATIONAL DIFFERENCES** The teacher explains that there are transactions that may not be captured in the cashbook because the information may not be captured through the conventional book keeping. Examples are a) Direct payment into or from the bank: the bank may be given a standing order to make certain payments on the behalf of a customer on a regular basis. Example: insurance premium, annual subscription. Also, money could be paid directly into a customer's account by a third party. Example, dividends, interest on loans etc. b) Banks Charges: The bank usually charges the customers for services rendered and for the cost of the cheque books and stamp duty. Because these charges are not originally recorded in the cashbook, they would cause discrepancies between the cashbook balance and the bank statement balance.	The students listen to the teacher, take down notes and asks questions	Explanation

	c) Dishonoured cheques: Dishonoured cheques may arise from two angles: from the cheques paid by the business to suppliers or from customers to the business. The records in the cashbook have to be adjusted (with the value of dishonoured cheques).		
Reconciliation Steps	The teacher reminds the students of the double entry principle. Receipts into the bank are debited to the cashbook and credited to the customers' account in the bank. On the other hand, payments from the bank are credited to the cashbook and debited to the customer's account in the bank. The teacher further explains out the reconciliation steps: a)Tick the opening balance in the cash book against the opening balance in the bank statement. If they are different there may be uncredited or unpresented cheques in the previous period which would be shown in the previous bank reconciliation statement and the entries in the bank statement should be ticked off against the items shown in the previous reconciliation. b)Tick the entries on the debit side of the cash book against entries in the credit side of the bank statement and any item not ticked in the cash book represent items not credited. These may be cheques and cash paid into the bank the previous day or so but not yet credited. c) Tick entries on the credit side of the cash book against entries on the debit side of the bank statement and items not ticked in the cash book represent unpresented cheques. d) Items unticked on the debit side of the bank statement may possibly be bank charges, cost of cheque books , dishonoured cheques, direct payments made by the bank on behalf of the customer etc. e) Items unticked on the credit side of the bank statement may possibly be direct receipts by the bank on behalf of the customer or interest credited by the bank.	The students listen to the teacher, take down notes and ask questions.	
Evaluation	The teacher asks the students the following questions: a) Why is bank reconciliation necessary? b) List and explain some factors cause timing difference between the bank statement and the cashbook. c) List and explain some factors that could cause informational difference between the bank statement and the cashbook.	The students respond by answering the teacher's question.	
Conclusion	The teacher concludes by reminding the students the reasons for the bank reconciliation and the causes of discrepancies between the bank statement and the cashbook.	The students listen carefully to the teacher and ask questions	
Home Activity	The teacher gives the students the assignment below to solve at home: The following details were extracted from the books of		

	Akoko Co. Ltd for the month of June, 2003. ₦ Cash at bank per bank column of the cashbook 741 Balance per bank statement (debit) 300 Unpresented cheques 237 Deposit not entered by bank 1638 Dividends receivedby bank not entered in the cashbook 150 Cheques drawn for N2016 entered in cashbook as 2286 Bank charges net entered in cashbook 81 Cheques returned "refer to drawer" not entered in the cashbook 249 Credit transfer received by bank not entered in cashbook 270 Required: Prepare a statement reconciling the balances at 30th June, 2008: a) Without making adjustments to the cashbook b) By first making adjustments to the cashbook		

Experimental Group (Week 3)

Class: Accountancy option

Duration: 2 Hours

Course: ACC 112 – Introduction to Financial Accounting 2

Topic: Bank Reconciliation

Sex: Male and Female

Age: 16years and above

Learning Objectives: By the end of the lesson, students should be able to

a) Explain the need for bank reconciliation
b) List and explain some typical timing differences between bank statement and cashbook balance
c) List and explain some informational differences between bank statement and cashbook balance

Instructional Techniques: Explanation, illustration, questioning, one-on-one attention and feedback.

Instructional Materials: The teacher, students, LMS, white board and marker.

Entry Behaviour: Students have bank accounts and understand what a bank statement is.

Set Induction: The teacher asks the students if they have received debit bank alerts on their phones and whether they aware of differences in what they expect their account balance should be and the actual balance.

Instructional Procedure

CONTENT	TEACHER ACTIVITIES	STUDENT ACTIVITIES	INSTRUCTIONAL STRATEGY
Introduction to the Lesson	The teacher asks the students if they have received debit bank alerts on their phones and whether they aware of differences in what they expect their account balance should be and the actual balance.	The students respond to the teacher's question	Set Induction and explanation
Video on Causes of discrepancies between the bank statement and the cash book	The teacher asks the students to comment on the video uploaded on the LMS on the causes of discrepancies between the bank statement and cashbook.	The students comment on the video saying what they understand. They also ask questions where	Feedback gathering. The teacher also validates the comments of the students.

		they do not understand.	
Reconciliation Steps	The teacher asks the students to explain steps in carrying out bank reconciliation statement.	The students explain the practical steps of carrying out a reconciliation between a bank statement and the cashbook.	Questioning, The teacher gets feedback from the student and validates their answers.
Class Activity	The teacher gives the students an exercise and solves it with the students. The following details were extracted from the books of Akoko Co. Ltd for the month of June, 2003. ₦ Cash at bank per bank column of the cashbook 741 Balance per bank statement (debit) 300 Unpresented cheques 237 Deposit not entered by bank 1638 Dividends receivedby bank not entered in the cashbook 150 Cheques drawn for N2016 entered in cashbook as 2286 Bank charges net entered in cashbook 81 Cheques returned "refer to drawer" not entered in the cashbook 249 Credit transfer received by bank not entered in cashbook 270 Required: Prepare a statement reconciling the balances at 30th June, 2008: a) Without making adjustments to the cashbook By first making adjustments to the cashbook	The students listen and follow the demonstration of the teacher as he solves the exercise. The students also ask questions where they are not clear.	Demonstration, illustration and explanation.
One-one-One Attention	The teacher goes from desk to desk to see each students' work and listen to the students questions. The teacher answers the students' questions.	Students interact with the teacher showing him areas that they do not understand.	Questioning and feedback getting.
Evaluation	The teacher asks the students the following questions: (a) Why is bank reconciliation necessary? (b) List and explain some factors cause timing difference between the bank statement and the cashbook. (c) List and explain some factors that could cause	The students respond by answering the teacher's question.	Applauding students who get the answers correctly.

	informational difference between the bank statement and the cashbook.		
Conclusion	The teacher concludes by reminding the students the reasons for the bank reconciliation and the causes of discrepancies between the bank statement and the cashbook.	The students listen carefully to the teacher and ask questions	The teacher encourages the students to access the learning resources provided on the LMS for next week's class.

Control Group (Week 4)

Class: Accountancy Department

Duration: 2 Hours

Course: ACC 121 – Introduction to Financial Accounting 2

Topic: Bank Reconciliation Statement Formats

Sex: Male and Female

Age: 16years and above

Learning Objectives: By the end of the lesson, students should be able to

a) Describe the different bank reconciliation statement formats.
b) Prepare bank reconciliation statement without amending the cashbook.
c) Prepare bank reconciliation statement by first amending the cashbook
d) Prepare bank reconciliation when there is an overdraft

Instructional Techniques: Listening and note taking, use of examples, and examples.

Instructional Materials: The teacher, students, recommended text book, white board and marker.

Entry Behaviour: Students already know why bank reconciliations are necessary and the various causes of discrepancy between the bank account and the cash book.

Set Induction: The students are asked to show the home activity that they were asked to do last week.

Instructional Procedure

CONTENT DEVELOPMENT	TEACHER'S ACTIVITIES	STUDENTS ACTIVITIES	INSTRUCTIONAL STRATEGIES
Introduction	The teacher asks the students about the home activity that they were asked to do last week	The students respond by showing the teacher what they had done and asking questions	Questioning
Bank Reconciliation Statement Formats	The teacher explains that there are different formats for preparing the bank reconciliation statement. A) Where a bank reconciliation statement is to be prepared without first amending the	The students listen to the teacher's explanation, take down notes and asks questions.	Explanation and illustration

cashbook, use the format below:

(i)If the reconciliation is started with the cashbook balance:

	₦	₦
Balance as per cash book		X
Add:		
(a) Unpresented Cheques	X	
(b) Direct payment into bank	X	X
		XX
Deduct:		
(a) Uncredited Cheques	X	
(b) Bank Charges	X	
(c) Dishonoured cheques	X	
(d) Direct payments by bank on behalf of customer	X	(X)
Balance as per bank statement		XX

(ii) if reconciliation is started with the bank statement balance, the statement will appear thus:

	₦	₦
Balance as per bank statement		X
Add:		
(a) Uncredited cheques	X	
(b) Bank charges	X	
(c) Dishonoured Cheques	X	
(d) Direct payments by bank on behalf of customer	X	X
		XX
Deduct:		
(a) Unpresented cheques	X	
(b) Direct payments into bank	X	(X)
Balance as per cash book		XX

B) Where it is required to make adjustments to the cashbook (bank column) before preparing the reconciliation statement the guiding principle is that unpresented cheques, uncredited cheques and errors exclusively made by the bank will be

dealt with in the bank reconciliation statement. All other items are handled in the adjusted cashbook. Thus, direct payments into bank will be debited while bank charges and direct payments by bank on behalf of customer will be credited to the adjusted cashbook.

C) Overdrafts

The approach needed for reconciliation when the bank statement or cashbook shows an overdraft is the complete opposite of that needed when the account is not overdrawn. An overdraft, of course represents a negative balance in the bank – it is the amount owed to the bank by the customer.

If we start the reconciliation with the cash book figure, the statement will appear thus:

	₦	₦
Balance as per cashbook (O/D)		X
Add:		
(a) Uncredited cheques	X	
(b) Bank charges	X	
(c) Dishonoured Cheques	X	
(d) Direct payments by bank on behalf of customer	X	X
		XX
Deduct:		
(a) Unpresented cheques	X	
(b) Direct payments into bank	X	(X)
Balance as per bank statement		XX

However, if we start the reconciliation with bank statement figure, the statement will appear thus:

	₦	₦
Balance as per bank statement		X
Add:		
(a) Unpresented Cheques	X	
(b) Direct payment into bank	X	X

	XX **Deduct:** (a) Uncredited Cheques X (b) Bank Charges X (c) Dishonoured cheques X (d) Direct payments by bank on behalf of customer X (X) Balance as per cashbook (O/D) XX		
Class Activity	The teacher presents an example in the recommended text and solves it with the students.	The students participate by following the solving and taking down notes.	Illustration
Evaluation	The teacher asks the students to explain the format for bank reconciliation when: (a) The cashbook does not need to be amended. (b) The cashbook needs to be adjusted first. (c) There is an overdraft	The students respond by answering the teacher's question and illustrating the different formats for reconciliation.	Applauding students who get the answer correctly.
Conclusion	The teacher concludes by reminding the students the necessity for a bank reconciliation and the various formats for preparing a bank reconciliation statement.	The students listen carefully and ask questions.	Summarizing.
Home Activity	The teacher gives the students a home activity to do: The cashbook of B. Soye at 31st March, 2005 showed a debit balance of N10,480 whereas the bank statement at the same date showed N16,666. On comparing the cashbook with the bank statement, the following differences were obtained: a) A cheque paid to a creditor for N1948 was entered on the cashbook as N1588. b) Dividends from investments received by the bank but not entered in the cashbook amounted to N500. c) Bank charges not entered in the cashbook of N194. d) A standing order for a trade subscription was not entered in the cashbook for N36 e) Unpresented cheques amounted to N6936 f) Bank deposits not credited by the bank amounted to N548. g) Cheque returedd by the bank marked		

	"refer to drawer" not adjusted in the cashbook amounted to N112. Required: Prepare a bank reconciliation statement: i. By first adjusting the cashbook; ii. Without making amendments to the cashbook.		

Experimental Group (Week 4)

Class: Accountancy option

Duration: 2 Hours

Course: ACC 112 – Introduction to Financial Accounting 2

Topic: Bank Reconciliation Statement Formats

Sex: Male and Female

Age: 16years and above

Learning Objectives: By the end of the lesson, students should be able to

a) Describe the different bank reconciliation statement formats.
b) Prepare bank reconciliation statement without amending the cashbook.
c) Prepare bank reconciliation statement by first amending the cashbook
d) Prepare bank reconciliation when there is an overdraft

Instructional Techniques: Explanation, illustration, questioning, one-on-one attention and feedback.

Instructional Materials: The teacher, students, Learning Management System, white board and marker.

Entry Behaviour: Students already know why bank reconciliations are necessary and the various causes of discrepancy between the bank account and the cash book.

Set Induction: The teacher asks the students about the video they watched on the LMS last week

Instructional Procedure

CONTENT DEVELOPMENT	TEACHER'S ACTIVITIES	STUDENTS ACTIVITIES	INSTRUCTIONAL STRATEGIES
Bank Reconciliation Statement Formats	The teacher asks the students to explain the lesson content that was given to them on the LMS	The students explain, in their own understanding, the lesson materials explaining the different ways of preparing the bank reconciliation statement.	Questioning and feedback gathering. The teacher validates and corrects the students' explanation of the lesson materials uploaded on the LMS.

Class Activity	The teacher gives the students a class activity to do: The cashbook of B. Soye at 31st March, 2005 showed a debit balance of N10,480 whereas the bank statement at the same date showed N16,666. On comparing the cashbook with the bank statement, the following differences were obtained: (a) A cheque paid to a creditor for N1948 was entered on the cashbook as N1588. (b) Dividends from investments received by the bank but not entered in the cashbook amounted to N500. (c) Bank charges not entered in the cashbook of N194. (d) A standing order for a trade subscription was not entered in the cashbook for N36 (e) Unpresented cheques amounted to N6936 (f) Bank deposits not credited by the bank amounted to N548. (g) Cheque returedd by the bank marked "refer to drawer" not adjusted in the cashbook amounted to N112. (h) Required: (i) Prepare a bank reconciliation statement: (j) By first adjusting the cashbook; (k) Without making amendments to the cashbook.	The students attempt the class work by themselves.	Class activity.
One-one-One Attention	The teacher goes from desk to desk to see each students' work and listen to the students questions. The teacher answers the students' questions.	Students interact with the teacher showing him areas that they do not understand.	Questioning and feedback getting.
Evaluation	The teacher asks the students to explain the format for bank reconciliation when: (a) The cashbook does not need to be amended. (b) The cashbook needs to be adjusted first. (c) There is an overdraft	The students respond by answering the teacher's question and illustrating the different formats for reconciliation.	Applauding students who get the answer correctly.
Conclusion	The teacher concludes by reminding the students the necessity for a bank reconciliation and the various formats for preparing a bank reconciliation statement.	The students listen carefully and ask questions.	The teacher encourages the students to access the learning resources provided on the LMS for next week's class.

Control Group (Week 5)

Class: Accountancy Department

Duration: 2 Hours

Course: ACC 121 – Introduction to Financial Accounting 2

Topic: Control Accounts

Sex: Male and Female

Age: 16years and above

General Objectives: By the end of the lesson, students should be able to understand the need for control accounts.

Learning Objectives: By the end of the lesson, students should be able to

a) Explain why control accounts are necessary
b) Outline the benefits of operating control accounts
c) Construct sales ledger control account

Instructional Techniques: Listening and note taking, use of examples, and examples.

Instructional Materials: The teacher, students, recommended text book, white board and marker.

Entry Behaviour: Students know how to prepare a trial balance from the ledger accounts.

Set Induction: Students are asked to explain what could happen if the two sides of the trial balance do not agree

Instructional Procedure

CONTENT DEVELOPMENT	TEACHER'S ACTIVITIES	STUDENTS ACTIVITIES	INSTRUCTIONAL STRATEGIES
Introduction	The teacher begins by asking the student what could happen if the two sides (debit and credit sides) of the trial balance do not agree. The teacher introduces the topic by reminding the students about the maintenance of ledger accounts. The teacher also explains that in small businesses where the number of transactions are not too many, the ledger accounts will accordingly be fewer in number. In such situations, errors made in the process of taking out a trial balance may	The students answer the teacher's question, listen carefully, and take notes.	Set induction

	be easily detected and rectified. However, in a large business organization with numerous transactions, the bulk of which usually affects the sales and purchases ledger, the process of taking a trial balance can become protracted. With a large number of accounts in these ledgers, there is also a greater statistical possibility of errors occurring within one of the individual debtors' or creditors' accounts. Tracing such errors which disturb the agreement of the trial balance is often very difficult, time consuming and consequently hinder the construction of the final accounts.		
The Need for Control Accounts	The teacher explains that to overcome the difficulty of tracing errors, a system is often employed whereby the debtors' ledger is agreed or balanced separately, and similarly the creditors' ledger. In this way an error will be isolated rather than allowing it appear as an unidentifiable error on the full trial balance. A control account (sometimes called **total account**) is an account in the summarized form of all the detailed entries in the individual accounts in each ledger. Where the balance on the control account fails to agree with the sum of the individual balances in the given ledger, it means an error(s) had occurred in the particular ledger. The error(s) can then be traced and rectified. The control account thus functions as a trial balance to a particular ledger as it is a means of checking the accuracy of the entries in that ledger.	The students listen carefully and take notes.	Explanation
Benefits of operating Control Accounts	The teacher outlines the benefits of operating control accounts to include: 1. Control accounts assist in the localization of errors. 2. It can serve as a check against fraud and errors on the bookkeepers who maintain the subsidiary ledgers. 3. It provides a fast means of ascertaining the up-to-date amounts of debtors and creditors (shown as balances on the sales ledger control and purchases ledger control accounts respectively) for management purposes. 4. It enables a trial balance to be compiled and draft annual or periodical accounts to be prepared	The students listen carefully, take down notes and ask questions.	Explanation

<table>
<tr>
<td></td>
<td>even before the individual personal ledgers are balanced.
The teacher points out that control or total accounts are mere memoranda accounts used as an aid to balancing and as a toll of internal check on the ledgers.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Types of Control Accounts</td>
<td>The teacher describes the types of control accounts. The teacher explains that control accounts can be applied to all ledgers but two ledgers that are pronounced are:
a) Sales ledger control account
b) Purchases ledger control account.
The personal accounts of credit customers (debtors) are kept in the sales ledger and those of creditors are maintained in the purchases ledger.</td>
<td>The students listen carefully, take down notes and ask questions.</td>
<td>Explanation</td>
</tr>
<tr>
<td>Sales Ledger Control Account</td>
<td>The teacher explains that the entries that would normally be found on the Sales ledger control account are:
Debit side:
a) The opening balance (i.e. the sum of all opening balances in the sales ledger)
b) Total credit sales
c) Correction of errors
d) Dishonoured cheques from customers
e) Interest charges to customers
Credit Side:
a) Cash and cheques received from customers
b) Discounts allowed
c) Bad debts written off
d) Sales returns (return inwards)
e) Contra entries (set-off)
f) Correction of errors

The teacher explains the source of information required for the sales ledger control account.

<table>
<tr><th></th><th>Source</th></tr>
<tr><td>Debit side:</td><td></td></tr>
<tr><td>Total credit sales</td><td>Sales day book</td></tr>
<tr><td>Correction of errors</td><td>Journals</td></tr>
<tr><td>Dishonoured cheques from customers</td><td>Cashbook</td></tr>
<tr><td>Interest charged to customers</td><td>Journal</td></tr>
</table>
</td>
<td>The students listen carefully, take down notes and ask questions.</td>
<td>Explanation and illustration</td>
</tr>
</table>

	Credit Side:		
	Cash and cheques received from customers	cashbook	
	Discount allowed	Cashbook	
	Bad debts written off	Journal	
	Sales returns	Returns inward Journal	
	contra entries	Journal	
	Corretion of errors	Journal	

The teacher further explains that in practice, it is necessary to set up a system that can help in recording the transactions properly. The following will help:

i. The cashbook may be organized such that all receipts from credit customers are analysed and one analysis column reserved to record all receipts from debtors.
ii. The discounts given to customers are entered in the discount allowed column of the cashbook and credited to the individual customer's accounts.
iii. For total credit sales: sales invoices are entered in the sales day book.
iv. Credit notes are entered in the returns inwards journal
v. The contras are made individually. A list should be kept to obtain the total.

Contras	The teacher explains that **Contras** or **set-offs** occur when a credit customer (i.e.debtor) also sells on credit (i.e. as a supplier) to the firm. When a customer to a business is also a supplier to the same firm, instead of exchanging cheques, the two indebtedness could be set against each other so that only one cheque is sent. For example, assume that B. Kinako has supplied to a firm goods worth N55,000 and the firm has sold him N45,000 worth of goods. In the books of the firm the 45,000 owing by B. Kinako is set-off against the amount being owed to him thus leaving a net amount owing to him of N10,000. The transaction will appear in the customer's	The students listen carefully, take down notes and ask questions.	Illustration

	account and in the control account kept by the firm as follows: **SALES LEDGER** B. KINAKO ₦ ₦ Sales 45,000 **PURCHASES LEDGER** B. KINAKO ₦ ₦ Purchases 55,000 The set-off (in the control account) is as follows: **SALES LEDGER** B. KINAKO N N Contra: Sales 45,000 Purchases ledger 45,000 **PURCHASES LEDGER** B. KINAKO N N Contra: Sales Ledger 45,000 Purchases 55,000 Balance c/d 10,000 55,000 55,000 Balance b/d 10,000 The teacher points out that the set-off of the N45,000 owing by the customer would appear on the credit side of the sales ledger control account and on the debit side of the purchases ledger control account thus, the contras are made individually and from the list kept of all such contras, the total is taken to the control account.		
Evaluation	The teacher asks the students the following	The students	Questioning

	questions: a) What is a control account? b) What is the purpose of a control account? c) List the sources from which the sales ledger control account would be compiled d) What is the purpose of keeping a sales ledger? e) Explain the concept of "Contra".	respond by answering the questions posed by the teacher.	
Conclusion	The teacher concludes by reviewing the purpose of a control account.	Students listen and ask questions	Summary

Experimental Group (Week 5)

Class: Accountancy option

Duration: 2 Hours

Course: ACC 112 – Introduction to Financial Accounting 2

Topic: Control Accounts

Sex: Male and Female

Age: 16years and above

Learning Objectives: By the end of the lesson, students should be able to

a) Explain why control accounts are necessary
b) Outline the benefits of operating control accounts
c) Construct sales ledger control account

Instructional Techniques: Explanation, illustration, questioning, one-on-one attention and feedback.

Instructional Materials: The teacher, students, LMS, white board and marker.

Entry Behaviour: Students know how to prepare a trial balance from the ledger accounts.

Set Induction: Students are asked to explain what could happen if the two sides of the trial balance do not agree.

Instructional Procedure

CONTENT DEVELOPMENT	TEACHER'S ACTIVITIES	STUDENTS ACTIVITIES	INSTRUCTIONAL STRATEGIES
Introduction	The teacher begins by asking the student what could happen if the two sides (debit and credit sides) of the trial balance do not agree.	The students answer the teacher's question, listen carefully, and take notes.	Set induction
The Need for Control Accounts	The teacher asks the students to explain the need for control accounts based on the learning materials uploaded for the students on the LMS.	The students explain the need for control account based on the lesson materials that they read on the LMS.	Questioning
Benefits of operating Control Accounts	The teacher asks the students to outline the benefits of the control account.	The students answer the question by explaining the benefits of the control account.	Questioning and feedback getting.

<table>
<tr>
<td>Sales Ledger Control Account</td>
<td>The teacher asks the students to outline items that would be found on the debit and credit sides of the sales ledger control.

The teacher further explains that in practice, it is necessary to set up a system that can help in recording the transactions properly. The following will help:
vi. The cashbook may be organized such that all receipts from credit customers are analysed and one analysis column reserved to record all receipts from debtors.
vii. The discounts given to customers are entered in the discount allowed column of the cashbook and credited to the individual customer's accounts.
viii. For total credit sales: sales invoices are entered in the sales day book.
ix. Credit notes are entered in the returns inwards journal
x. The contras are made individually. A list should be kept to obtain the total.</td>
<td>The students attempt to answer the question based on the resources that were uploaded on the LMS</td>
<td>Questioning, Explanation and illustration. The teacher validates the answers of the students.</td>
</tr>
<tr>
<td>Contras</td>
<td>The teacher explains that Contras or set-offs occur when a credit customer (i.e.debtor) also sells on credit (i.e. as a supplier) to the firm. When a customer to a business is also a supplier to the same firm, instead of exchanging cheques, the two indebtedness could be set against each other so that only one cheque is sent.
For example, assume that B. Kinako has supplied to a firm goods worth N55,000 and the firm has sold him N45,000 worth of goods. In the books of the firm the 45,000 owing by B. Kinako is set-off against the amount being owed to him thus leaving a net amount owing to him of N10,000. The transaction will appear in the customer's account and in the control account kept by the firm as follows:

SALES LEDGER
B. KINAKO
<table><tr><td></td><td>₦</td><td></td><td>₦</td></tr><tr><td>Sales</td><td>45,000</td><td></td><td></td></tr></table></td>
<td>The students listen carefully, take down notes and ask questions.</td>
<td>Illustration</td>
</tr>
</table>

	PURCHASES LEDGER B. KINAKO ₦ | ₦ Purchases 55,000 The set-off (in the control account) is as follows: **SALES LEDGER** B. KINAKO N | N Contra: Sales 45,000 | Purchases ledger 45,000 **PURCHASES LEDGER** B. KINAKO N | N Contra: Sales Ledger 45,000 | Purchases 55,000 Balance c/d 10,000 55,000 | 55,000 Balance b/d 10,000 The teacher points out that the set-off of the N45,000 owing by the customer would appear on the credit side of the sales ledger control account and on the debit side of the purchases ledger control account thus, the contras are made individually and from the list kept of all such contras, the total is taken to the control account.		
Evaluation	The teacher asks the students the following questions: f) What is a control account? g) What is the purpose of a control account? h) List the sources from which the sales ledger control account would be compiled i) What is the purpose of keeping a sales ledger? j) Explain the concept of "Contra".	The students respond by answering the questions posed by the teacher.	Questioning
Conclusion	The teacher concludes by reviewing the	Students listen and	Summary

	purpose of a control account.	ask questions	

APPENDIX E – PRE-VALIDATED INSTRUMENT

FINANCIAL ACCOUNTING ACHIEVEMENT TEST (FAAT)

ACC 121 – Introduction to Financial Accounting 2 Time Allowed: 40 minutes

INSTRUCTION: Each question is followed by four options, letter **A** to **E** out of which only one option is the correct answer. Circle the correct answer for each question on the answer sheet provided.

1. If a Trial Balance balances when the Sales ledger Control account balance is included in it and does not when the sum of the list of customers' account balances is included, it would be obvious that the error is in:
   a) The individual customer's accounts in the sales ledger
   b) Either the sales ledger control account or the individual accounts of the Sales ledger
   c) Neither the sales ledger control account nor the individual customers' accounts
   d) The Sales ledger control account
   e) None of the above

2. Cheques received by the business and debited to the cashbook whose value is not reflecting on the bank statement are called
   (a) Uncredited cheques (b) Unpresented cheques (c) Discounted cheques (d) Dishonoured cheques (e) Bounced cheques

3. The first stage in the preparation of a manufacturing account is to
   (a) Calculate the total cost of goods manufactured
   (b) Calculate the cost of raw materials used
   (c) Calculate the factory overheads
   (d) Calculate the cost of goods sold
   (e) Calculate the wages of factory workers

4. In a Paint production factory, which of the following is a direct labour cost?
   (a) Managing Director's salary (b) Machine operator's wage
   (c) Accounting officer's salary (d) Store Keeper's salary (e) Factory supervisor's salary

5. If the bank reconciliation statement is started with the balance as per bank statement, which of the following will be done?
   (a) Less Uncredited cheques
   (b) Add Unpresented cheques
   (c) Less direct payments by the bank on behalf of customer
   (d) Less direct payment into the ban
   (e) None of the above

6. Cheques that have been written in favour of people who for one reason or the other have not withdrawn them are called___
   (a) Withheld cheques (b) Unpresented cheques (c) Uncredited Cheques (d) Unwithdrawn cheques
   (e) Cheques with "Drawer's Attention Required"

7. The periodic document that shows the transactions between the bank and the customer is known as…..
   (a) Bank alert (b) Bank Reconciliation Statement (c) Bank letter (d) Bank Circular
   (e) Bank Statement

8. If the bank reconciliation statement is started with the balance as per cashbook, which of the following will be done?
   (a) Add uncredited cheques
   (b) Less Unpresented cheques
   (c) Add direct payments by the bank on behalf of customer
   (d) Add direct payments into the bank
   (e) None of the above

9. The cost of items which can be conveniently identified with the finished product is called
   (a) Direct cost (b) Direct expenses (c) Direct labour (d) Direct Materials
   (e) Product cost

10. Cheque issued but not presented for payment are :
   (a) Recorded in Cash Book (b) Recorded in Bank Statement (c) Recorded as debit note
   (d) Not recorded (e) None of the above

11. What is the purpose of preparing a manufacturing account?
   (a) To determine the cost of direct materials consumed
   (b) To ascertain the cost of direct labour
   (c) To determine the cost of goods manufactured
   (d) To determine the net profit/loss
   (e) To determine the gross profit/loss on trading

12. Which of the following will not appear in the Sales ledger control account:

   (a) Amounts received from credit customer (b) credit sales (c) cash sales (d) Bad debts written off
   (e) Returns inwards

13. When carrying out a bank reconciliation, the items on the debit side of the cashbook are checked against the items on the…….

   (a) Credit side of the cashbook (b) Debit side of the bank statement (c) Credit side of the bank statement (d) Debit side of the trial balance (e) credit side of the bank reconciliation statement

14. Stock of goods already manufactured but have not been sold at the end of the period is called…

   (a) Work-in-Progress (b) Stock of work-in-progress (c) Stock of finished goods
   (d) Cost of goods manufactured (e) Stock of materials in the store.

15. When the balance as per bank statement is the starting point in the preparation of bank reconciliation statement, unpresented cheques are :
   (a) Added (b) Deducted (c) Added twice (d) Deducted twice (e) None

16. An example of factor that can cause timing difference between the bank statement and the cashbook is
   (a) Unpresented Cheques (b) Dishonoured cheques (c) bank charges
   (d) Direct payment into or from the bank (e) None of the above

17. If the prime cost is N60,000; Direct labour is N20,000; direct cost is N10,000; direct expenses is N30,000 and factory overhead is N20,000, what is the production cost?
   a) N120,000 (b) N60,000 c) N80,000 d) N50,000 e) N70,000

18. A account that checks the arithmetic accuracy of a ledger is called ….
   (a) Checking Account (b) Journal (c) Final Accounts (d) Double-entry principle (e) Control account

19. _____ occurs when a credit customer (debtor) also sells on credit to the same firm (becomes a creditor).
a) Control (b) Adjustment (c) Journal correction (d) Reconciliation (e) Contra

20. A deficit in a bank account caused by drawing more than money than the account holds is called____
a) Bank overdraft (b) Bank deposit (c) Bank credit (d) Bank withdrawals (e) Bank drawings

21. Which of the following bank charges would appear in the cashbook before reconciliation is done
(a) Maintenance charge (b) Commission on Turnover (c) SMS alert charge
(d) Cheque book charge (e) None of the above

22. Non-manufacturing costs incurred in order to induce customers to place orders and in getting the finished products from the factory to the customer are called…..
(a) Administrative overheads (b) Advertisement and publicity ventures
(c) Selling and Distribution overheads (d) Factory overheads (e) Total cost

23. The direct material cost of producing an equipment is twice the direct expense cost. If the prime cost is N500,000 and the direct labour cost is N200,000, what is the direct material cost?
a) N300,000 (b) N250,000 (c) N200,000 (d) N150,000 (e) N100,000

24. The information for preparing a control account is obtained from
(a) The books of original entry (b) The cash book (c) The ledger (d) The general journal
(e) None of the above

25. A bank reconciliation statement is a…..
(a) A document that shows the transactions between the bank and the customers
(b) A document that shows the grievances of the customer on the inaccuracies of the bank statement
(c) A document that is prepared to agree the balances of the bank statement and the cashbook.
(d) A letter to the bank, asking them to reverse certain transactions that were erroneously done.
(e) A letter to the bank emphasizing the need to proper record keeping.

26. Hire of special purpose equipment for a particular manufacturing job is an example of
(a) Direct expense (b) Direct Hire (c) Direct Materials (d) Direct Machinery
(e) Factory overhead costs

27. Cost of goods manufactured is transferred to the trading account to take the place of …
(a) Purchases (b) cost of goods sold (c) Sales (d) Cost of goods available for sale
(e) Gross profit

28. Prime cost is a combination of
a) Direct labour, indirect wages and direct materials
b) Direct materials, direct labour and indirect expenses
c) Indirect materials, indirect labour and indirect expenses
d) Direct materials, direct labour and direct expenses
e) Indirect materials, indirect labour and direct expenses

29. All of these can be found on the credit side of a sales ledger control account, except
(a) Discount allowed (b) Cash and cheques received from customers (c) bad debts written off
(d) Sales returns (e) credit sales

30. Total cost is the combination of
a) Gross profit plus all administrative cost
b) Prime cost plus factory cost plus revenue
c) Production cost plus prime cost plus factory overheads
d) Production cost plus selling, distribution and administration cost

e) None of the above

31. Where the market value of goods produced exceeds the factory cost, there is a _____
    a) Gross profit on Sales
    b) Gross profit on manufacture
    c) Gross loss on sales
    d) Gross loss on manufacture
    e) Gross profit on trading

32. One of the following is NOT a source of information for the sales ledger control account.
    a) Trading account (b) Sales daybook (c) Journals (d) cashbook (e) Returns inward journal

33. Difference in bank balance as per bank statement and cash book may arise on account of :
    (a) Cheque issued but not presented (b) Cheque issued but dishonoured (c) Direct payments by customers in bank (d) All of the above (e) None of the above

34. On the 31st December, 2016, the balance on the cashbook was N55,000. If unpresented cheques amounted to N13,000 and uncredited cheques amount N12,000, what was the balance on the bank statement as at the same date?
    (a) N68,000 (b) N56,000 (c) N67,000 (d) N80,000 (e) N30,000

35. What is the treatment for stock of Work-In-Progress

    a) Accounted for in the manufacturing account by netting off opening stock of W-I-P from closing stock of W-I-P
    b) Accounted for in the trading account by netting of opening stock of W-I-P from closing stock of W-I-P
    c) Accounted for in the profit and loss account by netting of opening stock of W-I-P from closing stock of W-I-P
    d) Added to the purchases of finished goods to get the cost of goods available for sales
    e) Deducted from the production cost in the manufacturing account.

36. All of these can be found on the debit side of a sales ledger control account, except:
    (a) The opening balance (b) total credit sales (c) Bad debts written off
    (d) Interest charges to customers (e) Dishonoured cheques from customers.

37. Bank reconciliation statement is prepared with the balance of:
    (a) Bank statement (b) Cashbook (c) Both (a) or (b) (d) None of the above (e) Trial balance

38. The account that serves as a check against fraud and errors on the bookkeepers who maintain the subsidiary ledgers is called___
    (a) Control account (b) Trial balance (c) Bank reconciliation statement (d) Double entry principle
    (d) Contract account.

39. The periodical totals of the Returns Inwards Day book are:
    (a) Credited to the Sales ledger control account
    (b) Debited to the Purchases ledger control account
    (c) Credited to the Purchases ledger control account
    (d) Debited to the Sales ledger control account
    (e) None of the above

40. Bank reconciliation statement is prepared by :
    (a) The Commercial Bank (b) Businessman (c) Tax Officers (d) Supplier
    +(e) None of the above

APPENDIX F – POST VALIDATED INSTRUMENT

FINANCIAL ACCOUNTING ACHIEVEMENT TEST (FAAT)

ACC 121 – Introduction to Financial Accounting 2 Time Allowed: 40 minutes

INSTRUCTION: Each question is followed by four options, letter **A** to **E** out of which only one option is the correct answer. Circle the correct answer for each question on the answer sheet provided.

1. When there is an error in the sales ledger control account, which one of these will happen:
   a) The trial balance figures will balance
   b) The trial balance figures will not balance
   c) The individual customers' account will be debited
   d) The individual customers' account will be credited
   e) The cashbook will have a credit balance

2. Cheques received by the business and debited to the cashbook whose value is not reflecting on the bank statement are called
   (a) Uncredited cheques
   (b) Unpresented cheques
   (c) Discounted cheques
   (d) Dishonoured cheques
   (e) Bounced cheques

3. The first stage in the preparation of a manufacturing account is to
   (a) Calculate the total cost of goods manufactured
   (b) Calculate the cost of raw materials used
   (c) Calculate the factory overheads
   (d) Calculate the cost of goods sold
   (e) Calculate the wages of factory workers

4. In a Paint production factory, which of the following is a direct labour cost?
   (a) Managing Director's salary
   (b) Machine operator's wage
   (c) Accounting officer's salary
   (d) Store Keeper's salary
   (e) Factory supervisor's salary

5. If the bank reconciliation statement is started with the balance as per bank statement, how is direct receipt into the bank treated?
   (a) Add direct receipts to balance as per bank statement
   (b) Ignore direct receipts into the bank
   (c) Less direct payments by the bank on behalf of customer from the balance as per bank statement
   (d) Less direct receipts from the balance as per bank statement
   (e) None of the above

6. Cheques that have been written in favour of people who for one reason or the other have not withdrawn them are called___
   (a) Withheld cheques
   (b) Unpresented cheques
   (c) Uncredited Cheques
   (d) Unwithdrawn cheques
   (e) Cheques with "Drawer's Attention Required"

7. The periodic document that shows the transactions between the bank and the customer is known as…..
   (a) Bank alert
   (b) Bank Reconciliation Statement
   (c) Bank letter
   (d) Bank Circular
   (e) Bank Statement

8. If the bank reconciliation statement is started with the balance as per cashbook, how are unpresented cheques treated?
   (a) Ask the customers to return back the unpresented cheques
   (b) Less Unpresented cheques
   (c) Ignore unpresented cheques
   (d) Add unpresented cheques
   (e) None of the above

9. The cost of items which can be conveniently identified with the finished product is called
   (a) Selling and Distribution cost
   (b) Direct expenses
   (c) Direct labour cost
   (d) Direct Materials cost
   (e) Product cost

10. Cheques issued but not presented for payment are called:
    (a) Unpresented Cheques
    (b) Unpaid Cheques
    (c) Uncredited Cheques
    (d) Unrecorded Cheques
    (e) Unknown Cheques

11. What is the purpose of preparing a manufacturing account?

(a) To determine the cost of direct materials consumed
(b) To ascertain the cost of direct labour
(c) To determine the cost of goods manufactured
(d) To determine the net profit/loss
(e) To determine the gross profit/loss on trading

12. Which of the following will not appear in the Sales ledger control account:
(a) Amounts received from debtors
(b) Credit sales
(c) Cash sales
(d) Bad debts written off
(e) Returns inwards

13. When carrying out a bank reconciliation, the items on the debit side of the cashbook are checked against the items on the…….
(a) Credit side of the cashbook
(b) Debit side of the bank statement
(c) Credit side of the bank statement
(d) Debit side of the trial balance
(e) Credit side of the bank reconciliation statement

14. Stock of goods already manufactured but have not been sold at the end of the period is called…
(a) Work-in-Progress
(b) Stock of work-in-progress
(c) Stock of finished goods
(d) Cost of goods manufactured
(e) Stock of materials in the store.

15. When the balance as per bank statement is the starting point in the preparation of bank reconciliation statement, unpresented cheques are :
(a) Added
(b) Deducted
(c) Added twice
(d) Deducted twice
(e) None

16. _____ is an example of factors that can cause timing difference between the bank statement and the cashbook.
(a) Unpresented Cheques
(b) Dishonoured cheques
(c) Bank charges
(d) SMS alert charges
(e) None of the above

17. If the prime cost is N60,000; Direct labour is N20,000; direct material cost is N10,000; direct expenses is N30,000 and factory overhead is N20,000, what is the production cost?
(a) N120,000
(b) N60,000
(c) N80,000
(d) N50,000
(e) N70,000

18. An account that checks the arithmetic accuracy of a ledger is called ….
(a) Checking Account
(b) Journal
(c) Final Accounts
(d) Double-entry principle
(e) Control account

19. _____ occurs when a credit customer (debtor) also sells on credit to the same firm (becomes a creditor).
(a) Control
(b) Adjustment
(c) Journal correction
(d) Reconciliation
(e) Contra

20. A deficit in a bank account caused by drawing more money than the account holds is called____
(a) Bank overdraft
(b) Bank deposit
(c) Bank credit
(d) Bank withdrawals
(e) Bank drawings

21. Which of the following bank charges would appear in the cashbook before reconciliation is done
(a) Maintenance charge
(b) Commission on Turnover
(c) SMS alert charge
(d) Cheque book charge
(e) None of the above

22. Non-manufacturing costs incurred in order to induce customers to place orders and in getting the finished products from the factory to the customer are called…..
(a) Administrative overheads
(b) Advertisement and publicity ventures
(c) Selling and Distribution overheads
(d) Factory overheads
(e) Total cost

23. The direct material cost of producing an equipment is equal to the direct expense cost. If the prime cost is N500,000 and

the direct labour cost is N200,000, what is the direct material cost?

a) N300,000
b) N250,000
c) N150,000
d) N200,000
e) N100,000

24. The information for preparing a control account is obtained from
    (a) The books of original entry
    (b) The cash book
    (c) The final accounts
    (d) The general journal
    (e) None of the above

25. A bank reconciliation statement is …..
    (a) A document that shows the transactions between the bank and the customers
    (b) A document that shows the grievances of the customer on the inaccuracies of the bank statement
    (c) A document that is prepared to agree the balances of the bank statement and the cashbook.
    (d) A letter to the bank, asking them to reverse certain transactions that were erroneously done.
    (e) A letter to the bank emphasizing the need to proper record keeping.

26. Hire of special purpose equipment for a particular manufacturing job is an example of
    (a) Direct Expense
    (b) Indirect Expense
    (c) Direct Materials
    (d) Direct Machinery
    (e) Indirect Materials

27. Cost of goods manufactured is transferred to the ……. Account.
    (a) Trading Account
    (b) Income Statement
    (c) Manufacturing Account
    (d) Statement of financial position
    (e) Partnership Account

28. Prime cost is a combination of
    (a) Direct labour, indirect wages and direct materials
    (b) Direct materials, direct labour and indirect expenses
    (c) Indirect materials, indirect labour and indirect expenses
    (d) Direct materials, direct labour and direct expenses
    (e) Indirect materials, indirect labour and direct expenses

29. All of these can be found on the credit side of a sales ledger control account, except
    (a) Cheques received from customers
    (b) Cash received from customers
    (c) Bad debts written off
    (d) Discount allowed
    (e) Credit sales

30. Total cost is the combination of
    (a) Gross profit plus net profit
    (b) Prime cost plus factory cost plus revenue
    (c) Production cost plus prime cost less revenue
    (d) Production cost plus selling, distribution and administration cost
    (e) None of the above

31. Where the market value of goods produced exceeds the factory cost, there is a _____
    (a) Gross profit on Sales
    (b) Gross profit on manufacture
    (c) Gross loss on sales
    (d) Gross loss on manufacture
    (e) Gross profit on trading

32. One of the following is a source of information for the sales ledger control account.
    (a) Balance sheet
    (b) Cashbook
    (c) Final accounts
    (d) Sales daybook
    (e) Partnership account

33. Which of these may bring discrepancies between the cashbook balance and the bank statement balance?
    (a) Unpresented cheques
    (b) Dishonoured Cheques
    (c) Uncredited Cheques
    (d) Direct receipts into the bank
    (e) All of the above

34. On the 31st December, 2016, the balance on the cashbook was N55,000. If unpresented cheques amounted to N13,000 and uncredited cheques amount N12,000, what was the balance on the bank statement as at the same date?
    (a) N68,000
    (b) N56,000
    (c) N67,000
    (d) N80,000
    (e) N30,000

35. What is the treatment for stock of Work-In-Progress

(a) Accounted for in the manufacturing account by netting off opening stock of W-I-P from closing stock of W-I-P
(b) Accounted for in the trading account by netting of opening stock of W-I-P from closing stock of W-I-P
(c) Accounted for in the profit and loss account by netting of opening stock of W-I-P from closing stock of W-I-P
d) Added to the purchases of finished goods to get the cost of goods available for sales
e) Deducted from the production cost in the manufacturing account.

36. All of these can be found on the debit side of a sales ledger control account, except:
(a) Balance brought forward
(b) Total credit sales
(c) Bad debts written off
(d) Interest charges to customers
(e) Dishonoured cheques from customers.

37. Bank reconciliation statement is prepared with the balance of:
(a) Bank statement
(b) Cashbook
(c) Both (a) and (b)
(d) None of the above
(e) Trial balance

38. The account that serves as a check against fraud and errors on the bookkeepers who maintain the subsidiary ledgers is called___
(a) Control account
(b) Trial balance
(c) Bank reconciliation statement
(d) Double entry principle
(d) Contract account.

39. The periodical totals of the Returns Inwards Day book are:
(a) Credited to the Sales ledger control account
(b) Debited to the Purchases ledger control account
(c) Credited to the Purchases ledger control account
(d) Debited to the Sales ledger control account
(e) None of the above

40. Bank reconciliation statement is prepared by :
(a) The Commercial Bank
(b) Businessman
(c) Tax Officers
(d) Supplier
(e) None of the above

APPENDIX G– PRE-TEST MARKING GUIDE

FINANCIAL ACCOUNTING ACHIEVEMENT TEST (FAAT)

ACC 121 – INTRODUCTION TO FINANCIAL ACCOUNTING 2

1	**B**	11	**C**	21	**E**	31	**B**
2	**A**	12	**C**	22	**C**	32	**D**
3	**B**	13	**C**	23	**C**	33	**E**
4	**B**	14	**C**	24	**A**	34	**B**
5	**D**	15	**B**	25	**C**	35	**A**
6	**B**	16	**A**	26	**A**	36	**C**
7	**E**	17	**C**	27	**A**	37	**C**
8	**D**	18	**E**	28	**D**	38	**A**
9	**D**	19	**E**	29	**E**	39	**A**
10	**A**	20	**A**	30	**D**	40	**B**

Each correct answer attracts 2.5 marks. 40 *2.5 = 100 marks

FINANCIAL ACCOUNTING ACHIEVEMENT TEST

ANSWER BOOKLET (PRE-TEST)

MATRIC NO: …….. **Department: …….....**

SEX: MALE ☐ **FEMALE** ☐

ACC 121 – Introduction to Financial Accounting 2 Time Allowed: 40 minutes

INSTRUCTION: Circle only one letter from letters A –E in the table below to represent your answer.

1.	**[A]**	**[B]**	**[C]**	**[D]**	**[E]**	**21.**	**[A]**	**[B]**	**[C]**	**[D]**	**[E]**
2.	**[A]**	**[B]**	**[C]**	**[D]**	**[E]**	**22.**	**[A]**	**[B]**	**[C]**	**[D]**	**[E]**
3.	**[A]**	**[B]**	**[C]**	**[D]**	**[E]**	**23.**	**[A]**	**[B]**	**[C]**	**[D]**	**[E]**
4.	**[A]**	**[B]**	**[C]**	**[D]**	**[E]**	**24.**	**[A]**	**[B]**	**[C]**	**[D]**	**[E]**
5.	**[A]**	**[B]**	**[C]**	**[D]**	**[E]**	**25.**	**[A]**	**[B]**	**[C]**	**[D]**	**[E]**
6.	**[A]**	**[B]**	**[C]**	**[D]**	**[E]**	**26.**	**[A]**	**[B]**	**[C]**	**[D]**	**[E]**
7.	**[A]**	**[B]**	**[C]**	**[D]**	**[E]**	**27.**	**[A]**	**[B]**	**[C]**	**[D]**	**[E]**
8.	**[A]**	**[B]**	**[C]**	**[D]**	**[E]**	**28.**	**[A]**	**[B]**	**[C]**	**[D]**	**[E]**
9.	**[A]**	**[B]**	**[C]**	**[D]**	**[E]**	**29.**	**[A]**	**[B]**	**[C]**	**[D]**	**[E]**
10.	**[A]**	**[B]**	**[C]**	**[D]**	**[E]**	**30.**	**[A]**	**[B]**	**[C]**	**[D]**	**[E]**
11.	**[A]**	**[B]**	**[C]**	**[D]**	**[E]**	**31.**	**[A]**	**[B]**	**[C]**	**[D]**	**[E]**
12.	**[A]**	**[B]**	**[C]**	**[D]**	**[E]**	**32.**	**[A]**	**[B]**	**[C]**	**[D]**	**[E]**
13.	**[A]**	**[B]**	**[C]**	**[D]**	**[E]**	**33.**	**[A]**	**[B]**	**[C]**	**[D]**	**[E]**
14.	**[A]**	**[B]**	**[C]**	**[D]**	**[E]**	**34.**	**[A]**	**[B]**	**[C]**	**[D]**	**[E]**
15.	**[A]**	**[B]**	**[C]**	**[D]**	**[E]**	**35.**	**[A]**	**[B]**	**[C]**	**[D]**	**[E]**
16.	**[A]**	**[B]**	**[C]**	**[D]**	**[E]**	**36.**	**[A]**	**[B]**	**[C]**	**[D]**	**[E]**
17.	**[A]**	**[B]**	**[C]**	**[D]**	**[E]**	**37.**	**[A]**	**[B]**	**[C]**	**[D]**	**[E]**
18.	**[A]**	**[B]**	**[C]**	**[D]**	**[E]**	**38.**	**[A]**	**[B]**	**[C]**	**[D]**	**[E]**
19.	**[A]**	**[B]**	**[C]**	**[D]**	**[E]**	**39.**	**[A]**	**[B]**	**[C]**	**[D]**	**[E]**
20.	**[A]**	**[B]**	**[C]**	**[D]**	**[E]**	**40.**	**[A]**	**[B]**	**[C]**	**[D]**	**[E]**

APPENDIX H – POST-TEST

FINANCIAL ACCOUNTING ACHIEVEMENT TEST (FAAT)

ACC 121 – Introduction to Financial Accounting II Time Allowed: 40 minutes

INSTRUCTION: Each question is followed by four options, letter **A** to **E** out of which only one option is the correct answer. Circle the correct answer for each question on the answer sheet provided.

1. An account that checks the arithmetic accuracy of a ledger is called ….
   (a) Checking Account
   (b) Journal
   (c) Final Accounts
   (d) Double-entry principle
   (e) Control account

2. What is the purpose of preparing a manufacturing account?
   (a) To determine the cost of direct materials consumed
   (b) To ascertain the cost of direct labour
   (c) To determine the cost of goods manufactured
   (d) To determine the net profit/loss
   (e) To determine the gross profit/loss on trading

3. Cheques that have been written in favour of people who for one reason or the other have not withdrawn them are called___
   (a) Withheld cheques
   (b) Unpresented cheques
   (c) Uncredited Cheques
   (d) Unwithdrawn cheques
   (e) Cheques with "Drawer's Attention Required"

4. Where the market value of goods produced exceeds the factory cost, there is a _____
   (a) Gross profit on Sales
   (b) Gross profit on manufacture
   (c) Gross loss on sales
   (d) Gross loss on manufacture
   (e) Gross profit on trading

5. One of the following is a source of information for the sales ledger control account.
   (a) Balance sheet
   (b) Cashbook
   (c) Final accounts
   (d) Sales daybook
   (e) Partnership account

6. The direct material cost of producing an equipment is equal to the direct expense cost. If the prime cost is N500,000 and the direct labour cost is N200,000, what is the direct material cost?
   (a) N300,000
   (b) N250,000
   (c) N150,000
   (d) N200,000
   (e) N100,000

7. A bank reconciliation statement is …..
   (a) A document that shows the transactions between the bank and the customers
   (b) A document that shows the grievances of the customer on the inaccuracies of the bank statement
   (c) A document that is prepared to agree the balances of the bank statement and the cashbook.
   (d) A letter to the bank, asking them to reverse certain transactions that were erroneously done.
   (e) A letter to the bank emphasizing the need to proper record keeping.

8. All of these can be found on the debit side of a sales ledger control account, except:
   (a) Balance brought forward
   (b) Total credit sales
   (c) Bad debts written off
   (d) Interest charges to customers
   (e) Dishonoured cheques from customers.

9. The first stage in the preparation of a manufacturing account is to
   (a) Calculate the total cost of goods manufactured
   (b) Calculate the cost of raw materials used
   (c) Calculate the factory overheads
   (d) Calculate the cost of goods sold
   (e) Calculate the wages of factory workers

10. What is the treatment for stock of Work-In-Progress
    (a) Accounted for in the manufacturing account by netting off opening stock of W-I-P from closing stock of W-I-P
    (b) Accounted for in the trading account by netting of opening stock of W-I-P from closing stock of W-I-P
    (c) Accounted for in the profit and loss account by netting of opening stock of W-I-P from closing stock of W-I-P
    d) Added to the purchases of finished goods to get the cost of goods available for sales
    e) Deducted from the production cost in the manufacturing account.

11. Cheques received by the business and debited to the cashbook whose value is not reflecting on the bank statement are called
    (a) Uncredited cheques
    (b) Unpresented cheques
    (c) Discounted cheques
    (d) Dishonoured cheques
    (e) Bounced cheques

12. When carrying out a bank reconciliation, the items on the debit side of the cashbook are checked against the items on the…….
    (a) Credit side of the cashbook
    (b) Debit side of the bank statement
    (c) Credit side of the bank statement
    (d) Debit side of the trial balance
    (e) Credit side of the bank reconciliation statement

13. Stock of goods already manufactured but have not been sold at the end of the period is called…
    (a) Work-in-Progress
    (b) Stock of work-in-progress
    (c) Stock of finished goods
    (d) Cost of goods manufactured
    (e) Stock of materials in the store.

14. In a Paint production factory, which of the following is a direct labour cost?
    (a) Managing Director's salary
    (b) Machine operator's wage
    (c) Accounting officer's salary
    (d) Store Keeper's salary
    (e) Factory supervisor's salary

15. _____ occurs when a credit customer (debtor) also sells on credit to the same firm (becomes a creditor).
    (a) Control
    (b) Adjustment
    (c) Journal correction
    (d) Reconciliation
    (e) Contra

16. If the bank reconciliation statement is started with the balance as per bank statement, how is direct receipt into the bank treated?
    (a) Add direct receipts to balance as per bank statement
    (b) Ignore direct receipts into the bank
    (c) Less direct payments by the bank on behalf of customer from the balance as per bank statement
    (d) Less direct receipts from the balance as per bank statement
    (e) None of the above

17. Non-manufacturing costs incurred in order to induce customers to place orders and in getting the finished products from the factory to the customer are called…..
    (a) Administrative overheads
    (b) Advertisement and publicity ventures
    (c) Selling and Distribution overheads
    (d) Factory overheads
    (e) Total cost

18. A deficit in a bank account caused by drawing more money than the account holds is called____
    (a) Bank overdraft
    (b) Bank deposit
    (c) Bank credit
    (d) Bank withdrawals
    (e) Bank drawings

19. On the 31st December, 2016, the balance on the cashbook was N55,000. If unpresented cheques amounted to N13,000 and uncredited cheques amount N12,000, what was the balance on the bank statement as at the same date?
    (a) N68,000
    (b) N56,000
    (c) N67,000
    (d) N80,000

(e) N30,000

20. Hire of special purpose equipment for a particular manufacturing job is an example of
    (a) Direct Expense
    (b) Indirect Expense
    (c) Direct Materials
    (d) Direct Machinery
    (e) Indirect Materials

21. All of these can be found on the credit side of a sales ledger control account, except
    (a) Cheques received from customers
    (b) Cash received from customers
    (c) Bad debts written off
    (d) Discount allowed
    (e) Credit sales

22. The cost of items which can be conveniently identified with the finished product is called
    (a) Selling and Distribution cost
    (b) Direct expenses
    (c) Direct labour cost
    (d) Direct Materials cost
    (e) Product cost

23. Which of the following bank charges would appear in the cashbook before reconciliation is done
    (a) Maintenance charge
    (b) Commission on Turnover
    (c) SMS alert charge
    (d) Cheque book charge
    (e) None of the above

24. Total cost is the combination of
    (a) Gross profit plus net profit
    (b) Prime cost plus factory cost plus revenue
    (c) Production cost plus prime cost less revenue
    (d) Production cost plus selling, distribution and administration cost
    (e) None of the above

25. _____ is an example of factors that can cause timing difference between the bank statement and the cashbook.
    (a) Unpresented Cheques
    (b) Dishonoured cheques
    (c) Bank charges
    (d) SMS alert charges
    (e) None of the above

26. If the bank reconciliation statement is started with the balance as per cashbook, how are unpresented cheques treated?
    (a) Ask the customers to return back the unpresented cheques
    (b) Less Unpresented cheques
    (c) Ignore unpresented cheques
    (d) Add unpresented cheques
    (e) None of the above

27. The account that serves as a check against fraud and errors on the bookkeepers who maintain the subsidiary ledgers is called___
    (a) Control account
    (b) Trial balance
    (c) Bank reconciliation statement
    (d) Double entry principle
    (e) Contract account.

28. Cost of goods manufactured is transferred to the ……. Account.
    (a) Trading Account
    (b) Income Statement
    (c) Manufacturing Account
    (d) Statement of financial position
    (e) Partnership Account

29. The periodic document that shows the transactions between the bank and the customer is known as…..
    (a) Bank alert
    (b) Bank Reconciliation Statement
    (c) Bank letter
    (d) Bank Circular
    (e) Bank Statement

30. If the prime cost is N60,000; Direct labour is N20,000; direct material cost is N10,000; direct expenses is N30,000 and factory overhead is N20,000, what is the production cost?
    (a) N120,000
    (b) N60,000
    (c) N80,000
    (d) N50,000

(e) N70,000

31. Prime cost is a combination of
    (a) Direct labour, indirect wages and direct materials
    (b) Direct materials, direct labour and indirect expenses
    (c) Indirect materials, indirect labour and indirect expenses
    (d) Direct materials, direct labour and direct expenses
    (e) Indirect materials, indirect labour and direct expenses

32. Bank reconciliation statement is prepared by :
    (a) The Commercial Bank
    (b) Businessman
    (c) Tax Officers
    (d) Supplier
    (e) None of the above

33. Cheques issued but not presented for payment are called:
    (a) Unpresented Cheques
    (b) Unpaid Cheques
    (c) Uncredited Cheques
    (d) Unrecorded Cheques
    (e) Unknown Cheques

34. Which of these may bring discrepancies between the cashbook balance and the bank statement balance?
    (a) Unpresented cheques
    (b) Dishonoured Cheques
    (c) Uncredited Cheques
    (d) Direct receipts into the bank
    (e) All of the above

35. When the balance as per bank statement is the starting point in the preparation of bank reconciliation statement, unpresented cheques are :
    (a) Added
    (b) Deducted
    (c) Added twice
    (d) Deducted twice
    (e) None

36. Bank reconciliation statement is prepared with the balance of:
    (a) Bank statement
    (b) Cashbook
    (c) Both (a) and (b)
    (d) None of the above
    (e) Trial balance

37. Which of the following will not appear in the Sales ledger control account:
    (a) Amounts received from debtors
    (b) Credit sales
    (c) Cash sales
    (d) Bad debts written off
    (e) Returns inwards

38. The periodical totals of the Returns Inwards Day book are:
    (a) Credited to the Sales ledger control account
    (b) Debited to the Purchases ledger control account
    (c) Credited to the Purchases ledger control account
    (d) Debited to the Sales ledger control account
    (e) None of the above

39. When there is an error in the sales ledger control account, which one of these will happen:
    a) The trial balance figures will balance
    b) The trial balance figures will not balance
    c) The individual customers' account will be debited
    d) The individual customers' account will be credited
    e) The cashbook will have a credit balance

40. The information for preparing a control account is obtained from
    (a) The books of original entry
    (b) The cash book
    (c) The final accounts
    (d) The general journal
    (e) None of the above

APPENDIX I – POST-TEST MARKING GUIDE

FINANCIAL ACCOUNTING ACHIEVEMENT TEST (FAAT)

ACC 121 – INTRODUCTION TO FINANCIAL ACCOUNTING 2

1	**E**	11	**A**	21	**E**	31	**D**
2	**C**	12	**C**	22	**D**	32	**B**
3	**B**	13	**C**	23	**E**	33	**A**
4	**B**	14	**B**	24	**D**	34	**D**
5	**D**	15	**E**	25	**A**	35	**B**
6	**C**	16	**D**	26	**D**	36	**C**
7	**C**	17	**C**	27	**A**	37	**C**
8	**C**	18	**C**	28	**A**	38	**A**
9	**B**	19	**B**	29	**E**	39	**B**
10	**A**	20	**A**	30	**C**	40	**A**

Each correct answer attracts 2.5 marks. 40 *2.5 = 100 marks

FINANCIAL ACCOUNTING ACHIEVEMENT TEST

ANSWER BOOKLET (POST-TEST)

MATRIC NO: …….. **Department: …….....**

SEX: MALE ☐ **FEMALE** ☐

ACC 121 – Introduction to Financial Accounting 2 Time Allowed: 40 minutes

INSTRUCTION: Circle only one letter from letters A –E in the table below to represent your answer.

1.	**[A]**	**[B]**	**[C]**	**[D]**	**[E]**	**21.**	**[A]**	**[B]**	**[C]**	**[D]**	**[E]**
2.	**[A]**	**[B]**	**[C]**	**[D]**	**[E]**	**22.**	**[A]**	**[B]**	**[C]**	**[D]**	**[E]**
3.	**[A]**	**[B]**	**[C]**	**[D]**	**[E]**	**23.**	**[A]**	**[B]**	**[C]**	**[D]**	**[E]**
4.	**[A]**	**[B]**	**[C]**	**[D]**	**[E]**	**24.**	**[A]**	**[B]**	**[C]**	**[D]**	**[E]**
5.	**[A]**	**[B]**	**[C]**	**[D]**	**[E]**	**25.**	**[A]**	**[B]**	**[C]**	**[D]**	**[E]**
6.	**[A]**	**[B]**	**[C]**	**[D]**	**[E]**	**26.**	**[A]**	**[B]**	**[C]**	**[D]**	**[E]**
7.	**[A]**	**[B]**	**[C]**	**[D]**	**[E]**	**27.**	**[A]**	**[B]**	**[C]**	**[D]**	**[E]**
8.	**[A]**	**[B]**	**[C]**	**[D]**	**[E]**	**28.**	**[A]**	**[B]**	**[C]**	**[D]**	**[E]**
9.	**[A]**	**[B]**	**[C]**	**[D]**	**[E]**	**29.**	**[A]**	**[B]**	**[C]**	**[D]**	**[E]**
10.	**[A]**	**[B]**	**[C]**	**[D]**	**[E]**	**30.**	**[A]**	**[B]**	**[C]**	**[D]**	**[E]**
11.	**[A]**	**[B]**	**[C]**	**[D]**	**[E]**	**31.**	**[A]**	**[B]**	**[C]**	**[D]**	**[E]**
12.	**[A]**	**[B]**	**[C]**	**[D]**	**[E]**	**32.**	**[A]**	**[B]**	**[C]**	**[D]**	**[E]**
13.	**[A]**	**[B]**	**[C]**	**[D]**	**[E]**	**33.**	**[A]**	**[B]**	**[C]**	**[D]**	**[E]**
14.	**[A]**	**[B]**	**[C]**	**[D]**	**[E]**	**34.**	**[A]**	**[B]**	**[C]**	**[D]**	**[E]**
15.	**[A]**	**[B]**	**[C]**	**[D]**	**[E]**	**35.**	**[A]**	**[B]**	**[C]**	**[D]**	**[E]**
16.	**[A]**	**[B]**	**[C]**	**[D]**	**[E]**	**36.**	**[A]**	**[B]**	**[C]**	**[D]**	**[E]**
17.	**[A]**	**[B]**	**[C]**	**[D]**	**[E]**	**37.**	**[A]**	**[B]**	**[C]**	**[D]**	**[E]**
18.	**[A]**	**[B]**	**[C]**	**[D]**	**[E]**	**38.**	**[A]**	**[B]**	**[C]**	**[D]**	**[E]**
19.	**[A]**	**[B]**	**[C]**	**[D]**	**[E]**	**39.**	**[A]**	**[B]**	**[C]**	**[D]**	**[E]**
20.	**[A]**	**[B]**	**[C]**	**[D]**	**[E]**	**40.**	**[A]**	**[B]**	**[C]**	**[D]**	**[E]**

APPENDIX J - Test Blue Print for Construction of BESFAAT

Domains / **Question**	**Knowledge**	**Comprehension**	**Application**	**Total**
Manufacturing Account	7	3	4	**14**
Bank Reconciliation Statement	7	6	3	**16**
Control Account	5	4	1	**10**
Total	19	13	8	40

APPENDIX K – VALIDATION OF INSTRUMENT

Department of Technology and
Vocational Education,
Business Education Programme,
Faculty of Education,
Nnamdi Azikiwe University, Awka,
Anambra State

5th March, 2018.

Dear Sir/Madam,

REQUEST FOR VALIDATION OF INSTRUMENT

I am a PhD student of the above-named institution currently carrying out a research titled "Effect of Blended Learning on Business Education Students' Academic Achievement in Financial Accounting in Rivers State". I write to request you to validate the instruments titled: Business Education Students' Financial Accounting Achievement Test (BESFAAT).

Kindly assist to examine the clarity of statement, correctness of language, conciseness, appropriateness, relevance, and adequacy of information and ideas in the contents. I attached herewith the title, scope and purpose of the study, research questions, hypotheses and the lesson plan used for designing the instrument.

Thank you.

Yours faithfully,

Bupo, Godwin Omoni

Ph.D 2014197004P

08068016983

Researcher

INSTRUMENT VALIDATION REPORT

Validation of instrument on the topic:

……
……..

…….....
.....

This is to certify that I ……validated the above mentioned instrument and made corrections/recommendations in the following areas:

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After the amendments, I considered the instruments fit/unfit for the study which it is designed for.

Signature:…….

Date:…….

APPENDIX L - PILOT STUDY TESTING THE FUNCTIONALITY OF THE MOODLE SITE

Introduction

To test the accessibility of the materials uploaded on the Moodle site used as the Learning Management System for the blended learning approach, a pilot study was conducted on business education students outside the study's population. The parts of the LMS that needed to be tested were:

1) Enrolment methods
2) Checking the videos
3) Accessing the reading materials
4) Attempting the test
5) Making comments on the discussion forum
6) Downloading the Mobile Moodle App

Statement of the Problem

Inability of students to access the Moodle site will hinder the workability of the site and hence the experiment will be fruitless. The enrolment procedure, accessing online content, assessing the online test should not be a challenge for the students in the experimental group. If students are not able to access the site either via a web browser or through their mobile devices, then the experiment will not be successful, hence the need for this pilot study.

Purpose of the Study

The purpose of this pilot study was to:

1) Find out if the enrolment method selected is functional.
2) Find out if students can access the online videos.
3) Find out if students can access the reading materials
4) Find out if students can access the online test.
5) Find out if students can make comments on the discussion forum
6) Find out if students can download the Mobile Moodle App

Methodology

The pilot study was conducted on 10 Post graduate students who are not part of the population for the main study. The emails of the students were collected, with their consent, and they were enrolled into the course by the researcher. The students were asked to access the reading materials, videos and the learning content for each of the lessons. The researcher used a checklist to collect data from the pilot study. The checklist was designed based on the elements of the Moodle site and the requirements of the pilot study. When a student accessed a function on the Moodle site, a good tick (✓) was written across the item on the checklist while a bad tick (×) was placed across the item. Frequency counts and percentages were used to analyze the data collected.

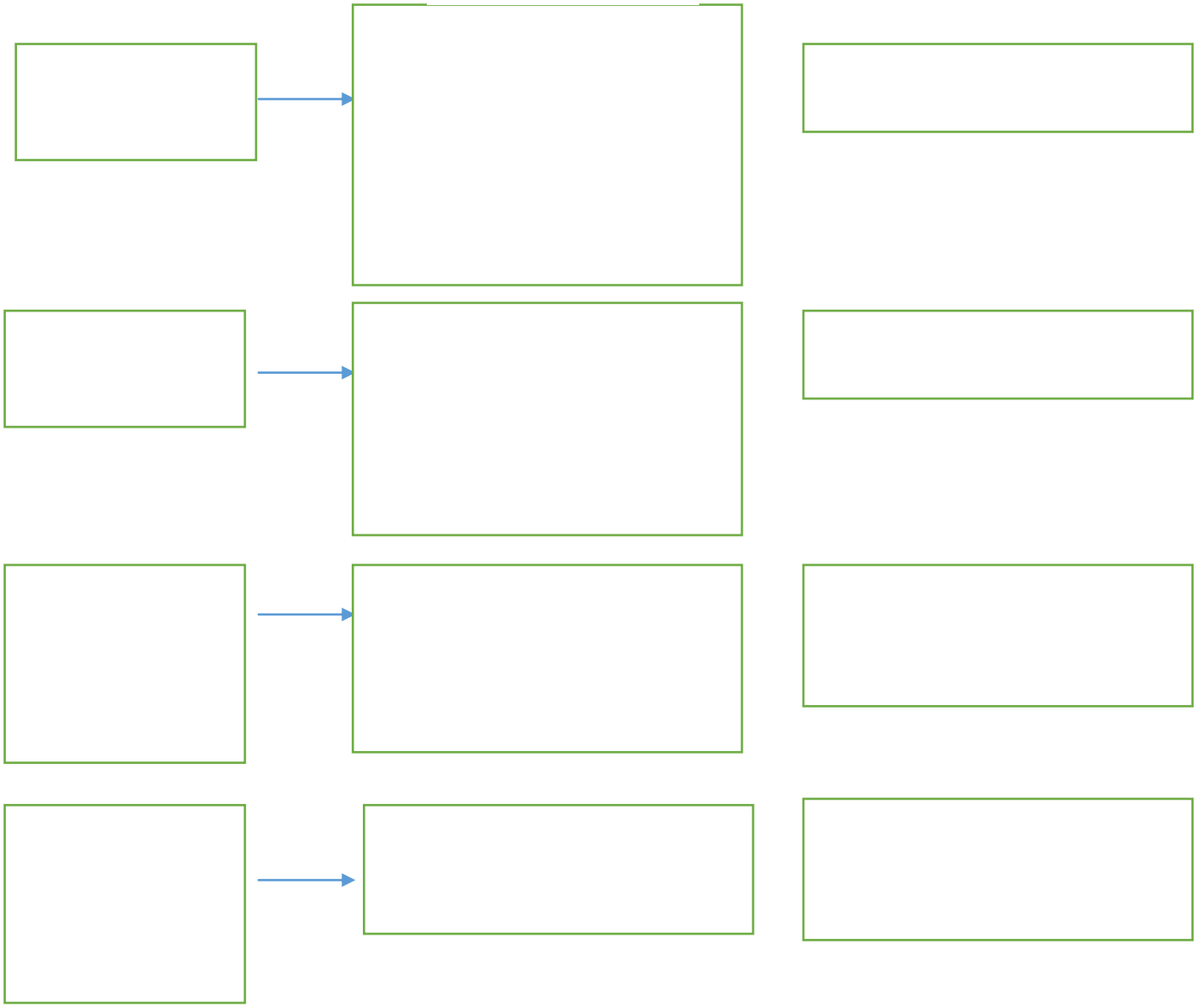


Figure 12: Flow Chart for Pilot Study

Results

The results of the study are presented below:

Table 5: Pilot test results showing the functionality of the enrollment process

Section A	**Enrollment Method**		
	Download Moodle App	Received enrollment E-mail	Logged into the class
Respondent 1	×	✓	✓
Respondent 2	✓	✓	✓
Respondent 3	×	✓	✓
Respondent 4	×	✓	✓
Respondent 5	×	✓	✓
Respondent 6	×	✓	✓
Respondent 7	×	✓	✓
Respondent 8	×	✓	✓
Respondent 9	×	✓	✓
Respondent 10	×	✓	✓
Percentage	10%	100%	100%

The results indicate that only 10 percent of the respondents could download the mobile Moodle app, 100 percent received enrollment e-mails and were able to log in to the class through a Laptop or desktop computer.

Table 6: Pilot test results showing the respondents' ability to access online content

Section B	**Accessing online Content**				
	Online Reading Materials	Online Videos	Pre-test	Post-test	Commenting on Discussion Forum
Respondent 1	✓	✓	×	×	✓
Respondent 2	✓	✓	✓	×	✓
Respondent 3	✓	✓	✓	×	✓
Respondent 4	✓	✓	✓	×	✓
Respondent 5	✓	✓	✓	×	✓
Respondent 6	✓	✓	✓	×	✓
Respondent 7	✓	✓	✓	×	✓
Respondent 8	✓	✓	✓	×	✓
Respondent 9	✓	✓	✓	×	✓
Respondent 10	✓	✓	✓	×	✓
	100%	100%	90%	0%	100%

The results indicate that all the respondents could read the online materials posted on the site, watch online videos and post comments on the discussion forum. 90% of the respondents were able to take to the pre-test and none of the respondents could access the post-test activity on the Moodle site.

Summary of Findings

Summarily the results of the pilot test showed that:

1. The enrolment method selected for the site is functional
2. Students can access the online videos
3. Students can access the reading materials
4. Students can only access the pre-test but they cannot access the post-test.
5. Students can make comments on the discussion forum

6. Students cannot download the Moodle Mobile App

Recommended Actions

Based on the findings of the pilot test, the following actions were recommended:

1. The site administrator should reconfigure the Moodle Mobile App settings on the Moodle site (https://rsudbe.com.ng) to enable students to download the app on their phones and log in to the class from their mobile phones.
2. Activate the Post-test so that it will be assessable to students (this will be hidden from the actual students undergoing the experiment until the 7th week of the course).

APPENDIX M – RELIABILITY OF THE INSTRUMENT

Kuder Richarson K21 formula was used to calculate the reliability coefficient

$$KR-21=\frac{k}{k-1}\left[1-\frac{\bar{x}\left(k-\bar{x}\right)}{k\delta^{2}}\right]$$

Where

K = Number of respondents

X = Mean score

∂^2 = Variance

The scores of the respondents are presented below:

Student	Score
1	18
2	15
3	17
4	18
5	6
6	9
7	10
8	11
9	14
10	9
11	6
12	9
13	13
14	11
15	4
16	20
Student	**Score**
17	6
18	11
19	12
20	6
21	18
22	21
23	12
24	13
25	16
26	11
27	27
28	11
29	7
30	19

Mean = 12.67
Variance = 28.92

$$KR\ 21 = \frac{30}{30 - 1}\left[1 - \frac{12.67\ (30 - 12.67)}{30 \times 28.92}\right]$$

$$= \frac{30}{29}\left[1 - \frac{12.67\ (17.33)}{867.6}\right]$$

$$= 1.03\left[1 - \frac{219.57}{867.6}\right]$$

$$= 1.03\left[1 - 0.25\right]$$

$$= 1.03 \times 0.75$$

$$= 0.77$$

APPENDIX N – ITEM ANALYSIS FOR BESFAAT

	Person scores			*Item Statistics*							*Summary*	
Person	**ID**	**Score**	**Item**	**Difficulty Index (P)**	**Discriminatory Index (Rpbis)**	**Number correct**	**Number incorrect**	**Mean score correct**	**Mean score incorrect**	**Remark**	**Statistic**	**Value**
1	STD 1	18	1	0.37	0.00	10	17	12.60	12.65	Modified	***Test statistics***	
2	STD 2	15	2	0.55	0.15	16	13	13.31	11.69	Retained	Examinees:	30
3	STD 3	17	3	0.60	0.54	18	12	15.00	9.17	Retained	Items:	40
4	STD 4	18	4	0.63	0.36	17	10	14.18	10.10	Retained	Mean:	12.67
5	STD 5	6	5	0.03	-0.06	1	29	11.00	12.72	Modified	SD:	5.38
6	STD 6	9	6	0.47	0.60	14	16	16.07	9.69	Retained	Variance:	28.92
7	STD 7	10	7	0.57	0.31	17	13	14.12	10.77	Retained	Min:	4
8	STD 8	11	8	0.15	0.19	4	23	15.00	12.26	Modified	Max:	27
9	STD 9	14	9	0.21	0.11	6	22	13.83	12.50	Modified	KR-20:	0.74
10	STD 10	9	10	0.29	0.30	8	20	15.38	11.75	Modified	SEM:	2.73
11	STD 11	6	11	0.57	0.42	17	13	14.59	10.15	Retained		
12	STD 12	9	12	0.13	0.47	4	26	19.00	11.69	Retained	***Item statistics***	
13	STD 13	13	13	0.22	0.43	6	21	16.50	11.00	Retained	Mean P:	0.34
14	STD 14	11	14	0.24	0.42	7	22	16.43	11.23	Retained	Min P:	0.03
15	STD 15	4	15	0.37	0.45	10	17	16.00	11.24	Retained	Max P:	0.90
16	STD 16	20	16	0.26	0.14	7	20	14.14	12.50	Modified	Mean Rpbis:	0.29
17	STD 17	6	17	0.54	0.48	14	12	14.79	9.75	Retained	Min Rpbis:	-0.06
18	STD 18	11	18	0.38	0.34	10	16	15.10	11.31	Retained	Max Rpbis:	0.60

19	STD 19	12	19	0.39	0.39	11	17	14.73	10.59	Retained
20	STD 20	6	20	0.90	0.38	26	3	13.42	6.67	Retained
21	STD 21	18	21	0.24	0.34	7	22	16.00	11.77	Retained
22	STD 22	21	22	0.31	0.54	9	20	17.00	10.75	Retained
23	STD 23	12	23	0.08	0.14	2	24	14.50	12.00	Modified
24	STD 24	13	24	0.27	0.02	7	19	13.00	12.79	Modified
25	STD 25	16	25	0.43	0.53	12	16	16.17	10.63	Retained
26	STD 26	11	26	0.38	0.07	11	18	13.45	12.67	Retained
27	STD 27	27	27	0.11	0.02	3	25	13.33	12.92	Modified
28	STD 28	11	28	0.54	0.36	15	13	14.80	11.00	Retained
29	STD 29	7	29	0.18	0.27	5	23	16.00	12.35	Modified
30	STD 30	19	30	0.25	0.05	7	21	13.57	12.95	Modified
			31	0.39	0.41	11	17	15.73	11.41	Retained
			32	0.03	-0.04	1	28	12.00	13.00	Modified
			33	0.20	0.26	5	20	16.20	12.75	Modified
			34	0.33	0.40	9	18	15.00	11.17	Retained
			35	0.41	0.28	11	16	14.82	11.94	Retained
			36	0.19	0.36	5	21	17.20	12.57	Modified
			37	0.39	0.46	11	17	16.09	11.35	Retained
			38	0.44	0.49	11	14	16.27	11.43	Retained
			39	0.33	0.09	9	18	14.11	13.11	Retained
			40	0.24	0.28	6	19	16.17	12.74	Retained

Item	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Key	**B**	**A**	**B**	**B**	**D**	**B**	**E**	**D**	**D**	**A**	**C**	**C**	**C**	**C**	**B**	**A**	**C**	**E**	**E**	**A**
Option N																		#####		
A	10	16	6	5	14	8	2	10	7	8	3	13	7	3	13	7	7	1	1	26
B	10	8	18	17	9	14	10	7	7	10	0	4	4	8	10	4	3	5	11	1
C	3	0	3	1	3	3	0	5	5	5	17	4	6	7	1	6	14	8	1	1
D	4	4	3	2	1	5	1	4	6	3	7	5	2	8	1	7	0	2	4	0
E	0	1	0	2	3	0	17	1	3	2	3	4	8	3	2	2	2	10	11	1
Option P																				
A	0.33	0.53	0.20	0.17	0.47	0.27	0.07	0.33	0.23	0.27	0.10	0.43	0.23	0.10	0.43	0.23	0.23	0.03	0.03	0.87
B	0.33	0.27	0.60	0.57	0.30	0.47	0.33	0.23	0.23	0.33	0.00	0.13	0.13	0.27	0.33	0.13	0.10	0.17	0.37	0.03
C	0.10	0.00	0.10	0.03	0.10	0.10	0.00	0.17	0.17	0.17	0.57	0.13	0.20	0.23	0.03	0.20	0.47	0.27	0.03	0.03
D	0.13	0.13	0.10	0.07	0.03	0.17	0.03	0.13	0.20	0.10	0.23	0.17	0.07	0.27	0.03	0.23	0.00	0.07	0.13	0.00
E	0.00	0.03	0.00	0.07	0.10	0.00	0.57	0.03	0.10	0.07	0.10	0.13	0.27	0.10	0.07	0.07	0.07	0.33	0.37	0.03
Option Rpbis																				
A	0.08	0.15	-0.14	-0.20	-0.14	-0.45	-0.36	-0.17	0.20	0.30	-0.11	-0.07	-0.01	0.08	-0.19	0.14	-0.43	0.01	0.03	0.38
B	0.00	-0.25	0.54	0.36	0.12	0.60	-0.14	-0.14	-0.01	0.08	#####	-0.02	-0.14	-0.11	0.45	-0.07	0.01	0.09	-0.34	-0.10
C	0.02	#####	-0.34	-0.24	-0.25	-0.04	#####	-0.06	-0.27	-0.24	0.42	0.47	0.43	0.42	-0.08	-0.27	0.48	-0.20	-0.23	-0.24
D	-0.13	0.01	-0.36	0.02	-0.06	-0.24	0.01	0.19	0.11	0.06	-0.43	-0.23	-0.01	-0.36	-0.04	0.17	#####	-0.41	0.04	#####
E	#####	0.19	#####	-0.22	0.34	#####	0.31	0.54	-0.08	-0.40	0.02	-0.14	-0.27	0.03	-0.39	-0.38	-0.19	0.34	0.39	-0.31

Item	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
Key	**E**	**C**	**C**	**A**	**C**	**A**	**A**	**D**	**E**	**D**	**B**	**D**	**D**	**B**	**A**	**C**	**C**	**A**	**A**	**B**
Option N																				
A	8	5	18	7	13	11	3	7	7	9	5	15	7	2	11	4	7	11	9	17
B	5	6	3	5	2	1	5	2	4	4	11	1	6	9	5	8	7	8	8	6
C	6	9	2	8	12	2	6	3	7	6	2	5	2	4	6	5	11	3	3	0
D	3	9	1	5	1	5	13	15	5	7	2	1	5	8	4	7	1	3	5	0
E	7	0	1	1	0	10	1	1	5	2	8	7	5	4	1	2	2	0	2	2
Option P																				
A	0.27	0.17	0.60	0.23	0.43	0.37	0.10	0.23	0.23	0.30	0.17	0.50	0.23	0.07	0.37	0.13	0.23	0.37	0.30	0.57
B	0.17	0.20	0.10	0.17	0.07	0.03	0.17	0.07	0.13	0.13	0.37	0.03	0.20	0.30	0.17	0.27	0.23	0.27	0.27	0.20
C	0.20	0.30	0.07	0.27	0.40	0.07	0.20	0.10	0.23	0.20	0.07	0.17	0.07	0.13	0.20	0.17	0.37	0.10	0.10	0.00
D	0.10	0.30	0.03	0.17	0.03	0.17	0.43	0.50	0.17	0.23	0.07	0.03	0.17	0.27	0.13	0.23	0.03	0.10	0.17	0.00
E	0.23	0.00	0.03	0.03	0.00	0.33	0.03	0.03	0.17	0.07	0.27	0.23	0.17	0.13	0.03	0.07	0.07	0.00	0.07	0.07
Option Rpbis																				
A	-0.34	-0.13	0.15	0.02	-0.44	0.07	0.02	-0.08	0.35	-0.27	0.12	0.37	0.10	-0.21	0.28	0.23	-0.43	0.49	0.09	-0.22
B	-0.12	-0.24	-0.24	-0.02	-0.35	-0.11	0.06	-0.06	-0.29	-0.07	0.41	0.30	-0.43	0.40	-0.37	-0.18	0.02	-0.25	0.12	0.28
C	0.13	0.54	0.14	0.02	0.53	0.11	-0.08	-0.40	-0.41	-0.03	-0.22	-0.25	0.20	-0.11	0.27	0.36	0.46	-0.02	-0.08	#####
D	-0.01	-0.22	-0.05	0.05	0.26	0.00	-0.09	0.36	0.07	0.05	-0.25	-0.04	0.26	-0.26	-0.21	-0.23	0.07	-0.37	-0.10	#####
E	0.34	#####	-0.25	-0.14	#####	-0.09	0.26	-0.04	0.27	0.53	-0.27	-0.33	-0.04	0.07	-0.16	-0.17	-0.23	#####	-0.14	-0.06

APPENDIX O – RAW DATA IN SPSS

S/N	School	Gender	Approach	Pre-test	Post-test	Delayed_Post-test
1	2	2	2	5.00	42.50	60.00
2	2	1	2	5.00	40.00	60.00
3	2	2	2	27.50	42.50	57.50
4	2	2	2	20.00	50.00	50.00
5	2	1	2	20.00	15.00	47.50
6	2	2	2	20.00	25.00	45.00
7	2	2	2	20.00	25.00	45.00
8	2	2	2	7.50	27.50	42.50
9	2	2	2	45.00	37.50	40.00
10	2	2	2	22.50	25.00	40.00
11	2	1	2	20.00	17.50	40.00
12	2	2	2	10.00	22.50	40.00
13	2	1	2	10.00	35.00	40.00
14	2	1	2	10.00	30.00	40.00
15	2	1	2	10.00	12.50	37.50
16	2	1	2	30.00	47.50	37.50
17	2	2	2	30.00	17.50	37.50
18	2	1	2	30.00	27.50	37.50
19	2	2	2	30.00	27.50	35.00
20	2	1	2	30.00	15.00	35.00
21	2	1	2	30.00	50.00	35.00
22	2	1	2	30.00	55.00	35.00
23	2	2	2	30.00	35.00	35.00
24	2	1	2	20.00	32.50	32.50
25	2	2	2	20.00	42.50	32.50

Key:

School:

1 – Rivers State University

2 – Ignatius Ajuru University of Education

Gender:

1 – Male

2 – Female

Approach:

1 – Blended learning Approach

2 – Conventional Classroom Approach

26	2	2	2	27.50	30.00	32.50
27	2	2	2	27.50	72.50	32.50
28	2	1	2	15.00	37.50	30.00
29	2	1	2	27.50	17.50	30.00
30	2	1	2	27.50	47.50	30.00
31	2	1	2	22.50	30.00	30.00
32	2	2	2	30.00	20.00	27.50
33	2	2	2	30.00	42.50	27.50
34	2	2	2	32.50	37.50	27.50
35	2	2	2	32.50	40.00	27.50
36	2	2	2	32.50	20.00	27.50
37	2	2	2	32.50	30.00	25.00
38	2	2	2	27.50	35.00	25.00
39	2	1	2	27.50	37.50	25.00
40	2	2	2	30.00	30.00	25.00
41	2	2	2	30.00	17.50	25.00
42	2	2	2	12.50	10.00	25.00
43	2	1	2	10.00	27.50	25.00
44	2	2	2	10.00	17.50	25.00
45	2	2	2	10.00	42.50	25.00
46	2	2	2	17.50	10.00	25.00
47	2	2	2	22.50	20.00	22.50
48	2	1	2	15.00	27.50	22.50
49	2	2	2	22.50	32.50	22.50
50	2	1	2	35.00	45.00	20.00
51	2	1	2	27.50	22.50	20.00
52	2	2	2	17.50	25.00	20.00

53	2	2	2	27.50	30.00	20.00
54	2	1	2	35.00	25.00	20.00
55	2	2	2	27.50	27.50	20.00
56	2	1	2	27.50	47.50	20.00
57	2	1	2	27.50	45.00	17.50
58	2	1	2	27.50	35.00	17.50
59	2	2	2	15.00	27.50	17.50
60	2	1	2	20.00	35.00	17.50
61	2	1	2	20.00	20.00	17.50
62	2	2	2	20.00	32.50	17.50
63	2	2	2	22.50	40.00	15.00
64	2	2	2	30.00	37.50	12.50
65	2	2	2	12.50	30.00	12.50
66	2	2	2	32.50	22.50	12.50
67	2	1	2	32.50	50.00	12.50
68	2	2	2	12.50	37.50	12.50
69	2	2	2	12.50	20.00	60.00
70	2	1	2	12.50	57.50	60.00
71	2	2	2	12.50	25.00	57.50
72	2	2	2	42.50	50.00	50.00
73	2	2	2	42.50	15.00	47.50
74	2	2	2	20.00	22.50	45.00
75	2	1	2	20.00	30.00	45.00
76	2	2	2	25.00	20.00	42.50
77	2	2	2	37.50	40.00	40.00
78	2	2	2	37.50	55.00	40.00
79	2	1	2	37.50	22.50	60.00

80	2	2	2	37.50	17.50	60.00
81	2	1	2	37.50	47.50	57.50
82	2	2	2	15.00	25.00	50.00
83	2	1	2	35.00	55.00	47.50
84	2	2	2	35.00	25.00	45.00
85	2	2	2	30.00	45.00	45.00
86	2	2	2	30.00	20.00	42.50
87	2	2	2	25.00	47.50	40.00
88	2	2	2	25.00	7.50	40.00
89	2	2	2	25.00	47.50	60.00
90	2	2	2	20.00	27.50	60.00
91	2	2	2	20.00	15.00	57.50
92	2	1	2	20.00	17.50	50.00
93	2	1	2	20.00	22.50	47.50
94	2	2	2	17.50	30.00	45.00
95	2	2	2	40.00	15.00	45.00
96	2	1	2	40.00	20.00	42.50
97	2	1	2	40.00	40.00	40.00
98	2	2	2	40.00	22.50	40.00
99	2	2	2	40.00	52.50	60.00
100	2	2	2	40.00	52.50	60.00
101	2	2	2	25.00	32.50	57.50
102	2	2	2	10.00	20.00	50.00
103	2	1	2	10.00	40.00	47.50
104	2	2	2	10.00	20.00	45.00
105	2	2	2	25.00	40.00	45.00
106	2	2	2	25.00	27.50	42.50

107	2	2	2	37.50	37.50	40.00
108	2	2	2	25.00	35.00	40.00
109	2	2	2	25.00	25.00	60.00
110	2	2	2	22.50	40.00	60.00
111	2	1	2	22.50	40.00	57.50
112	2	2	2	42.50	50.00	50.00
113	2	1	2	22.50	47.50	47.50
114	2	2	2	27.50	45.00	45.00
115	2	2	2	30.00	70.00	45.00
116	2	1	2	17.50	35.00	42.50
117	2	1	2	17.50	52.50	40.00
118	2	2	2	27.50	22.50	40.00
119	2	1	2	27.50	22.50	60.00
120	2	2	2	27.50	32.50	60.00
121	2	2	2	37.50	27.50	57.50
122	2	2	2	12.50	75.00	50.00
123	1	2	1	25.00	55.00	62.50
124	1	2	1	15.00	45.00	67.50
125	1	1	1	32.50	62.50	65.00
126	1	1	1	17.50	55.00	62.50
127	1	2	1	37.50	52.50	62.50
128	1	1	1	17.50	65.50	72.50
129	1	2	1	17.50	50.00	52.50
130	1	1	1	47.50	75.00	80.00
131	1	1	1	52.50	82.50	68.75
132	1	1	1	22.50	52.50	55.00
133	1	2	1	37.50	70.00	50.00

134	1	2	1	30.00	60.00	72.50
135	1	2	1	27.50	55.00	62.50
136	1	2	1	7.50	75.00	72.50
137	1	1	1	37.50	67.50	72.50
138	1	2	1	35.00	57.50	75.00
139	1	2	1	42.50	72.50	57.50
140	1	1	1	40.00	70.00	72.50
141	1	2	1	32.50	72.50	75.50
142	1	1	1	32.50	52.50	60.00
143	1	1	1	30.00	60.00	57.50
144	1	2	1	30.00	60.00	62.50
145	1	1	1	55.00	85.00	72.50
146	1	2	1	32.50	62.50	72.50
147	1	2	1	52.50	75.00	87.50
148	1	1	1	42.50	72.50	80.00
149	1	2	1	25.00	30.00	66.25
150	1	2	1	30.00	60.00	72.50
151	1	2	1	42.50	72.50	82.50
152	1	2	1	22.50	65.00	77.50
153	1	1	1	37.50	67.50	72.50
154	1	1	1	67.50	70.00	82.50
155	1	1	1	22.50	52.50	72.50
156	1	1	1	27.50	65.00	75.00
157	1	2	1	22.50	48.75	57.50
158	1	2	1	27.50	55.00	50.00
159	1	1	1	37.50	67.50	72.50
160	1	2	1	37.50	67.50	60.00

APPENDIX P – SPSS RESULT SHOWING EFFECT OF BLENDED LEARNING APPROACH ON STUDENTS' ACADEMIC ACHIEVEMENT IN FINANCIAL ACCOUNTING

Univariate Analysis of Variance

Between-Subjects Factors

		Value Label	N
Approach	1	Blended Learning Approach	38
	2	Conventional Classroom Approach	122

Descriptive Statistics

Dependent Variable: Posttest

Approach	Mean	Std. Deviation	N
Blended Learning Approach	62.7434	10.96162	38
Conventional Classroom Approach	32.8893	13.33384	122
Total	39.9797	18.04658	160

Levene's Test of Equality of Error Variances[a]

Dependent Variable: Posttest

F	df1	df2	Sig.
6.417	1	158	.012

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + Pretest + Approach

Tests for Heteroskedasticity

F Test for Heteroskedasticity[a,b,c]

F	df1	df2	Sig.
3.645	1	158	.058

a. Dependent variable: Posttest

b. Tests the null hypothesis that the variance of the errors does not depend on the values of the independent variables.
c. Predicted values from design: Intercept + Pretest + Approach

Tests of Between-Subjects Effects

Dependent Variable: Posttest

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	27507.965[a]	2	13753.983	88.955	.000	.531
Intercept	24432.767	1	24432.767	158.020	.000	.502
Pretest	1683.536	1	1683.536	10.888	.001	.065
Approach	19293.028	1	19293.028	124.779	.000	.443
Error	24275.031	157	154.618			
Total	307523.063	160				
Corrected Total	51782.996	159				

a. R Squared = .531 (Adjusted R Squared = .525)

Estimated Marginal Means

Approach

Estimates

Dependent Variable: Posttest

Approach	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Blended Learning Approach	60.764[a]	2.104	56.608	64.921
Conventional Classroom Approach	33.506[a]	1.141	31.252	35.760

a. Covariates appearing in the model are evaluated at the following values: Pretest = 26.7813.

Univariate Tests

Dependent Variable: Posttest

	Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Contrast	19293.028	1	19293.028	124.779	.000	.443
Error	24275.031	157	154.618			

The F tests the effect of Approach. This test is based on the linearly independent pairwise comparisons among the estimated marginal means.

Pairwise Comparisons

Dependent Variable: Posttest

(I) Approach	(J) Approach	Mean Difference (I-J)	Std. Error	Sig.[b]	95% Confidence Interval for Difference[b] Lower Bound	Upper Bound
Blended Learning Approach	Conventional Classroom Approach	27.259*	2.440	.000	22.439	32.079
Conventional Classroom Approach	Blended Learning Approach	-27.259*	2.440	.000	-32.079	-22.439

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

b. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

APPENDIX Q – SPSS RESULT SHOWING EFFECT OF BLENDED LEARNING APPROACH ON STUDENTS' RETENTION SCORES IN FINANCIAL ACCOUNTING

Univariate Analysis of Variance

Between-Subjects Factors

		Value Label	N
Approach	1	Blended Learning Approach	38
	2	Conventional Classroom Approach	122

Descriptive Statistics

Dependent Variable: Delayed_Posttest

Approach	Mean	Std. Deviation	N
Blended Learning Approach	68.2368	9.34908	38
Conventional Classroom Approach	38.2377	13.99782	122
Total	45.3625	18.26062	160

Levene's Test of Equality of Error Variances[a]

Dependent Variable: Delayed_Posttest

F	df1	df2	Sig.
12.143	1	158	.001

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + Pretest + Posttest + Approach

Tests for Heteroskedasticity

F Test for Heteroskedasticity[a,b,c]

F	df1	df2	Sig.
13.295	1	158	.000

a. Dependent variable: Delayed_Posttest

b. Tests the null hypothesis that the variance of the errors does not depend on the values of the independent variables.

c. Predicted values from design: Intercept + Pretest + Posttest + Approach

Tests of Between-Subjects Effects

Dependent Variable: Delayed_Posttest

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	26725.448[a]	3	8908.483	52.855	.000	.504
Intercept	16431.904	1	16431.904	97.492	.000	.385
Pretest	118.494	1	118.494	.703	.403	.004
Posttest	380.661	1	380.661	2.259	.135	.014
Approach	9443.132	1	9443.132	56.027	.000	.264
Error	26293.152	156	168.546			
Total	382259.625	160				
Corrected Total	53018.600	159				

a. R Squared = .504 (Adjusted R Squared = .495)

Estimated Marginal Means

Approach

Estimates

Dependent Variable: Delayed_Posttest

Approach	Mean	Std. Error	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound
Blended Learning Approach	64.843[a]	2.798	59.317	70.370
Conventional Classroom Approach	39.295[a]	1.308	36.711	41.878

a. Covariates appearing in the model are evaluated at the following values: Pretest = 26.7813, Posttest = 39.9797.

Pairwise Comparisons

Dependent Variable: Delayed_Posttest

(I) Approach	(J) Approach	Mean Difference (I-J)	Std. Error	Sig.[b]	95% Confidence Interval for Difference[b] Lower Bound	95% Confidence Interval for Difference[b] Upper Bound
Blended Learning Approach	Conventional Classroom Approach	25.549*	3.413	.000	18.806	32.291
Conventional Classroom Approach	Blended Learning Approach	-25.549*	3.413	.000	-32.291	-18.806

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

b. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

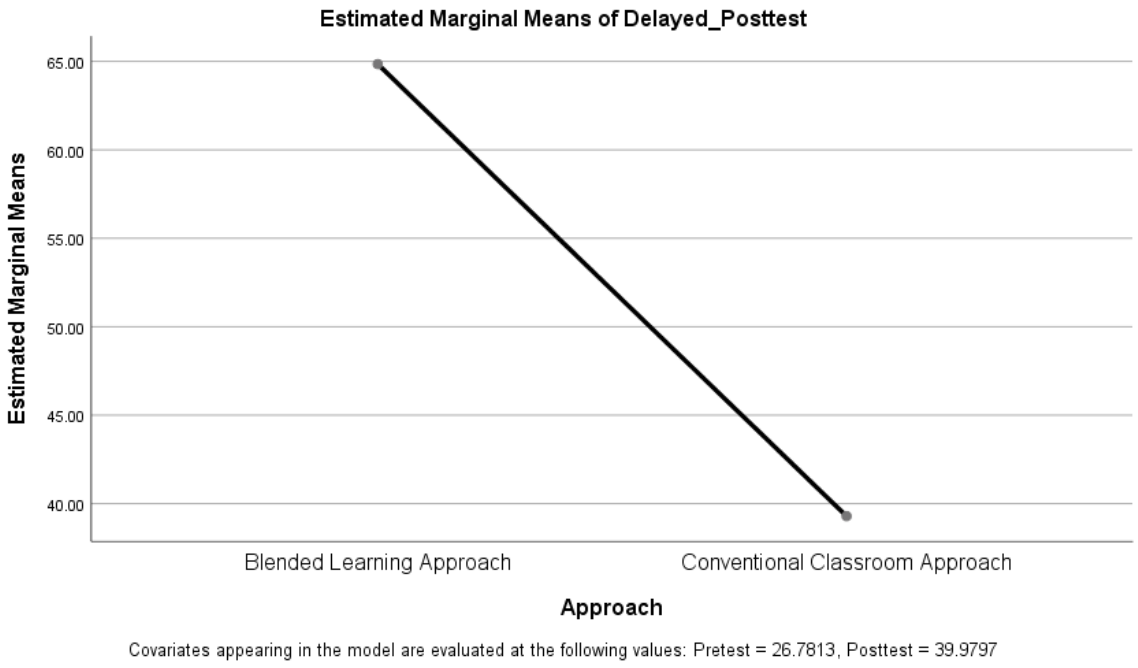
Univariate Tests

Dependent Variable: Delayed_Posttest

	Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Contrast	9443.132	1	9443.132	56.027	.000	.264
Error	26293.152	156	168.546			

The F tests the effect of Approach. This test is based on the linearly independent pairwise comparisons among the estimated marginal means.

Profile Plots



APPENDIX R – SPSS RESULT SHOWING THE EFFECT OF GENDER ON STUDENTS' ACADEMIC ACHIEVEMENT IN FINANCIAL ACCOUNTING

Univariate Analysis of Variance

Between-Subjects Factors

		Value Label	N
Gender	1	Male	17
	2	Female	21

Descriptive Statistics

Dependent Variable: Posttest

Gender	Mean	Std. Deviation	N
Male	66.0588	9.72253	17
Female	60.0595	11.39131	21
Total	62.7434	10.96162	38

Levene's Test of Equality of Error Variances[a]

Dependent Variable: Posttest

F	df1	df2	Sig.
1.008	1	36	.322

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + Pretest + Gender

Tests of Between-Subjects Effects

Dependent Variable: Posttest

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	1685.047[a]	2	842.524	10.681	.000	.379
Intercept	8667.668	1	8667.668	109.886	.000	.758
Pretest	1346.916	1	1346.916	17.076	.000	.328
Gender	62.176	1	62.176	.788	.381	.022
Error	2760.764	35	78.879			
Total	154041.813	38				
Corrected Total	4445.811	37				

a. R Squared = .379 (Adjusted R Squared = .344)

Estimated Marginal Means

1. Grand Mean

Dependent Variable: Posttest

Mean	Std. Error	95% Confidence Interval	
		Lower Bound	Upper Bound
62.884[a]	1.449	59.941	65.826

a. Covariates appearing in the model are evaluated at the following values: Pretest = 32.8947.

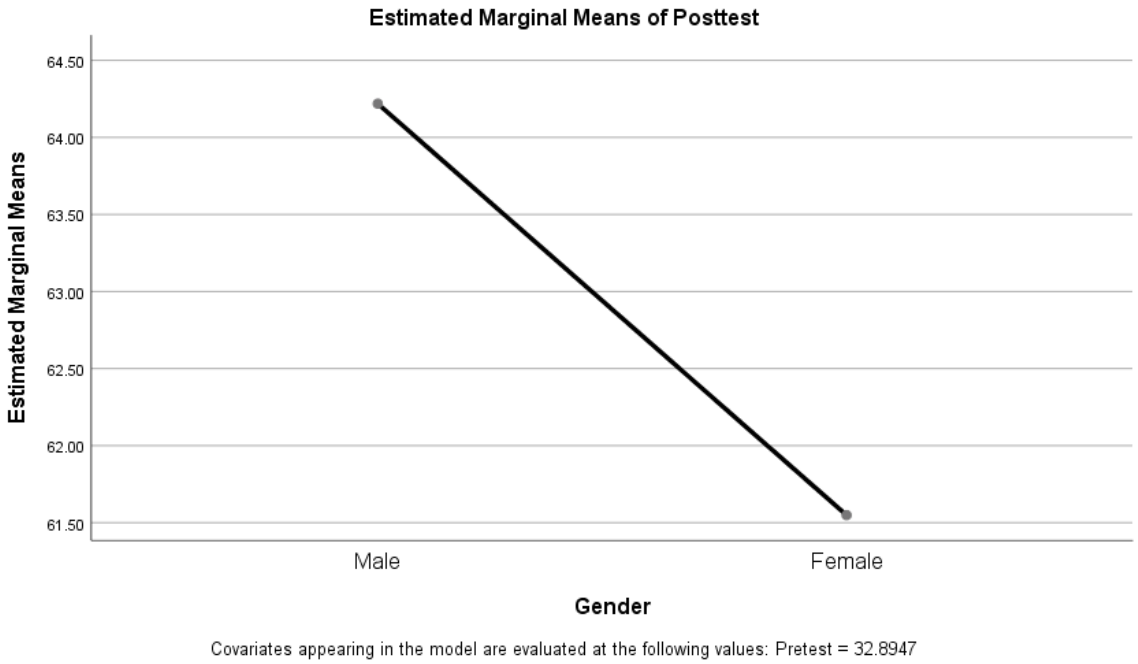
2. Gender

Dependent Variable: Posttest

Gender	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Male	64.219[a]	2.200	59.754	68.684
Female	61.549[a]	1.971	57.547	65.551

a. Covariates appearing in the model are evaluated at the following values: Pretest = 32.8947.

Profile Plots



APPENDIX S - SPSS RESULTS SHOWING EFFECT OF GENDER ON STUDENTS' RETENTION SCORES IN FINANCIAL ACCOUNTING

Univariate Analysis of Variance

Between-Subjects Factors

		Value Label	N
Gender	1	Male	17
	2	Female	21

Descriptive Statistics

Dependent Variable: Delayed_Posttest

Gender	Mean	Std. Deviation	N
Male	70.2206	7.85905	17
Female	66.6310	10.30704	21
Total	68.2368	9.34908	38

Levene's Test of Equality of Error Variances[a]

Dependent Variable: Delayed_Posttest

F	df1	df2	Sig.
4.680	1	36	.037

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + Pretest + Posttest + Gender

Tests of Between-Subjects Effects

Dependent Variable: Delayed_Posttest

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	779.455[a]	3	259.818	3.599	.023	.241
Intercept	2062.995	1	2062.995	28.576	.000	.457
Pretest	72.393	1	72.393	1.003	.324	.029
Posttest	224.208	1	224.208	3.106	.087	.084
Gender	7.512	1	7.512	.104	.749	.003
Error	2454.538	34	72.192			
Total	180172.125	38				
Corrected Total	3233.993	37				

a. R Squared = .241 (Adjusted R Squared = .174)

Estimated Marginal Means

1. Gender

Dependent Variable: Delayed_Posttest

Gender	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Male	68.756[a]	2.118	64.452	73.059
Female	67.817[a]	1.896	63.964	71.670

a. Covariates appearing in the model are evaluated at the following values: Pretest = 32.8947, Posttest = 62.7434.

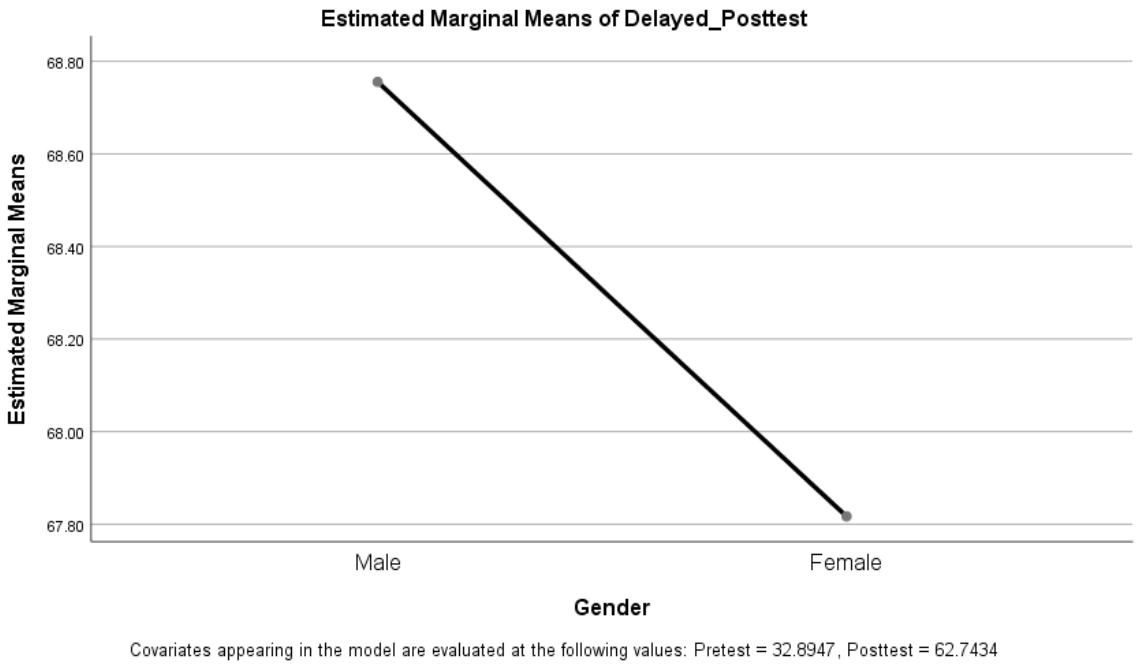
2. Grand Mean

Dependent Variable: Delayed_Posttest

Mean	Std. Error	95% Confidence Interval	
		Lower Bound	Upper Bound
68.286[a]	1.387	65.468	71.105

a. Covariates appearing in the model are evaluated at the following values: Pretest = 32.8947, Posttest = 62.7434.

Profile Plots



APPENDIX T - SPSS RESULTS SHOWING THE INTERACTION EFFECT OF APPROACH AND GENDER ON STUDENTS'ACADEMIC ACHIEVEMENT IN FINANCIAL ACCOUNTING

Univariate Analysis of Variance

Between-Subjects Factors

		Value Label	N
Gender	1	Male	60
	2	Female	100
Approach	1	Blended Learning Approach	38
	2	Conventional Classroom Approach	122

Descriptive Statistics

Dependent Variable: Posttest

Gender	Approach	Mean	Std. Deviation	N
Male	Blended Learning Approach	66.0588	9.72253	17
	Conventional Classroom Approach	34.3605	12.71357	43
	Total	43.3417	18.65964	60
Female	Blended Learning Approach	60.0595	11.39131	21
	Conventional Classroom Approach	32.0886	13.67216	79
	Total	37.9625	17.45273	100
Total	Blended Learning Approach	62.7434	10.96162	38
	Conventional Classroom Approach	32.8893	13.33384	122
	Total	39.9797	18.04658	160

Levene's Test of Equality of Error Variances[a]

Dependent Variable: Posttest

F	df1	df2	Sig.
2.481	3	156	.063

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + Pretest + Gender + Approach + Gender * Approach

Tests of Between-Subjects Effects

Dependent Variable: Posttest

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	27873.449[a]	4	6968.362	45.174	.000	.538
Intercept	24270.562	1	24270.562	157.340	.000	.504
Pretest	1567.174	1	1567.174	10.160	.002	.062
Gender	317.501	1	317.501	2.058	.153	.013
Approach	18212.456	1	18212.456	118.067	.000	.432
Gender * Approach	8.841	1	8.841	.057	.811	.000
Error	23909.548	155	154.255			
Total	307523.063	160				
Corrected Total	51782.996	159				

a. R Squared = .538 (Adjusted R Squared = .526)

Estimated Marginal Means

1. Grand Mean

Dependent Variable: Posttest

Mean	Std. Error	95% Confidence Interval	
		Lower Bound	Upper Bound
47.460[a]	1.191	45.108	49.813

a. Covariates appearing in the model are evaluated at the following values: Pretest = 26.7813.

2. Gender

Estimates

Dependent Variable: Posttest

Gender	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Male	49.150[a]	1.810	45.574	52.725
Female	45.771[a]	1.528	42.753	48.789

a. Covariates appearing in the model are evaluated at the following values: Pretest = 26.7813.

Pairwise Comparisons

Dependent Variable: Posttest

(I) Gender	(J) Gender	Mean Difference (I-J)	Std. Error	Sig.[a]	95% Confidence Interval for Difference[a] Lower Bound	Upper Bound
Male	Female	3.379	2.355	.153	-1.273	8.031
Female	Male	-3.379	2.355	.153	-8.031	1.273

Based on estimated marginal means

a. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

Univariate Tests

Dependent Variable: Posttest

	Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Contrast	317.501	1	317.501	2.058	.153	.013
Error	23909.548	155	154.255			

The F tests the effect of Gender. This test is based on the linearly independent pairwise comparisons among the estimated marginal means.

3. Approach

Estimates

Dependent Variable: Posttest

Approach	Mean	Std. Error	95% Confidence Interval Lower Bound	Upper Bound
Blended Learning Approach	61.013[a]	2.125	56.815	65.211
Conventional Classroom Approach	33.908[a]	1.196	31.545	36.270

a. Covariates appearing in the model are evaluated at the following values: Pretest = 26.7813.

Pairwise Comparisons

Dependent Variable: Posttest

(I) Approach	(J) Approach	Mean Difference (I-J)	Std. Error	Sig.[b]	95% Confidence Interval for Difference[b] Lower Bound	Upper Bound
Blended Learning Approach	Conventional Classroom Approach	27.106*	2.495	.000	22.178	32.033
Conventional Classroom Approach	Blended Learning Approach	-27.106*	2.495	.000	-32.033	-22.178

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

b. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

Univariate Tests

Dependent Variable: Posttest

	Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Contrast	18212.456	1	18212.456	118.067	.000	.432
Error	23909.548	155	154.255			

The F tests the effect of Approach. This test is based on the linearly independent pairwise comparisons among the estimated marginal means.

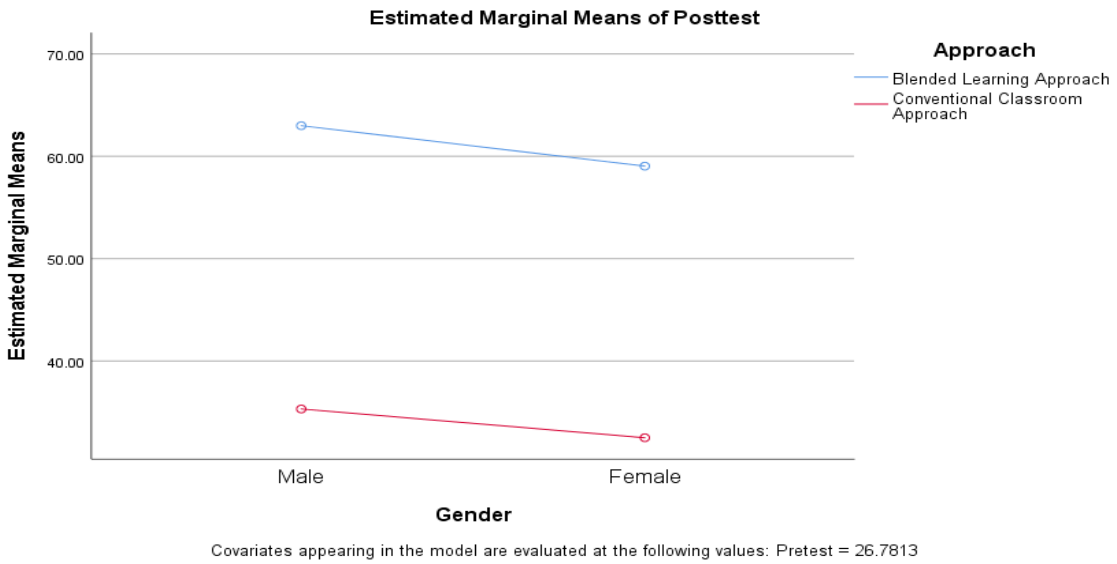
4. Gender * Approach

Dependent Variable: Posttest

Gender	Approach	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
Male	Blended Learning Approach	62.987[a]	3.163	56.740	69.235
	Conventional Classroom Approach	35.312[a]	1.917	31.525	39.100
Female	Blended Learning Approach	59.039[a]	2.729	53.648	64.430
	Conventional Classroom Approach	32.503[a]	1.403	29.731	35.275

a. Covariates appearing in the model are evaluated at the following values: Pretest = 26.7813.

Profile Plots



APPENDIX U- SPSS RESULTS SHOWING THE INTERACTION EFFECT OF APPROACH AND GENDER ON STUDENTS'RETENTION IN FINANCIAL ACCOUNTING

Univariate Analysis of Variance

Between-Subjects Factors

		Value Label	N
Gender	1	Male	60
	2	Female	100
Approach	1	Blended Learning Approach	38
	2	Conventional Classroom Approach	122

Descriptive Statistics

Dependent Variable: Delayed_Posttest

Gender	Approach	Mean	Std. Deviation	N
Male	Blended Learning Approach	70.2206	7.85905	17
	Conventional Classroom Approach	36.6860	13.66827	43
	Total	46.1875	19.54382	60
Female	Blended Learning Approach	66.6310	10.30704	21
	Conventional Classroom Approach	39.0823	14.18839	79
	Total	44.8675	17.52849	100
Total	Blended Learning Approach	68.2368	9.34908	38
	Conventional Classroom Approach	38.2377	13.99782	122
	Total	45.3625	18.26062	160

Levene's Test of Equality of Error Variances[a]

Dependent Variable: Delayed_Posttest

F	df1	df2	Sig.
4.483	3	156	.005

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + Pretest + Posttest + Gender + Approach + Gender * Approach

Tests of Between-Subjects Effects

Dependent Variable: Delayed_Posttest

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	26956.621[a]	5	5391.324	31.857	.000	.508
Intercept	15951.867	1	15951.867	94.259	.000	.380
Pretest	73.376	1	73.376	.434	.511	.003
Posttest	404.014	1	404.014	2.387	.124	.015
Gender	.332	1	.332	.002	.965	.000
Approach	9551.138	1	9551.138	56.438	.000	.268
Gender * Approach	165.228	1	165.228	.976	.325	.006
Error	26061.979	154	169.234			
Total	382259.625	160				
Corrected Total	53018.600	159				

a. R Squared = .508 (Adjusted R Squared = .492)

Estimated Marginal Means

Pairwise Comparisons

Dependent Variable: Delayed_Posttest

(I) Gender	(J) Gender	Mean Difference (I-J)	Std. Error	Sig.[a]	95% Confidence Interval for Difference[a] Lower Bound	Upper Bound
Male	Female	-.110	2.483	.965	-5.015	4.795
Female	Male	.110	2.483	.965	-4.795	5.015

Based on estimated marginal means

a. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

1. Gender

Estimates

Dependent Variable: Delayed_Posttest

Gender	Mean	Std. Error	95% Confidence Interval Lower Bound	Upper Bound
Male	51.887[a]	2.047	47.843	55.930
Female	51.997[a]	1.673	48.693	55.301

a. Covariates appearing in the model are evaluated at the following values: Pretest = 26.7813, Posttest = 39.9797.

Univariate Tests

Dependent Variable: Delayed_Posttest

	Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Contrast	.332	1	.332	.002	.965	.000
Error	26061.979	154	169.234			

The F tests the effect of Gender. This test is based on the linearly independent pairwise comparisons among the estimated marginal means.

2. Approach

Estimates

Dependent Variable: Delayed_Posttest

Approach	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Blended Learning Approach	64.969[a]	2.844	59.351	70.586
Conventional Classroom Approach	38.915[a]	1.353	36.242	41.588

a. Covariates appearing in the model are evaluated at the following values: Pretest = 26.7813, Posttest = 39.9797.

Pairwise Comparisons

Dependent Variable: Delayed_Posttest

(I) Approach	(J) Approach	Mean Difference (I-J)	Std. Error	Sig.[b]	95% Confidence Interval for Difference[b]	
					Lower Bound	Upper Bound
Blended Learning Approach	Conventional Classroom Approach	26.054*	3.468	.000	19.203	32.905
Conventional Classroom Approach	Blended Learning Approach	-26.054*	3.468	.000	-32.905	-19.203

Based on estimated marginal means

*. The mean difference is significant at the .05 level.

b. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

Univariate Tests

Dependent Variable: Delayed_Posttest

	Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Contrast	9551.138	1	9551.138	56.438	.000	.268
Error	26061.979	154	169.234			

The F tests the effect of Approach. This test is based on the linearly independent pairwise comparisons among the estimated marginal means.

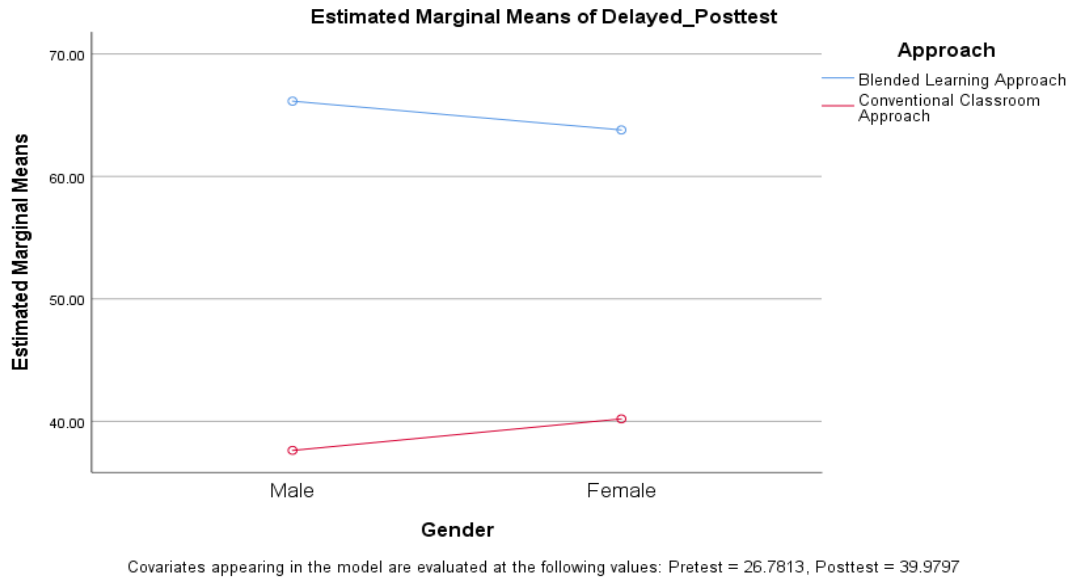
3. Gender * Approach

Dependent Variable: Delayed_Posttest

Gender	Approach	Mean	Std. Error	95% Confidence Interval	
				Lower Bound	Upper Bound
Male	Blended Learning Approach	66.144[a]	3.837	58.565	73.724
	Conventional Classroom Approach	37.629[a]	2.046	33.586	41.672
Female	Blended Learning Approach	63.793[a]	3.278	57.318	70.268
	Conventional Classroom Approach	40.201[a]	1.599	37.042	43.359

a. Covariates appearing in the model are evaluated at the following values: Pretest = 26.7813, Posttest = 39.9797.

Profile Plots



APPENDIX V – Extract showing analysis of Students Results in Financial Accounting from 2012/2013 to 2016/2017 Academic sessions

Year	OPTIONS	No. of Registered Students	A	B	C	D	E	F
2012/2013	Accountancy	6	0	0	0	1	4	1
	Management	22	0	0	7	8	6	1
	Marketing	5	0	0	1	1	2	1
	Office Management and Technology	3	0	0	0	0	3	0
2013/2014	Accountancy	28	0	0	7	8	11	2
	Management	98	0	13	26	15	35	9
	Marketing	7	0	0	1	3	2	1
	Office Management and Technology	2	0	0	1	0	1	0
2014/2015	Accountancy	64	9	11	22	12	10	0
	Management	157	2	14	44	51	43	3
	Marketing	36	1	0	5	9	19	2
	Office Management and Technology	17	0	1	7	3	6	0
2015/2016	Accountancy	71	9	23	21	11	4	3
	Management	270	11	61	84	73	39	2
	Marketing	36	0	3	12	11	9	1
	Office Management and Technology	25	0	14	7	0	3	1
2016/2017	Accountancy	40	9	5	11	4	8	3
	Management	179	5	27	62	32	40	13
	Marketing	16	0	0	3	4	7	2
	Office Management and Technology	18	1	1	2	1	7	6
		1100						

Source: Bupo, G. O., Oboh, A. O., & Nwosu, F. C. (2018).

Mean Performance of Business Education Students in Introduction to Financial Accounting from 2013 -2017

Year	Option	Mean	N	Std. Deviation	Minimum	Maximum
2013	Accountancy Option	39.00	6	8.438	23	48
	Management Option	46.45	22	7.689	22	62
	Marketing Option	35.40	5	20.194	0	50
	Office Management Technology option	41.33	3	2.309	40	44
	Total	43.25	36	10.546	0	62
2014	Accountancy Option	44.54	28	10.090	0	57
	Management Option	47.52	98	9.406	28	70
	Marketing Option	44.71	7	9.178	28	57
	Office Management Technology option	47.50	2	10.607	40	55
	Total	46.76	135	9.532	0	70
2015	Accountancy Option	54.73	64	10.128	40	80
	Management Option	48.89	157	7.137	33	75
	Marketing Option	43.64	36	9.604	0	70
	Office Management Technology option	48.12	17	6.214	40	63
	Total	49.51	274	8.841	0	80
2016	Accountancy Option	56.00	71	11.538	24	83
	Management Option	52.30	270	7.998	35	75
	Marketing Option	47.89	36	10.471	0	64
	Office Management Technology option	53.88	25	13.498	0	64
	Total	52.66	402	9.530	0	83
2017	Accountancy Option	50.07	40	16.686	0	85
	Management Option	49.06	179	10.391	0	72
	Marketing Option	39.38	16	15.958	0	55
	Office Management Technology option	35.33	18	21.682	0	76
	Total	47.63	253	13.556	0	85
Total	Accountancy Option	52.45	209	12.792	0	85
	Management Option	49.94	726	8.856	0	75
	Marketing Option	44.15	100	12.012	0	70
	Office Management Technology option	46.46	65	16.220	0	76
	Total	49.69	1100	10.767	0	85