Chapter One

Introduction

1.1 Background to the Study

Education is the conscious process of bringing out and nurturing the potential and uniqueness in an individual. Education is one of the paramount creativities. Education is the most powerful weapon to change the world, for self-enlightenment, and also serve as an important tool that helps to develop human capital[1]. It provides opportunities for better living and it is connected with an individual's well-being. Education is an essential practice that affords young adults' opportunity which lead to fruitful life in regards to their abilities and interests[2]. Education cannot be effective and impactful without considering the process of impacting knowledge (teaching), the resources that aids teaching, and learning process and achievements of the learners (academic learning outcomes).

Academic learning outcome is the output from a deliberate and planned activity that attempts to improve all elements of human life through information transmission, learning facilitation and acceleration, and system creation[3]. It is a relatively permanent change in a person's knowledge or behaviour due to experience which is influenced by the duration of the change, the structure and content of knowledge in memory or the behaviour of the learner and the cause of the change. Academic learning outcome is the transformative process of taking in information that when internalized and mixed with what a learner has experienced changes what a learner know and builds on what he/she do. This is a process that leads to change which occurs as a result of improved performance and future learning[4].

Academic learning outcome is the acquisition of skills that form the core of the general curriculum in schools as well as among office technology management students. Therefore, academic learning outcome can be classified into Learning (skill acquisition) and investment[5]. Learning aspect is related to the benefits derived by students, their families and the society as a whole which could be measured with the knowledge, and skills acquired by the learners. The investment component is a variety of inputs related to the enhancement of an individual or society's productive skills and future well-being(contents). In this study, knowledge, skills and contents of the investment (syllabus, infrastructure, and quality of teachers) will be used as measures to treat the study. Knowledge is the facts, and information acquired through experience or education, the theoretical or practical understanding of a subject. Skills is the learned ability to perform an action with determined results with good execution often within a given amount of time, energy or both while content can defined as the syllabus, that is used to impact knowledge on the learners, the infrastructure that the learners are exposed to, for better understanding of the theoretical parts of their knowledge and the quality of teachers or trainers that impact the knowledge.

Quality learning is now a serious issue in many nations that are increasing admission and in countries with limited resources. Attempt to achieve success in providing more access to basic education has brought about diminishing quality education[6]. At the World Education Forum held in Dakar, Senegal where standard academic learning outcome was given adequate priority, proof over the years indicated that to increase enrolment, efforts have to be complemented with attempts to increase the learning quality if learners will be encouraged to enroll in schools, continue and achieve significant learning results[7]. The

recent assessments of learning achievements in some countries have shown that a sizeable percentage of children are acquiring only a fraction of the knowledge and skills they are expected to master[8]. The strain between standard learning process and quantity of learners has categorized education in many developing nations of the world for about two decades till date, that academic learning outcome process has become an issue so serious to the extent that it is not seen as a choice but as a necessecity[9].

Standard learning process is the agent for progressive changes in the society and individuals[10]. The important thing that is worthy of note is that quality of inputs is diminishing in most countries of the world, though some of the global treaties, specified the necessity of providing education on the citizen's rights, gender awareness, sports and reproductive health, touched on educational quality as it is evident that learning process has continuously declined in most developing countries (Nigeria inclusive). Though different sectors in the society may have diverging views on the direction of education (knowledge, skills and contents of education) change or update. In this regard, it is perceived that government-owned Polytechnics in Lagos State has failed on its part in impacting quality education considering the fact that contents of study is not being updated, quality of staff recruited is on the decline and skills(practical) acquired by the students is not upgraded to meet up with ICT standard. As there has been societal change, the educational contents impacted on these students is supposed to have been updated which is not so in the state and this situation has jeopardized the process of lecture being delivered in this sector of the society, knowledge impartation is being driven with technology therefore the content given is still archaic and this is really affecting the

outcome of the students' performance which has made it difficult for them to compete with their colleagues in the society.

The formal education system of a nation is the principal institutional mechanism used for developing human skills and knowledge. Education is, therefore, viewed as an indispensable catalyst that strongly influences the development and economic fortunes of a nation and the quality of life of its people. In this context, nations, organizations and individuals spend huge sums on the provision and consumption of education for the citizen. In many developing countries formal education is the largest industry and greatest consumer of public revenues[12].

The priority of all countries, especially the developing ones, is to improve the quality of schools and the achievement of students since learning outcomes depend largely on the quality of education being offered. Higher quality education foster economic growth and development. Appropriate use of instructional resources is an important factor or component during the implementation of curriculum which helps the implementers to realize their goals and guide them in the teaching-learning process practices[13]. This factor is one of the most important ingredients that help the school systems to achieve their objectives and realization of good student academic performance in examinations. Education has been described as an important determinant of upward social mobility and eligibility for employment within the modern sector. Internationally, students'scores in examination have been accepted and used as a proxy of achievements[14]. The most important manifestation of schooling quality are literacy, measurable cognitive abilities and observable students' academic performance. In the context of this study,

instructional resources will be measured with learning objectives, availability and learning activities.

Leaning objectives are statements that define the expected goals of a curriculum, course, lesson or activity in terms of demonstrable skills or knowledge that will be acquired by a student as a result of instruction, availability is the systematic process of documenting and using empirical data on the knowledge, skill, attitude and beliefs to refine programs and improve learners' learning attitude while learning activities are the activities designed or deployed by the teacher to bring about, or create the conditions for learning.

However, for the realization of good performance in tertiary institutions like polytechnics, instructional resources must be put in place and used effectively to make the leaners to be aware of what they are being taught theoretically[11].Evidence from the World Bank and other international organizations on the quality of learning in the developing countries pointed out the importance of certain school inputs. Some of the inputs include teachers, classroom size and its environment, instructional materials such as textbooks, infrastructures like good laboratories, ICTs, standard workshop and other reading materials as well as school buildings and facilities. Government policy also entails allowing a broad-based participation in the provision of education with all the stakeholders taking responsibility for planning and implementation. In line with this policy direction is the decentralization of decision making and resource management to lower level structures within Ministry of Education. In addition, inadequate resources among others have led to poor services hence undesirable performance in government-owned polytechnics in Lagos state. The teacher resource is one of the most important inputs to education system. Being focus of classroom instructional activities and

curriculum delivery, teachers are critical determinants of the quality education offered[15]. Teachers' effectiveness at all levels of education has an implication on students' academic performance.

Another key factor that determines student academic learning outcome is quality teaching. Teaching is the concerted sharing of knowledge and experience which is usually organized within a discipline and more generally, the provision of stimulus to the psychological and intellectual growth of a person (learner) by another person (teacher) or instructional material. Academic learning also include advising efforts mentorship of not only students but also faculty colleagues, curriculum planning and development at the program level as well as course-by course efforts, with course design and development including face to face, hybrid and online learning environments. Teaching is intimate contact between a more mature personality and a less mature one which designed to further the education of the latter. It can be expressed as the arrangement and manipulation of a situation in which there are gaps or obstructions which an individual will seek to overcome and from which he will learn in the course of doing so. Teaching can also be defined as a system of actions intended to induce learning. It is a form of interpersonal influence aimed at changing the behaviour potential of another person.Teaching must be effective and efficient to have quality impact on learners so as to achieve the aim of impacting knowledge on learners.For this sole reason, the teaching compentence of this study will be treated with teaching effectiveness, teaching efficiency and quality of teaching.

Teaching effectiveness is the capability of producing a desired result or the ability to produce desired output. Teaching is deemed effective when it has intended or expected

outcome, or produces a deep, vivid impression, teaching efficiency is the state whereby a teacher in this context is able to accomplish the objective of delivering quality teaching while quality of teaching can simply be defined as the evaluation of instructional performance based upon indicators demonstrated in classroom settings. Teaching effectiveness appears over-worked because it has to do with the outcomes of learningwhether or not learning has taken place through observable change in the behaviour of learners. In the polytechnic system, it attracts a greater attention because of the main aim of practical application of knowledge and skills acquired. This is associated with "creative teaching of students as better learners based on "causal analysis of success and failure", Evaluation practices peculiar to technical education, teacher preparation as a means of achieving quality education, maintenance of quality and effectiveness in Vocational Technical education, improving the teaching effectiveness of vocational teachers through training and practice, effective classroom management and effective teaching. The import from these researchers is that effective and efficient teaching requires a large repertoire of skills and ability to put these skills to use in different teaching and training situations. Effective teachers improvise as no one approach or method suffices in all teaching/training-learning situations at all times and everywhere. This is because the students have different temperaments, backgrounds, levels of intellectual abilities as well as institutional variables. The task therefore of teaching effectively and efficiently is herculean. A scholar took a holistic view of effective teaching by putting researches on philosophical, sociological, psychological, scientific, counseling and a host of other perspectives of teaching which was done to nurture effective and efficient teachers at all levels of education[17]. Teaching has not been

effective and efficient in government-owned polytechnics and Lagos state which has reduced the quality of graduates being produced due to government negligence on the part of education sector which arises due to insufficient and ineffective teaching aids and personnel. However, in view of this, this study intend to investigate instructional resources and teaching on academic learning outcome of students in government-owned polytechnics, Lagos State. Nigeria.

1.2 Statement of the Problem

Academic learning outcome is important because people will need higher levels of education to tackle the technologically demanding occupations of the future and also parents who are involved in their child's education and family activities will see positive results in the areas of behaviour, academics and social interactions. The academic staff are involved intutoring and imparting knowledge on the learners (students). When academic staff are performing effectively and efficiently, the learning and teaching process will be enhanced and the quality of graduates will be higher. Instructional resources include everything from printed materials and educational animations such as textbooks, non-book resources while teaching competence means the skills and knowledge that enable a teacher to be successful.

To maximize students' learning, teachers must have expertise in a wide-ranging. However, preliminary investigation, close observation and literature review has revealed a decline in the academic learning outcome of the learners of government-owned polytechnics in Lagos State, Nigeria[18]. As a result of this, a. learners are not getting what they paid for adequately, b. graduate quality is on the decline and if care is not taken, c.

this will affect the institution further in the area of production, whereby the standard of graduates produced by the institutions will continue to decline which will eventually affect the society and the nation negatively because these graduates will be involved in the economic and developmental planning and implementations in the country when feeding the society with what is produced. Quality teaching and improved instructional resources has been identified to be influencing academic learning outcome of leaners in tertiary institutions, government-owned polytechnics in Lagos state inclusive.

The learners and teachers of these tertiary institutions seems not provided with up-to-date infrastructures and instructional resources for effective and quality teaching and learning. Likewise, teachers are also reluctant to teach well as they seem to teach theoretically even the practical aspects of their courses. Several studies have been concluded on instructional resources, teaching and academic learning but very few have been done in the area of instructional resources, teaching and academic learning outcome and specifically in government-owned polytechnics in Lagos State, Nigeria[18,29].

1.3 Aim and Objectives of the Study

The aim of this study was to investigate the influence of instructional resources, teaching competence on academic learning outcome of OTM students of government-owned polytechnics, Lagos State, Nigeria. The specific objectives of this study were to:

i. identify the level of academic learning outcome of OTM students in government-owned polytechnics, Lagos State, Nigeria.
ii. identify the level of instructional resources for academic learning outcome ingovernment-owned polytechnics, Lagos State, Nigeria;

iii. identify the level of teaching competence in government-owned polytechnics, Lagos State, Nigeria

iv. determine the influence of instructional resources on academic learning outcome of OTM students of government-owned polytechnics, Lagos State, Nigeria.

v. ascertain the influence of teaching competenceon academic learning outcome of OTM students ofgovernment-owned polytechnics, Lagos State, Nigeria;

vi. determine the combined influence of the instructional resources and teaching competenceon academic learning outcome of OTMstudents ofgovernment-owned polytechnics, Lagos State, Nigeria;

1.4 Research Questions

The following research questions were examined in this study:

i. What is the level of academic learning outcome of OTM students of government-owned polytechnics, Lagos State, Nigeria?

ii. What are the instructional resources available for academic learning outcome in government-owned polytechnics, Lagos State, Nigeria?

iii. What is the level of teaching competence in government-owned polytechnics, Lagos State, Nigeria?

1.5 Hypotheses

These hypotheses were tested in this study at 0.05 level of significance.

$H_0$1: There is no significant influence of instructional resources on academic learning otcome of OTM students of government-owned polytechnics, Lagos State, Nigeria.

$H_0$2: There is no significant influence of teaching competence on academic learning outcome of OTM students of government-owned polytechnics, Lagos State, Nigeria;

$H_0$3: There is no significant combined influence of use of instructional resources and teaching competence on academic learning outcome of OTM students of government-owned polytechnics, Lagos State, Nigeria.

1.6 Significance of the Study

The results of this study would benefit the following stakeholders: educational administrators, teachers, students, government and researchers. The findings from this study would help educational administrators in the educational system to formulate and implement educational programs and also make provision for instructional resources that would improve the quality of learning. The administrators would have basis for their decision more and equitable distribution of resources and creating policies that would improve teaching.

The result of this work would undoubtedly help the government to carry out public enlightenment and intensify efforts in the area of improving quality of teaching and learning.

Undoubtedly, the result of this work will be of great benefit to future researchers and scholars in education especially in the area of quality teaching-learning. This is because relevant reference materials and information would be made available to them.

1.7 Scope of the Study

The goal of this research is to investigate the influence of instructional resources and teaching on academic learning outcome of students of government-owned polytechnics, Lagos state, Nigeria. Academic learning outcome (dependent variable) was measured by knowledge, skills and attributes of learners, the first independent variable isinstructional resources which was measured by learning objectives, assessment and learning activities while the second independent variable isteaching which was measured by effectiveness, efficiency and quality of teaching. The geographical scope cover two government-owned polytechnics in Lagos state which are Yaba College of Technology (YABATECH) and Lagos State Polytechnic (LASPOTECH). The respondents are the students of the two government-owned polytechnics in Lagos State, Nigeria.

1.8 Limitation of the Study

The major issues that limited this study were retrieving information from respondents, who in this regard are lecturers and students of government-owned polytechnics in Lagos State. it was more difficult retrieving questionnaires from the students due to their careless attitude towards education. Also, the ingenuity of respondents who filled the questionnaires for accurate data analysis, time factor for retrieval of information, and the financial implications of carrying out this study limited the study.

1.9 Operational Definition of Terms

Academic Learning Outcome: This is a process whereby OTM students obtain information and skills by studying and being taught in academic areas that have been established and approved.

Knowledge: This is fact, information and skills acquired through experience or education, the theoretical or practical understanding of a course by OTM students.

Skills: It is the learned ability to perform an action with determined results with good execution often within a given amount of time, energy or both by OTM students.

Contents: This is the syllabus in which teachers are asked to focus on for imparting knowledge .

Instructional Resources: These are the content or information conveyed with a course by teachers.

Learning Objectives: It is a set of criteria that allow teachers to quantify their impact on student achievement.

Assessment: It is the methods or tools used by teachers to evaluate, measure and document OTM students' learning achievement.

Learning Activities: These are activities designed or deployed by the teacher to bring about or create the conditions for learning.

Teaching Competence: It is the concerted sharing of knowledge and experience by teachers.

Effectiveness: It is the degree to which teaching and learning activities is successful in producing a desired result.

Efficiency: It is a process of maximum productivity in learning with minimum wasted effort or expense by teachers.

Quality of Teaching: It is the process whereby teachers create a need to know in students so they genuinely engage in learning.

Polytechnic: A technical or vocational higher education institution that provides courses at the lower and higher national diploma level.

Endnotes

1. M.C. Daniel, & S.K. Anne, *Accessibility and Utilization of Information Communication Technology Infrastructure on Teaching and Learning of Engineering Courses in Polytechnics in Kenya*. **European Journal of Research and Reflection in Educational Sciences**, *9*(1) 2021, pp.57-54.

2. S. Krishnamurthy, *the Future of Business Education: A Commentary in the Shadow of the Covid-19 Pandemic*. **Journal of Business Research** 117 2020, pp.1-5.

3. J.O. Okegbemiro, *Effects of Blended and E-Learning on Academic Achievement of Business Education Students in Word Processing* (**Doctoral Dissertation, Kwara State University, Nigeria**), 2021.

4. M. Salisu, & U. Inuwa, *Factors Enhancing the Implementation of Business Education Curriculum in Colleges of Education in North Eastern Nigeria. ATBU* **Journal of Science, Technology and Education**, *7*(4) 2020, pp.300-308.

5. M.M. Buba, & H. Hamman, *An Appraisal of Availability of Human and Material Resources for Teaching and Learning Office Technology and Management Courses in Polytechnics in Adamawa State, Nigeria*. **Nigerian Journal of Business Education (NIGJBED)**, *7*(1) 2020, pp.50-63.

6. N. O. Emesini, *Electronic-Learning as an Innovation in Teaching and Learning in Nigerian Universities.* **A paper presented at the 22nd Annual Conference of the Curriculum Organization of Nigeria held at Cairo on September**, 2019, pp.2-4.

7. S.O. Anie, *The Economic and Social Benefits of ICT Policies in Nigeria*. **Library Philosophy and Practice**, (*1*) 2011, pp.125.

8. N.C. Emeasoba, *An Evaluation of Equipment for the Teaching and Learning of Business Studies in Public Junior Secondary Schools in Enugu State*. **International Journal of Vocational and Technical Education**, *10*(7) 2018, pp.54-60.

9. L.F. Ademiluyi, *An Assessment of the Continued Relevance of the Secretarial Profession in Era Age of Office Technology.* **Nigerian Journal of Business Education (NIGJBED)**, *3*(1) 2018, pp.47-56.

10. F.I. Ogolo, & A.O. Agbagbue, *Business Education Administrators' Information Management Competencies and Administrative Roles Performance in Rivers State Tertiary Institutions*. **Nigerian Journal of Business Education (NIGJBED),** *7*(1) 2020, pp.258-270.

11. A. Bello & A. R. Audu, *Sociological Rethinking of University Education System: Focus on Rescue, Academic Integrity and Nigeria as a Nation*, **Kano Journal of Educational Psychology (KaJEP)**, 2 (1) 2020, pp. 127-142

12. G.O. Fadare, *Evaluation in Business Education: Challenges of Mastery of Shorthand Skills*. **Nigerian Journal of Business Education (NIGJBED)**, *7*(2) 2020, pp.361-374.

13. M.V. Arhueremu, & M.N.M. Naeleen, *Adequacy and Functionality of Information and Communication Technology Resources in Business Education Programme of Colleges of Education in Delta State*. **International Scholars Journal of Arts and Social Science Research,** *3*(2) 2020, pp.32-39.

14. P.C. Agwu, & G.E. Osuji, *Extent of Availability and Accessibility of Instructional Media for Teaching and Learning Government in Senior Secondary Schools in Enugu Education Zone, Enugu State, Nigeria*. **Advance Journal of Education and Social Sciences**, *6*(4) 2021, pp.23-7.

15. U.C. Okolie, E.N. Ogwu, C.U. Osuji, F.N. Ogba, P.A. Igwe, & S.O. Obih, *A Critical Perspective on TVET Teachers' Pedagogical Practices: Insights into the Guiding Pedagogical Principles in Practice.* **Journal of Vocational Education & Training**, 2021 pp.1-20.

16. E. K. Umunadi, *Provision of Equipment and Facilities in Vocation and Technical Education for Improving Carrying Capacity of Nigeria's Tertiary Institutions*. **African Society For Scientific Research (ASSR)** Retrieved from http://www.hrmars.com/admin/pics/293pdf. 2018.

17. G.N. Osakwe, *Assessing the Level of Availability and Utilization of Materials for Teaching Biology in Private and Public Secondary Schools in Delta State ATBU.* **Journal of Science, Technology and Education**, *8*(3) 2020, pp.319-327.

18. G.O. Fadare, *Evaluation in Business Education: Challenges of Mastery of Shorthand Skills*. **Nigerian Journal of Business Education (NIGJBED)**, *7*(2) 2020, pp.361-374.

19. M. O. Ugwuanyi, & M. E. Eze, *An Assessment of the Educational Resources Available for Implementing the Mandates of Secretary Studies Programme in Nigerian Polytechnics*, 8(4) 2018, pp.118-128

Chapter Two

Review of Related Literature

The purpose of this chapter is to review the current literature on instructional materials use and teaching on student academic learning, with an emphasis on areas of convergence and divergence. To review the literature, the following subheadings are used:

2.1 Conceptual Review

2.1.1 Concept of academic learning

2.1.2 Concept of instructional resources

2.1.3 Concept of Teaching Competence

2.2 Theoretical Review & Framework

2.2.1 Ramsden Theories of Teaching in tertiary institutions

2.2.2 Sociocultural Theory of Teaching, Learning, and Development

2.3 Review of Empirical Studies

2.3.1 Instructional resources and academic learning

2.3.2 Teaching and Academic learning

2.1 Conceptual Review

2.1.1 Concept of Academic Learning

As teachers we tend to think that teaching is all about teachers and our role. In fact the most important aspects of the educational process are the students and what they learn.' This leads us to consider what we mean by 'learning'[1]. As you read the educational literature and, more specifically, educational psychology, you find many differences in theories and definitions. Learning is about a change: the change brought about by developing a new skill, understanding a scientific law, changing an attitude[2]. The change is not merely incidental or natural in the way that our appearance changes as we get older. Learning is a relatively permanent change, usually brought about intentionally. When we attend a course, search through a book, or read a discussion paper, we set out to learn[3]. Learning is a key process and is necessary for all educational process. It pervades everything we do and think. Learning plays an important role in the languages we speak, our customs and beliefs. It involves ways of doing things in an individual attempt to overcome obstacles or to adjust to new situations. It is a progressive change in behavior

as individual reacts to a situation in an effort to adapt his behavior effectively to the demands made upon him[4].

Learning is acquisition of knowledge, habits and attitudes. It involves new ways of doing things in order to overcome obstacles or to adjust to new situations. It enables the person to satisfy interests to attain goals[5]. Learning is the acquisition of new behavior or the strengthening or weakening of old behavior as a result of experience. Learning is any activity that can be called learning as far as it develops the individual (in any aspect, good or bad) and makes his behavior and experiences different from what would otherwise have been". Thus, Learning may be defined as any relatively permanent change in behavior[6]. Learning may be defined as the acquisition of knowledge attitudes, skills and ways of thinking. Learning is the permanent change in behavior for better or worse which results or occurs as a result of practice and experience[7]. Above definitions have three important elements: Learning is a change in behavior for better or worse, It is a change that takes place through practice and experience. Before it can be called learning, the change must be relatively permanent i.e. it must last for a long time. Exactly how long cannot he specified, but we usually think of learning lasting for days, months, years in contrast to temporary, behavioral effects. Thus learning is a complex process. It is a process by which all organisms, as a result of its interaction in a situation acquires a new mode of behavior which tends to persist and affect his behavior in the future. Thus learning takes place when an organism reacts to a situation. It consists of certain changes in behavior or adjustments and this type of behavior is utilized to some degree in other situations[8].

Learning is a process which is continuous and it never stops at any phase. It is a lifelong process. Hence learning starts from birth and ends only with the death of an individual. Hence we can say that learning proceeds from womb to tomb. E.g. when a child takes birth he first learns to cry for food, and at each phase of life at every step the child learns to walk, run, talk, write alphabets etc. Learning is the process which leads to mental growth of an individual. The growth takes place along with the learning. Basically, when learning takes place the individual learns to adjust and adapt with the environment. Learning is purposeful. Though learning takes place at every place and at every moment not all the learning areuseful. Hence those learning which are useful and meaningful are learnt. Learning is active process. Learning by doing is the best part of learning e.g. it becomes easy for the science students to learn the concepts in science when they perform practical. Learning takes place individually and as well as socially e.g. When a seminar or workshop is conducted, then all the members of the group learn to share their thoughts, each one learns something new from the other individual. Last but not the least learning brings about the change in the behavior in individual e.g. a child is always taught values and manners, and due to this teachings, a child learns to respect their elders and teachers, learns to speak politely etc, which bring about the change in his behavior as the child grows[9].

Learning is a process and knowing the various aspects of learning helps the teacher in ensuring andmaking the learning effective. i. Need: Learning takes place as a result of response to some stimulation. Unless the individual has some unsatisfied need or desire which causes him to act in an attempt to satisfy the need, no learning will take place. When the need of the learner is strong, the learner sets definite goals for achievement of

his needs and this makes learning more concrete. E.g. A student, who wants to score a good grade, starts working right from the beginning. Need should be made by the teacher by creating interest. The teacher should also help the child in setting attainable goals for himself. ii. Readiness: Not every child is ready to learn at a particular time. The child needs physical and mental maturity in order to learn. There should be mental and physical willingness to learn. We tend to pay less attention to this type of maturity. Many a time, we impose learning situations on a child before he is ready. iii.Situation: Learning depends on the situation provided at school and at home. In school, the learning environment should be conducive or congenial. The teacher's attitude should be encouraging and the teacher should use suitable teaching methods and techniques. The type of situation provided by the teacher contributes towards the speed and quality of learning. E.g. Special methods can be provided depending upon the age of the learner. iv. Interaction: The learner with is needs and goals learns to interact in a learning situation. Interaction is a process of responding to a situation and getting a feedback from it. Interaction may be in the form of observations, emotionalreactions, verbal reactions or physical reactions.

Teacher should find ways and means to involve the students in the learning activity / process. v. Exploration of the situation: Exploration is the way the learner explores / interprets the stimuli in the environment. The correct responses cannot be determined at once. They require to be thought over; i.e. the whole situation needs to be explored. After trial and error, the learner comes to the right solution. vi. Perception: Perception is to give some meaning to what you are seeing. Sensing + Meaning = Perception. Each one perceives the environment differently. As a teacher, one wants the class to perceive

uniformly, so the teacher should use visual aids, diagrams, etc. Because of the individual differences among the students, each student perceives whatever is taught, differently, so teacher should cater to the need of every individual. vii. Response: Response is the actual outcome of the learner. It is the outcome of interaction, exploration and perception of the situation. He may give a trial by direct attack to overcome the barrier in his way. viii. Reinforcement: If the response is successful in action, in satisfying the need, that response is reinforced and on subsequent occasions the individual will tend to repeat it. ix. Integration: Learning implies the selection and organization of correct responses. The last step of the learning process consists in integrating the successful responses of the individual's previous learning, so that it becomes part of a new functional whole[10,11].

Learning could be affected by numerous factors; attention is the major aspect involved in all the mental activities. We must attend before we know, feel or act. It is a characteristic of conscious life. It is the concentration of consciousness upon one object rather than another[12]. 'Attention is a process of getting an object of thought clearly before the mind.' It is the concentration of conscience upon one object rather than upon another. It is an essential element in all creative activities[13]. Other learning can take place without planning, for example by experience. Generally, with all learning there is an element within us of wishing to remember and understand why something happens and to do it better next time. When we focus our attention on any object, other things lie in the margin of consciousness. For example, when we are sitting in a train and reading a book, we are so engrossed in reading that the movements of the wheels of the train, the noise of the people around us or the sounds of the hawkers etc. does not disturb us because they lie in the margin of consciousness while reading was in the focus of consciousness.

Objects are continually passing from the margin to the focus and vice versa. What was clear at one moment is dim the next and what was but dimly noticed, becomes distinct. The marginal experiences are at any moment ready to enter into consciousness. For example, we can put aside the book which we were reading and listen to the sound of the wheels of the moving train if we want to. Thus, the mind selects out those elements which are to form the focus. So, attention is selective. Because of this selectivity, a person can get himself absorbed in a task. The so-called absent-minded professor is not really absent minded, but on the other hand he is so engrossed with some problem of interest, that all other details of life are forgotten[14].

The psychological problem is to find out why we are likely to attend to something more than others and what kind of things are likely to catch and hold attention. There are many stimuli competing with each other and we must know what factors control our attentions. Factors that control our attention are: Objective / External Factors: those conditions affecting attention which is concerned with the environment; Intensity: a strong stimulus is more likely to be noticed than a weak one, like a loud noise to a whisper or a bright light to a dull lamp; Size: a large object will draw attention more readily than a small one. Writing should be of appropriate size on the black board. A big advertisement or a tall building easily attracts our attention; Repetition: very often in the classroom, the teacher respects the content or makes the child repeat by doing drill work. This helps in attracting attention. e.g. the alarm bell of a clock would go unnoticed if it strikes only once; Change: to attract attention, change should not be a gradual one but a sudden one. A speaker modulates his voice to attract the attention of his audience; Movement: a moving object readily catches attention. A child's attention is always attracted by a moving toy rather

than by a steady toy. In a classroom, showing a film or T.V. helps in captivating the attention of the students; Contrast: anything that is different from its surroundings is likely to stand out and catch the eye. e.g. Use of colored chalks for writing / underlining on the black board; Novelty: anything that is new, novel as well as strange attracts attention. The teacher should make use of novel ideas, sides, films & videos. Incorporation of new technology and new methods of teaching helps to capture attention; Variety: variety means using various methodologies to retain student's attention; Mysteriousness: it is evident that when an element of mystery enters normal or common place behavior, attention is directed towards it at once[15].

Subjective or Internal Factors: Those conditions of attention which are within the individual are called subjective factors. They are: Motives – like hunger, thirst, sex, anger etc, Interest, Mindset or Attitude, Moods. Interest is the most important factor because we attend to those objects in which we are interested. Without interest, teacher fails to arouse attention and sustain it. It is defined as "Latent Attention" and attention as "Interest in Action"[16].

Attention can be divided into groups namely Non- Voluntary or Non- Volitional and Voluntary or Volitional.When we attend naturally, easily, spontaneously and without effort attention is said to be involuntary or non-volitional e.g. when there is a loud sound we hear it without effort. This stimulus forces itself upon us and we pay attention. The quality of intensity attracts attention. This type of attention is determined by instinct and therefore it is called enforced, involuntary or non-volitional attention. Attention which has been aroused by the sentiments is described as spontaneous non-volitional attention[17]. This is due to the frequency of sentiment or interest. In spontaneous attention we attend

easily to the stimuli, without any effort. The teacher must build up in his/herstudents'sentiments of love for the subject of study. To do this in the beginning the teacher will have to turn to the instincts like self-assertion, constructiveness, acquisition (to possess) and later turn to the spontaneous type of attention though instinct and hobbies[18].

Voluntary or Volitional Attention: There are many situations in which we attend to an object only after making an effort. This type of attention is sustained, active and forced and can be divided into two types Implicit and Explicit. Certain attention is imitated by a single act of will which can be sustained for a long time like swearing of an oath. This type of attention in called implicit volitionalattention. Implicit is by a simple act of will. We have the next type of explicitly volitional attention which requires many repeated acts of will and this is known as explicit volitional or voluntary attention. e.g. learner playing around or coming late to the class when the teacher is already in the class. For instance, a learner needs to be reminded again and again about his examinations, so that he can make up his mind and attend to his duties. In classroom teaching, attention in the beginning is volitional, but by linking the subject matter to instinct or sentiment, attention becomes spontaneous and thus non-volitional. An infant has to pay volitional attentions in actions like walking or pulling on a dress, but once these habits are formed, attention becomes non-volitional[19].

Academic learning outcome by students has always been a subject of interest to every educational institution. Whereas there is a consensus that schools should play a major role in this process, there seems to be disagreement about what exactly that role should be. While some believe that the primary focus of schools should be the academic preparation

of students[20], others however believe that efforts of schools should be integrated with other social institutions such as family and community towards educating children[21]. In fact, heads of educational institution, teachers and parents are primarily responsible for students'academic learning outcome and that schools should efficiently and effectively organize themselves towards this task[22]. Researchers over the years have used a variety of ways to measure academic learning outcome and these include report card grades, grade point averages, standardized test scores, teacher ratings, other cognitive test scores, grade retention and dropout rates[23]. Thus, students' academic success is typically assessed by the use of teacher ratings, tests, and exams. In fact, student academic performance is more likely to be experiencedand evidenced when students feel personally validated and believe that their effort matters and can influence or control the prospects of their academic success. In reality, these inspire them to develop a sense of purpose and perceive the school experience as being personally relevant[24].

Granting that the importance of academic learning outcome is rarely questioned, however the factors that influence and mediate it have been elusive[25]. In reality, amongst the various predictors of academic learning, there are likely to be some interactions between each other, and therefore the effect of one factor on the academic learning outcome may be indirectly reflected through others. Academic instruction is arguably the primary business of education. To this end, schools are expected to influence students' learning, socialisation, and even vocational preparedness. Despite the attention paid to a broad definition of educational outcomes, however, academic performance remains central. Students' academic performance is a term that appears frequently married in higher education discourse. Academic learning outcome is a multidimensional construct

composed of the skills, attitudes, and behaviors of a learner that contribute to academic success in the classroom[26]. It is a satisfactory and superior level of learning of students as they progress through and complete their school experience[27]. The implication of this definition is underscored by research which repeatedly demonstrates that the vast majority of students who withdraw from school do so for no reason other than academic failure[28].

Although the importance of academic achievement is rarely questioned, reaching unanimity regarding its measurement has been elusive. The measurement of students' success in academic learning outcome continues to be a controversial topic among policymakers, measurement experts, and educators[29]. Researchers have used a variety of ways to measure academic achievement such as report card grades, grade point averages, standardized test scores, teacher ratings, other cognitive test scores, grade retention, and dropout rates[30]. The complexity of the academic learning outcome starts from its conceptualization. Sometimes it is known as school readiness, academic achievement and school performance, but generally the difference in concepts are only explained by semantics as they are used as synonyms. Conventionally, it has been agreed that academic learning outcome should be used in university populations and school performance in regular and alternative basic education populations. We will point out just a few because there is a diversity of definitions. Several authors agree that academic learning outcome is the result of learning, prompted by the teaching activity by the teacher and produced by the student. From a humanistic approach, academic learning outcome is "the product given by the students and it is usually expressed through school grades". Fifteen years ago, academic learningwas referred to as a measure of the

indicative and responsive abilities that express, in an estimated way, what a person has learned as a result of a process of education or training[31].

Academic learning outcome involves meeting goals, achievements and objectives set in the program or course that a student attends. These are expressed through grades which are the result of an assessment that involves passing or not certain tests, subjects or courses. Academic learning outcome is the level of knowledge shown in an area or subject compared to the norm, and it is generally measured using the grade point average.The purpose of the school or academic is to achieve an educational goal, learning. In this regard there are several components of the complex unit called performance. They are learning processes promoted by the school that involve the transformation of a given state, into a new state, and they are achieved with the integrity in a different unit with cognitive and structural elements. Performance varies according to circumstances, organic and environmental conditions that determine skills and experiences. The academic performance involves factors such as the intellectual level, personality, motivation, skills, interests, study habits, self-esteem or the teacher-student relationship. When a gap between the academic performance and the students' expected performance occur, it is referred to as a diverging performance. An unsatisfactory academic performance is the one that is below the expected performance. Sometimes it can be related to teaching methods[32].

Parents are the most immediate relation of a child. Educated parents better understand the educational needs and their children's aptitude. They, thus help their children in their early education which affects their proficiency in their relative area of knowledge. Parents' education or academic background definitely contributes immensely toward the

academic life of children. Parents' level of education is the most important factor affecting students' academic achievement[33]. Parents' educational background influence the academic achievement of students. This, according to him, is because the parents would be in a good position to act as second teachers to their children; and even guide and counsel them on the best way to perform well in education and provide the necessary materials needed by them[34].

Children who come from an educated homes would like to follow the steps of their family and by this, work actively on their studies[35]. A child from a well-educated family with high socio-economic status is more likely to perform better than a child from an illiterate family[36]. This he suggests apparently because children from an educated family are seen to have lots of support such as a decent and good environment for academic work, parental support and guidance, enough textual and academic materials and decent feeding. Virtually in all nations, children of parents high on the educational, occupation and social scale have far better chance of getting into good secondary schools and from there into the best colleges and universities than equally bright children of ordinary workers or farmers[37]. In fact, the most important factor associated with the educational achievement of children is not race, ethnicity or immigrant status; instead, the most critical factor is parents' education[38].

The ability to set goals and pursue educational goals is sometimes referred to by educators as student's academic ambition[39]. Ambitions can be linked to the seeking of success and the avoidance of failure[40]. Ambition is the persistent and generalized striving for success, attainment, and accomplishment[41]. In short, ambition is about attaining rather than achieving, though of course there is a certain relationship between the two[42].

Ambition is thus discussed by numerous philosophers, with those seeing it as virtuous apparently outweighing those who perceive it as vicious[43]. Students who choose to set difficult goals for themselves tend to become task oriented, with a sense of purpose for their lives[44]. Certainly, academic ambition can influence students' learning, preparation for life choices, academic motivation and achievement. Academic ambitions is the "student's ability to identify and set goals for the future, while being inspired in the present to work toward those goals[45]. Ambition thus, represents the perception that an activity is important as a means to future goals. It reflects individuals' perceptions that it is both possible and desirable to think in future terms and to plan for the future[46].

Individuals' ambitions are considered important because they might influence key choices, and outcomes such as educational achievement[47]. In fact, many studies suggest that young people with higher educational ambitions have greater motivation and higher educational attainment than their peers[48]. Undeniably, the relationship between educational outcomes and academic ambitions seems to be a complex one. Ambition thus, can both be a predictor of educational achievement and an outcome of it, andmight be influenced by self-efficacy, personal traits, experiences and mediating family factors, or linked to beliefs about ability[49].

It is without doubt that the academic achievement of students depends on number of basic factors of which effort is paramount[50]. Effort refers to the overall amount of energy expended in the process of studying whereas persistence, also known as effort management or effort regulation means the continuous investment of energy in learning even when obstacles are encountered[51,52]. School effort is the amount of time and energy that students expend in meeting the formal academic requirements established by their

teachers and/or school. He identified three different types of school effort, thus rule oriented effort (showing up in and behaving in class), procedural effort (meeting specific class demands such as completing assignments on time) and intellectual effort (critically thinking about and understanding the curriculum)[53]. Refreshingly, when students attribute their academic success to effort/persistence or receive feedback that attributes their success to effort, they develop a higher self-efficacy and expectations for future skill development[54]. Indeed, a number of researchers have in the context of achievement goals explored the contribution of effort and persistence on students' academic performance[55]. Research evidence shows that effort makes a positive contribution to the prediction of academic performance outcomes[56]. In truth, in analysis, effort is found to relate positively to academic performance[57].

Approaches in the study of learning have been grouped around two orientations: Quantitative (behavioral and cognitive) and qualitative. Within the qualitative orientation there are two research lines: Styles and learning approaches. The latter are within the paradigm of information processing, but with a different phenomenological approach. Learning approaches have a predisposing character or orientation to learn in a particular way. This gives them a similarity with learning styles which are "specific and relatively stable ways to process information." Learning styles are predispositions, relatively general and constant, responding to a subject's trend. They derive from the willingness of an individual to adopt the same strategy in different situations, regardless of the specific demands of the task. However, the approaches are more flexible than the styles since they modulate according to the context and needs using the necessary strategies to achieve the intended objectives, which are more specific or particular[58].

The learning approaches is the key determinants of academic performance. A learning approach describes the combination of an intention and a strategy when addressing a specific task, at a particular time. Thus, when there is a surface approach, there is an intention of getting high grades applying appropriate memorization techniques, then the student will have an adequate performance. As for the deep approach it involves a self-determined motivation, which involves effort and pleasure for what is been studied. In this regard the student has a high probability of obtaining a high performance in his/her studies. It is important to remember that learning approaches are not something stable in the student, that is, they are not an immutable personal characteristic. On the contrary, a student is able to adopt either learning approach (surface or deep) depending on the academic task. In other words, learning approaches are based on both the students' individual characteristics and the teaching context. For this reason, "a learning approach describes the nature of the relationship between student, context and task"[59].

Deep approach; It is based on an intrinsic motivation the student has an interest on the subject and learning has personal significance for him. Strategies are used to achieve understanding and to satisfy a personal curiosity. Regarding processes, the student interacts with the learning content, relates ideas with prior knowledge and experience, uses organizing principles to integrate ideas, relates evidence to findings and examines the logic of the arguments used. Regarding results, a deep level of understanding is obtained by integrating well the fundamental principles and facts. Students with a deep approach usually achieve a good academic performance[60]. However, an exclusively deep approach may not be as good for attainment as the predominantly deep approach. Students using the first one defined their own goals and try to achieve them their way[61].

If it turns out that these are not academic goals, it gives the impression that the student is doing it wrong in the "official" sense of the term, no matter how satisfying it can be learning from his/her point of view.

Surface approach; It is based on an extrinsic motivation; the student tries to "achieve something" and avoid failure. The student's intent is to comply with the evaluation requirements by reproduction. Strategies are used in rote learning. The processes are oriented to rote learning by repetition, so that facts and ideas are barely interrelated. The student accepts ideas and information passively and concentrates only on a test or exam. The result is a rote memorization, without recognizing principles or guidelines, and a zero or superficial understanding level. These students have a poor performance with respect to the objectives and they think about leaving school early. Therefore learning approaches are learning processes performed by a student when undertaking an academic task. These processes come from both his/her perceptions of the task as well as from the characteristics of the individual[62].

This concept has both situational and personal elements[63]. When a student faces a task he formulates two fundamental questions: what do I get from this? And how do I get it? The first question refers to goals and motives, and the second question refers to strategies and resources to achieve those goals[64]. Thus, learning approaches are based on motives and use certain strategies.

In this context, teaching performance changes based on the learning results to be achieved. It is also necessary to spend more time preparing materials, designing activities, helping students to actively build knowledge and being aware of their ways of learning.

This involves giving them control of their own learning, preparing questions to promote discussions, planning activities that require the students' active participation[65].

2.1.2 Instructional Resources

Instructional materials serve as a channel between the teacher and the students in delivering instructions[66]. They may also serve as the motivation on the teaching-learning process. It is used to get the attention of the students and eliminate boredom. Instructional materials are highly important for teaching; especially for inexperienced teachers. Teachers rely on instructional materials in every aspect of teaching[67]. They need material for background information on the subject they are teaching. Young teachers usually have not built upon their expertise whenever they enter into the field. Teachers often use instructional materials for lesson planning. These materials are also needed by the teachers to assess the knowledge of their students. Teachers often assess students by assigning tasks, creating projects, and administering exams. Instructional materials are essential for all of these activities. Teaching without instructional materials will certainly result to poor academic learning outcome in any course[68]. A professionally qualified teacher no matter how well trained would be unable to put his ideas into practice if the institution setting lacks the equipment and materials necessary for him or her to translate his competence into reality. Instructional materials media are system components that may be used as part of instructional process which are used to disseminate informative message and ideas or which make possible communication in the teaching-learning process[69].

Experience over the years has shown that teachers have been depending on excessive use of words to express, convey ideas or facts in the teaching-learning process[70]. This process is termed the 'chalk-talk' method. Today advances in technology have made it possible to produce materials and devices that could be used to minimize the teachers' talking and at the same time, make the message clearer, more interesting and easier for the learner to assimilate. Graphics communicate facts and ideas clearly through combination of drawings, words and pictures[71]. The use of graphics in teaching creates definitiveness to the materials being studied. They help to visualize the whole concepts learned and their relationships with one another. Hands-on instructional materials show, rather than tell, which increase information retention. A truism often heard in teaching is that if you have not learnt, I have not taught. A reasonable conclusion then is that the importance of instructional materials in teaching and learning is most efficient illustrated through student achievement result. Students come to the classroom with many misconceptions to correct for proper scientific learning to progress[72].

Schools should base instructional material on fundamental scientific concepts and principles, which help to align students understanding with current knowledge and teach them to monitor and control their own thoughts process to facilitate learning. When a course is integrated with other inter-disciplinary courses, the teacher should give careful attention to designing" a logical and coherent structure" for ensuring that they clearly communicate and ensure contextual understanding of embedded scientific concepts[73]. Such explorations encourage students to engage in learning, which promote problem-solving thoughts patterns and correct students' mistaken notion of education and the world. Teachers who take time to provide instructional materials and option that take into

consideration or account the different ways students receive and express knowledge are more likely to see their students' success. Institutions should provide a variety of audio, visual and print input methods depending on students need, allow students the flexibility to communicate their true learning[74]. Students or teachers who must closely follow their 5Es instructional model; engage, explore, explain, elaborate and evaluate achieve a high rate of success. There is a statistical link between superior student achievements and basic or extensive of strategies and learning sequences consistent with the 5Es". Research study has shown that where instructional materials are used, the learning environments are highly stimulating and the students appear to take greater interest in learning[75].

Availability of instructional resources indicates strength and productivity of institutions. In the aspect of this availability of instructional resources for a successful school, implies people's use of equipment on their day-to-day upgrade[76]. It also includes avoidance of over-work and inadequate service in the case of machines. In other words, institutions with available instructional resources all things being equal will be more productive than, the one with low instructional resources. In a school system, success can only be recorded in a situation whereby instructional resources are available in commensurate measures with students' population[77]. A school that has available instructional resources, teaching and learning shall be easier for both teachers and students. At the end, the school's result shall be good, which is the aim of any educational system. Many scholars, researchers, administrators, and educational planners, have confirmed that instructional resources in Nigerian higher institutions are inadequate and the few available ones are being over utilized due to the astronomical increase in school enrolment[79]. Unavailability of instructional resources was the major problem facing our educational institutions in

Nigeria. The tertiary institution resources are grossly inadequate to match the student population[80].

The adequacy of an object means a condition of being enough in quantity and good enough in quality for a particular purpose or need. Adequate facilities and equipment constitute a strategic factor in organizational functioning[81]. This is because they determine to a very large extent, the smooth functioning of any educational programme. He further stated that their availability and adequacy influence efficiency and high productivity in teaching. There must be sufficient motivation in form of attractive facilities, supplies and equipment for schools in Colleges of Education. Where these instructional resources are lacking, the effective functioning of the programme willbe hindered[83]. Adequacy is a satisfactory condition of resources in an organization. He added that adequacy of facilities; equipment and supplies in colleges promote effective teaching and learning activities in the college while their inadequacy affects the academic learning outcome negatively. Adequacy of instructional resources has been positively correlated to good performance in examinations while poor performance has been blamed on inadequacies.

Where equipment and facilities are lacking, teaching may be poorly executed. Considering the relevance of instructional resources and the need for its adequacy, the National Commission for Colleges of Education (NCCE), which is the government regulatory and supervisory agency for the Colleges of Education in Nigeria stipulates the minimum standards of course offering and resources input that needs to be available for teaching and learning in Colleges of Education[84]. The NCCE classified resources in Colleges of Education into the following: personnel (human resources), equipment and

supplies (instructional resources), facilities (physical resource). Provision of all these resources aid and facilitate effective school teaching and learning in colleges of education and for quality assurance in teacher education. Instructional resources is the communication processes that store and distribute human experience or knowledge, therefore they are the totality of the information carrying devices such as computer, typewriters, photocopier, scanner, machines amongst others[85]. Instructional materials include books, audio-visual, software and hardware of educational technology. The availability, adequacy and relevance of instructional materials in classrooms can influence quality teaching, which can have positive effect on students' learning and academic performance[86]. Linking instructional resources to students' academic performance serve as a critical factor in the provision of quality education. Efficiency and high productivity in teaching and learning transaction start from the access to quality and adequate instructional materials, and these should be prepared well before the class interaction[87].

Instructional resources are teachers' strategic factor in organizing and providing education. This is so because they help to elaborate a concept that the teacher could not, without an instructional material[88]. This allows students to learn more comfortably therefore influencing positively their academic performance. Writing on the role of instructional materials in teaching and learning, science education programmes cannot be taught effectively without the existence of equipment for teaching. This is because instructional materials help those who learn to develop problem-solving skills and scientific attitudes. Elaborating further on the same point, emphasis was made that when instructional materials are provided to meet relative needs of teaching process, students

will have access to the reference materials mentioned by the teacher, and also each student will be able to learn at his or her own pace[89]. The overall result is that students will perform much better. Instructional materials are considered important in teaching and learning in all levels of education because textbooks and other resource materials are basic tools. Absence or inadequacy makes teachers handle courses in an abstract manner, portraying it as dry and non-exciting. For example, textbooks, charts, maps, audio-visual and electronic instructional materials such as radio, tape recorder, television and video tape recorder contribute much in making learning more interesting[90].

The importance of instructional materials is also evident in the performance of students; schools, whose teachers use more instructional resourcesperform better than schools, whose teachers do not use instructional materials[91]. This corroborated the study that private institutions performed better than public institutions because students and teachers are provided with sufficient and quality teaching and learning resources. From this importance, institutions at all levels of education have been advised to have quality and adequate instructional facilities to raise academic performance of their students[92]. The advice emanated from the fact that instructional facilities have a potent factor to qualitative education. The dictum is that "teaching is inseparable from learning but learning is separable from teaching." This means that teachers do the teaching to make the students learn, but with quality and adequate instructional facilities, students can learn without the teachers. Learning can occur through one's interaction with one's environment. Environment here refers to instructional facilities that are available to facilitate students learning outcome[93]. Instructional materials such as the size of classroom, sitting position and arrangement, availability of tables, chairs, chalkboards,

shelves on which instruments for practical are displayed areimportant in the teaching transaction.

Availability of instructional materials can work best if other conditions are met such as the quality of classroom. It should be added that the quality of teachers to use these resources are equally important. "Without instructional aids, any form of teaching in schools is bound to fail"[94]. This implies that teaching effectively requires the teacher to have relevant, appropriate, and adequate instructional aids. Textbooks are useful in the selection of content of a given curriculum. Better selection of content therefore depends on the availability of instructional materials of which books are part. The better the content, the quality the teaching and performance. Instructional materials help the teacher to have good communication of his/her ideas to the class. The use of instructional aids reduces the teachers' verbalism tendencies because much of what will be taught will be viewed by learners on maps, globes, charts and textbooks which the teacher prepares for his course. This also implies that the availability of instructional aids encourages learner's participation and make the teaching and learning, learner centered[95].

Experiments on various theories and constant attempts of tests in different subjects build confidence and enables learners to master what they are taught. Proper mastery together with confidence provides grounds for correct unwavering of learning tasks thus leading to good performance for which confidence, practice of what is taught lacks and concepts learnt are easily forgotten. Instructional aids enable learners to analyze, synthesize and consequently understand fully what they are taught[96]. This further facilitates easy and proper recall of what is taught leading to accurate answering in class assignment and exams. The vitality of teaching in various academic disciplines demands a wider use of

instructional aids and constant practice more especially through experiments. This fascinates and motivates learners and promotes further understanding of general concepts that are taught. The use of instructional materials in teaching appeal to all learners senses. This act therefore as source of motivation in learning which promotes understanding, well understood concepts are easily passed by learners. The implication is that the use of instructional aids betters performance because learners relate what they are taught to what they see, do touch or manipulate. The value of scientific information should be acquired through the use of real objects[97]. This concretizes what the teacher teaches and enables the learners to understandproperly and faster. It is not only science that demands the use of instructional aid, teachers of other subjects as well need them for content enrichment, planning and effective explanation of the content. If clear explanation is given, understanding and memory

are easy which leads to good performance[98].

Teachers in lower level need to use visual aids and audio aids in order to bring the far out-side world to real classroom situation which should particularly focus and link to the learners experiences. The relation of what is taught to learners experiences promotes easy understanding that is hoped to enhance proper memory application and better performance[99]. When learners attach their learning to their lives, they begin to realize the usefulness of it, practice it and conclusion can be drawn from the above that instructional materials are in no small measure a requisite for effective teaching/learning in order to make it real, concrete, and visual. When this is achieved, performance will needless to say, be good. The teacher alone cannot provide all the needed condition for an effective teaching and learning process, other supporting materials should be provided. The

students learn better when most of the senses are appealed to the instruction and use of instructional materials in education has added a new dimension in the positive promotion of teaching and learning process[100]. It provides the much neededsensory experiences needed by the learners for an effective and meaningful behaviouralchange. Instructional materials are meant to improve the quality of education for effective academic performance of students in schools. The performance of the students on the intended learning outcome provides the validation – loop on the success of the interaction and instruction. Teachers normally dodge the use of instructional materials in most of their teaching topics, while they try to do all they could during their practical teaching in their course of study; even though some of these materials are not usually available in the schools for teachers' use[101].

Many teachers teach in abstract without using the required materials. In making use of any instructional materials, such materials must be previewed that is, having full knowledge of the material; prepare the environment where it will be used; prepare audience by means of making sure that the materials to be used will attract attention, arouse, motivate and provide the rationale that could be used in the beginning, middle or end. The effectiveness of utilizing appropriate instructional materials in teaching and learning is not void of quality instructor. In order to give quality education to the younger generation, there is need for employment of more competent, experienced and qualified teachers. An in-depth look at tertiary institutionprogrammesrevealed that there is the need for improving all phases of the programmes. For example, there is need for the introduction and use of instructional materials and equipment for use in the classrooms. The broad aim of any good training materials is to induce and support the

learning process that leads to improve on-the-job performance through affecting changes in the knowledge, attitudes, skills and practices of the learners[102].

Learning materials arean essential part of practical teachings as such, in classrooms, pictures, charts and drawings should also be clear and neat. It is not good for a teacher to plan a lesson without some ideas of how he/she will stimulate or motivate his/her students by using pictorial illustrations (pictures, diagrams and apparatus) or materials illustrations. Graphic materials to be used in classroom should be simple, attractive, large enough and not to be crowded with illustrations and colours. Good teaching aids must have the following characteristics. This is because, the importance of any instructional materials lies in its ability to: a. appeal to the senses (sound and sight); b. attract and hold attention; c. focus attention on essential elements to be learned at the proper time.

In order to achieve the above objectives, any materials to be used as teaching aids must satisfy the following characteristics; Flexibility: In the college or university, the teacher has been taught different ways of teaching hence, while in the classroom a good teacher will attempt to teach his/her lesson using a variety of methods and materials. He/she should therefore, select or construct teaching aids that can be instantly modified to suit change in the approaches to construction. Colour: Since students are attracted by bright colours, these should be used in the preparation of teaching also however, too much brightness should be avoided since it may distract students'attention from the objectives of the lesson and the instructional materials. Simplicity: Teaching aids must be simple and present only few ideas at a time. This is because, students cannot comprehend complex ideas presented to them at a short-time. If pictures are used, they should illustrate only a very few words or actions. If more detailed pictures are used, student

will not know what they are to notice. Visibility: All the smallest detailed to be used in instructional materials should be large enough to be seen by every student in the class. So, such should be placed conspicuously in front of the class to present a clear view to every student[103].

The characteristics of good teaching aids can also be seen under the followings: a. Sufficiency: Teaching aids must be sufficient enough for use.b. Writing and Lettering: The Lettering or writing must be bold, clear, neat and readable. c. Attraction: That the aids must be neat and attractive to arouse the interest of students. All the lettering must be bold and attractive. d. Purpose: The information in the aids must help the students in learning and must be relevant to the lesson.e. Accuracy: They must be accurate in content and language. There should be no mistakes of facts or spelling, that is, misinformation. f. Clarity: All details in the aids e.g. drawings, pictures etc., should be easily seen by the students farther away from it. Aids such as radio, tape and television should be clear enough to be heard by all students. The characteristics of instructional materials (teaching aids) may be grouped into the following: A: Accurate – Information presented on every visual should be up to date in every aspect. Appropriate: The visual aids for use, should be relevant to the topic as well as to learners. Visual aids should be used at the exact time when they will convey the right meaning they intend to convey. Artistic: Pictorial information should be realistically produced to the extent that it will make the same meaning or impression to every learner. It should be well produced. B: Bold: Information should be boldly presented so that the viewers or learners can see them clearly. Small pictures may not be visible from the back of the large class.

Brief: Only essential information needs to be inserted in the visual aids to avoid over crowdedness and irrelevance. As a rule, main ideas should be few and stand out clearly for effective communication. Bright: Bright vision may brighten the learner view of contents while dull ones may cause a dull effect that may lead them to dozing off. C: Clear: The visual aid for use, should be clear so that every learner or viewer can quickly grasp its content. "A clustered chart is a confusing chart, if there is a lot of information to convey, develop a series of simple chart, rather than a single complex one" Clean: A dirty work is unattractive and put off learners. Visuals should be clean and well cared for to avoid damages. Carefully handled or finished: The planning and production of teaching aids, should be carefully carried out to give a deserved impression of good visual. Finally, a good teaching aid will provide adequate interaction[104].

The followings are some of the reasons for using instructional materials. (i) A good instructional material can supplement spoken or written words. (ii) It can bring teaching to life in a way which word cannot. (iii) Words can describe people, places and objects but a picture immediately brings reality (iv) A teaching aid can simplify and clarify what is complex and difficult to express in words. (v) Instructional materials have motivational value for them to develop the interest of the student. (vi) Instructional materials can also promote retention as we can understand from the Chinese proverb that says "what I hear I forget, what I see I remember what I do I understand". (vii) They save time, and energy what you will explain in ten minutes, will be possible in less time with the use of instructional materials[105].

Aids implied to help in teaching, not to be substitutes for teaching the subject, nor for teachers, rather, it should be used to supplement oral explanation and descriptions.

Instructional materials include self-supporting materials which are used by the teacher to present a complete body of instruction". They make a lesson to become more explicit and interesting. Teaching aids are of prime importance of both dull and bright students. Teaching aids is an essential part of teaching methods which helps the teacher to express its subject concept to the learners thus promoting students;' academic performance. That, such aids or materials, should be the responsibility of the teachers. Instructional materials are normally used during instruction to enhance proper or effective learning and to encourage retention. They reduce the workload of teacher in the classroom, reinforce and add clarity to learning. Instructional materials also aid teachers' competence and effectiveness of instruction and class control. It makes the learning environment more attractive, appreciable, conducive, bearable and realistic. The learners' attention is better controlled and sustained. Section ten in the National Policy in Education stated that objectives of learning materials are to: (i) enhance teaching and improve the competence of teachers (ii) make learning more meaningful for students. (iii) develop and promote the effective use of innovative materials in schools[106].

Reasons for the importance of using teaching aids in teaching and learning process in our educational settings. They aid learning by aiding the sense of seeing, hearing and touching. They direct teachings to its goals, makes lesson become interesting, arouse students' interest and motivate them to learn. Teaching aids are valuable in the following situation: (a) When the object of instruction is either too big or too small or too spread out to be seen effectively by the students. (b) When an object is inaccessible to students, such should be displayed to the class with models. (c) If an object is too expensive, dangerous or delicate for the students to use, (d) When a process being studied is very

slow pictures or diagrams are used to illustrate the various stages involved. When using teaching aids, it is important that teachers should consider the following suggestions; (i) Ensure that the material is accurate and acceptable to the students. (ii) Preview such materials before using them in the class (iii) Arrange the materials in such a way that the students will see it from the place they are sitting. (iv) Use the materials in the appropriate time in the lesson and after that remove them. (v) Do not use only one type of teaching aid to the exclusion of others. Ensure there is change and variety. (vi) Always remember that students are different in age/maturity, interest and experience. It is always an advant age to combine the aids to meet the need of various students. The class needs showed determination of the types of aids to be used. Do not cause confusion by presenting too much information. Instructional materials are versatile tools that are used in different ways for effective teaching and learning. These aids convey facts and ideas in all forms of communication. They offer quite an easy way of presenting information[107].

Instructional materials assist teachers in the achievement of stated objectives and also help the teachers to make lesson explicit to the students. Instructional materials possess the quality of influencing the psychological, motivational and structural position of the learners. It aids the achievement of any one of the following in the teaching learning process: Attention and motivation; orderliness in the classroom; lesson presentation; recall and remembering; guidance, active participation and response; feedback, assessment of performance and evaluation. Instructional materials are important tools for enriching, visualizing, simplifying, transmittingand accelerating the teaching and learning processes, thus enhance students' academic performance. Effective instruction with instructional materials in the classroom requires careful planning by teachers. This

implies that teachers should take time to apply special knowledge and skill with respect to selecting, producing and using different kinds of instructional materials[108].

Teaching aids can be classified into two classes. They are: a. Visual aids b. Audio-visual aids. The visual aids are those teaching aids that can be clearly seen with our eyes vividly. Examples of visual aids are: chalkboard, textbooks, charts, model, survey equipment, while audio-visual aids are those that we can hear and see, by producing sound that the sound are expressed in thought. They appeal to our senses of ear and eyes. Audio visual aids include: tapes, video, television, projectors and motion pictures. One can classify learning materials in several ways. For instance, one can distinguish between auditory, visual and reading materials. However, for the purpose of classification, learning materials for teaching can be classified as follows: (i) Printed and reference materials: Textbooks, newspapers, magazines, government documents, teachers' guide, duplicated materials, journals, hand book, bulletins, pictures, work books, pamphlets, leaflets. (ii) Graphic materials: Graphs, charts, diagrams, maps, globes. (iii) Display materials: Chalkboard, bulletin boards, flat pictures, magnet boards and flannel board. (iv) Projected materials – television, video tape, overhead projector, slides and slide projector and transparencies. (v) Audio and other visual materials: Radio, model, computer, tape recording etc.(vi) Community resources: Manufacturing companies, Industrial environment, Laboratories, Zoos, Agricultural extension service centres, market place, parks, industrial establishments[109].

Teaching aids were meant to be used when necessary. They are not to be used for the sake of using alone. The following, are the criteria to consider in selecting teaching aids. Purpose: Aids should not be used only because they are attractive or because students

will like seeing them. Teachers should have definite objective in mind before thinking of any aid. The objective to be achieved, this is as immeasurable and quantifiable outcome. This could be manipulative, informative, or attitudinal which are usually based on a particular domain of learning such as cognitive, affective, and psychomotor. Availability and Durability: Instructional materials should also be selected for use considering its availability in adequate number in the school to facilitate its functional use, practical durability of the materials and equipment, and face-validity of the materials. Other considerations are given to up-to-datedness of the materials, case of management and operation, familiarity, and replicability of its use. Appropriateness: In selecting instruction materials for use, consideration is given to time, space and when to use the materials for effective and efficient use of instruction materials. Cost-effectiveness: The economy and cost-effectiveness is one of the pragmatic determinants of instructional materials selection. This includes the cost-benefit analysis, its availability, viability, for a particular learning situation. This is to ensure the integration of such materials to facilitate learning and produce replicable result.

No matter how professional a teacher is, his/her interaction with students might not yield an effective outcome as compared to teacher that made use of such versatile materials in his/her teaching[110]. Therefore, a teacher needs to support his/her teaching with appropriate materials in order to be able to put the lesson into practice. In the area of selection and use of instructional materials in teaching, certain considerations should be taken as guiding principles. These include the following:1. Can the instructional materials serve the intended purpose? 2. Are the instructional materials readily available? 3. Are the instructional materials appropriate to the intended lesson?4. Can the instructional

materials serve as supplement to teaching?5. Are the instructional materials carefully and systematically organized for effective use?

The above stressed the importance of selecting an appropriate instructional material in teaching agricultural science in particular in order to enhance students' academic performance in the subject. Audiovisual instructional material must be used intelligently. Sufficient examples of classroom use of audiovisual materials have been given to suggest six main principles for their intelligent use:1. Select the materials in terms of learning goals.2. Prepare the students for use for audiovisual materials3. Prepare for operation of the equipment.4. Provide opportunity for the students to participate.5. Provide follow-up activities.6. Evaluate the outcomes. In summary, the intelligent selection of many audiovisual materials of instruction are important for the modern teaching. Visual materials and devices such as chalkboard flat pictures, graphs, maps, opaque and overhead project, filmstrip and study display, can facilitate the learning that is accomplished by means of sight. The sound motion picture, should be widely used in secondary schools today as it would bring excellent results[111].

However, while the number of students who are enrolled in tertiary institutions have been increasing each year, education capitation grant has been dropping. Even without adjusting for inflation, the actual amount of money reaching tertiary institutions for capitation grants is clearly much less today compared to what it was between 2002 and 2003. According to the Education Public Expenditure Tracking Survey of 2004, in the period 2002-2003 schools received an average of 5,400 shillings per pupil. In 2007/2008 however, the money actually reaching the institutions had declined to 4,189 shillings per pupil. This amount of money is grossly insufficient to purchase a minimum set of

textbooks apart from other instructional materials which are highly needed by the teachers. Government's Policy towards efficient provision of these aspects of educational resources has not been encouraging and has always not been well planned, monitored, supervised and evaluated with rural schools as the back bench of implication of these policies. Another challenge that teachers face is the lack of exposure and limited accessibility to modern instructional facilities. As we are in a new millennium, there is an increased awareness of the need to use modern scientific approach in teaching and learning processes in our schools[112].

At present, there is a universal recognition of information and communication technology as a major force in the dissemination of knowledge. Majority of teachers who were trained early 1990's and backward do not have skills in the field of Information and Communication Technology. Where there are skilled teachers, other problems naturally include problem of installation, maintenance, operation, network administration and local technicians to service or repair these equipment's and the other facilities. Poor salary is also another challenge that teachers face. Teachers like most civil servants are poorly paid. This becomes a hindrance for them to purchase their own teaching materials or acquire of new ideas, skills and knowledge by failure in enrolling for further educational programmes including Information and Communication Technology (ICT). With this, the academic and intellectual capacities of teachers and learners are bound to be affected substantially during classroom. Lack of sufficient skills and creativity may hinder teachers from improvising their own instructional materials. Another challenge that teachers face in accessing instructional materials is lack of clear policy and monitoring mechanisms to ensure that enough funds are provided to schools for purchasing

instructional materials and also these funds are used for the intended purpose. Government Policy towards efficient provision of these aspects of educational resources has not been encouraging and has always not been well planned, monitored, supervised and evaluated with higher institutions as the back bench of implication of these policies[113].

There are a number of strategies, which can be used in order to minimize the challenges of attaining and using quality instructional materials. Studies done in different parts of the world including Africa, one of the strategies is improvisation of instructional materials. Improvisation involves sourcing, selection and deployment of relevant instructional materials into the teaching-learning focus in the absence or shortage of standard materials for a meaningful realization of specified educational goals and objectives. Some creation of improvised media of low technological materials and resource-centred learning can enlarge the limited knowledge base of any course of study and enrich instruction to a guaranteed quality. It can also promote strategies that ensure the integration of technology in the teaching and learning process of education. The finding is in agreement with the findings that using technologies like simulation devices open new horizons for individual learning tools, the environment resources and services. The use of ICT can also minimize some of the challenges in accessing instructional materials[114].

The use and rapid spread of electronic communications has the capacity to affect the quality and efficiency of basic education throughout the world. The ease with which teachers and students can gather information over the Internet on virtually any topic has the potential to transform instructional content and pedagogical practice. Moreover, courses developed by the best teachers in one country can be made available to students across many countries. Newer technology-based instructional strategies, incorporating the

Internet and the World Wide Web (WWW), can therefore be used more to expand communication and increase access to resources. ICT has potentials in increasing access and improving relevance and quality of education in developing countries. The potentials of ICT are as follows: ICTs greatly facilitate the acquisition and absorption of knowledge, offering developing countries unprecedented opportunities to enhance educational systems[115].

The better use of instructional aids in schools greatly depend on the ability of teachers, their interest and knowledge. Some materials do exist in schools but are never exploited to advantage due to the teacher's inability to use them. The teachers'level of training affect the use of the instructional resources available. Trained teachers have higher abilities of using available instructional materials as compared to untrained ones. If proper use of apparatus and other teaching aids is to be achieved, the education sector should ensure that teachers are well trained. The ability of the learners and their age, greatly affect their use of instructional materials. If learners lack ability to interpret and use the resources, it becomes useless for the teacher to use them. It therefore means that proper use of the materials depends on how well the teacher selects and matches the resources with learners' ability, age and experiences. The effective use of instructional aids depends on the time a teacher has to prepare, manipulate, and to allow learners to study the material. If the time available is limited, the resource cannot be thoroughly studied. The teacher's experience will affect the effectiveness and appropriate use of instructional materials.

Experienced teachers have high ability and knowledge of using the available instructional materials. Those who are inexperienced teach the way they were taught yet they even

remember little, and their teaching appeal less to the learners. This impedes understanding as well as performance. Teachers need to have adequate training, experience and creativity in order to ensure effective and appropriate use of instructional aids[116].

2.1.3 Concept of Teaching Competence

When a person imparts information or skills to another, it is common to describe the action as teaching. Imparting may mean to share experiences or communicating information, for instance, lecture[117]. Teaching is regarded as both an art and science. As an art, it lays stress on the imaginative and artistic abilities of the teacher in creating a worthwhile situation in the classroom to enable students to learn. As a science, it sheds light on the logical, mechanical, or procedural steps to be followed to attain an effective achievement of goals. Different educationists hold different ideas regarding the concept of teaching[118]. "Teaching is intimate contact between a more mature personality and a less mature one which is designed to further the education of the latter". "Teaching is to learning as selling is to buying"[119]. Teaching is arrangement and manipulation of a situation in which there are gaps or obstructions which an individual will seek to overcome and from which he will learn in the course of doing so[120]. Teaching is a system of actions intended to induce learning[121]. Teaching is a form interpersonal influence aimed at changing the behaviour potential another person[122]. Teaching is a system of actions involving an agent, an end in view and a situation including two sets of factors those over which the agent has no control (class size, characteristics of pupils, physical facilities, etc.) and those which he can modify (such as techniques and strategies of teaching[123].

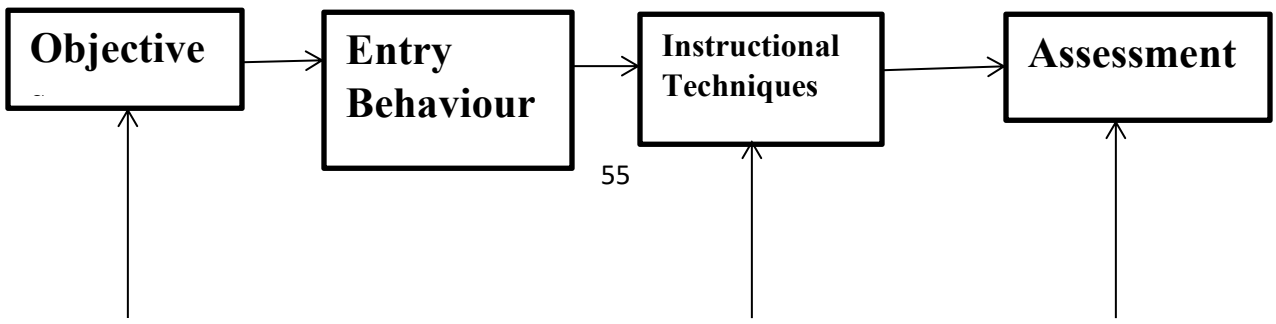
Teaching is an interactive process, primarily involving classroom talk which takes place between teacher and pupil and occurs during certain definable activities[124].Teaching is a scientific process, and its major components are content, communication and feedback[125]. The teaching strategy has a positive effect on student learning. It is always possible to modify, improve and develop. The new teaching-learning activities, and hence the flexibility is in-built into the system; and "The terminal behaviour of the learner in terms of learning structures can be established by appropriate teaching environments[126].Teaching is a set of events, outside the learners which are designed to support internal process of learning[127]. Teaching (Instruction) is outside the learner. Learning is internal to learners. You cannot motivate others if you are not self-motivated. Motives are not seen, but, Behaviors are seen. Is learning a motive or behavior? Learning is both a motive and behavior but only behavior is seen, learning is internal, performance is external[128].

Generally, the role of teacher can be categorized into: Traditional Role - Teacher Centered, Modern Role - Facilitator (Student Centered). There has been a change from the Traditional role to the Modern role in the present context. The learning increases when the teacher builds on the previous experience of the student. However, individual's learning differs and each individual learns at his or her own pace. Identifying the slow learners and individual attention of the teacher may be required. Thus, effective learning is to a great extent based on experiences. Direct experiences are student centered and participation in problem solving. While in indirect experience, the contents are carefully designed and organized by teacher[129]. Objectives are intended learning outcomes written down before the process of instruction. General Objectives - Statement of instructional

intent - student ability in general terms. Specific objective statement of instructional intent- student ability in terms of specific and observable, Usefulness of objectives, Elements of objectives, Terminal behavior Condition, and Criterion / Criteria[130].

Writers tend to separate learning into three main groups or domains. These are the psychomotor, cognitive and affective domains. Those skills, which are concerned with physical dexterity, for example changing a wheel and giving an injection, fall into the psychomotor domain. Both of the tasks do need knowledge but, predominantly they are physical skills, which need practice. Knowledge and knowing the 'how' and the 'why', the thinking skills, fall into the cognitive domain. Examples include 'stating the names of the major bones in the body', 'explaining why we have tides'. Both of these require thought processes to be accomplished. The third domain, and one we often neglect, is the affective domain. This is concerned with attitudes. Examples in this domain include 'the need to eat a healthy, balanced diet', 'the need for equality of opportunity for all', and 'politeness'. These deal with feelings and emotions and are different from the examples in the other domains[131]. Effective Learning occurs when these three domains are seen as interdependent. Each of these domains should be developed as part of teaching/ learning session. Teachers should be able to define learning objectives in each of them[132].

Learning in these three domains often needs different teaching and learning approaches. They are often considered in isolation but in practice learning may occur simultaneously in all three.



Figures 2.1: Evaluation and Feedback

Source: Ian Reece and Stephen Walker, 2002

Traditionally the role of the teacher has been as a purveyor of information: The teacher was the fount of all knowledge. This suggests a picture of students sitting in rows in front of the teacher who is talking and passing information to students with the aid of a blackboard, while the students either listen passively or, if the teacher is lucky, take their own notes. This, of course, is not true anymore. The modern teacher is a facilitator: a person who assists students to learn for themselves. Instead of having students sitting in rows, they are likely to be in groups, all doing something different; some doing practical tasks, some writing, some not even in the room but in another part of the building using specialist equipment or looking up something in the library. All of the students might well be at different stages in their learning and in consequence, the learning is individualized to suit individual requirements and abilities[133]. This change from the traditional model is the result of a number of factors. First, it is recognized that adults, unlike small children, have a wealth of experience and are able to plan their learning quite efficiently. Second, not all individuals learn in the same manner, so that if a teacher talks to students some might benefit, but others might not. Third, everyone learns at their own pace and not, of necessity, at the pace set by the teacher.

Hence, the individualizing of learning has defined advantages. Research into the ways that people learn has not provided teachers with any specific answers. If it had, all teachers would be using the same techniques. However, researchers have identified that learning is generally more effective if it is based on experiences; either direct experiences or experiences that have been read about. Of the two types of experiences, the former is more likely to be effective than the latter. Thus concepts that are able to be practiced or seen are more likely to be learning. To apply this in a practical situation in post-16 education and training, learning is more likely to be effective when it is related to, and conducted in, the knowledge of a student's (work) experience[134].

We need, at this stage, to consider how we as teachers might best provide the experiences so as to make the learning as easy and quick as possible. We might consider two possible approaches to the design of a teaching programme; (i) A programme where the content is carefully derived from an analysis of the student's personal, social and/or vocational needs and which is implemented by you in such a controlled and organized manner that the student is almost certain to learn, and is aware when the learning has taken place. By this method motivation is generated by immediate success and the avoidance of failure. Unfortunately this rarely takes place because it has a fundamental drawback. Apart from the requirement for the students to place themselves in the hands of the teacher and thus tend to develop a relationship of dependency, it confirms to them that learning is a process which is organized by someone who knows better. It does not help students to learn on their own[135]. (ii) The other approach starts from the experience of the student, experience that has taken place as part of life or which has been organized as part of the programme. It then depends upon the student identifying and accepting a need to learn.

Such an approach has been described as 'problem solving', 'student-centered learning', 'participative learning', and so on[136]. The problem with this approach is to ensure that important areas of learning are not omitted and that the 'right' balance is struck between these areas, and that each area is learned as effectively as possible.

Teaching methods which allow this second approach to be implemented include: project work derived from students' current experiences; discussions which allow students to recognize and consolidate what the experience has taught them, and also lead them to identify what else they need to learn and practice; the learning of specific problem-solving techniques which can be applied to a range of situations; activities designed to provide opportunities for specific learning outcomes. Such a list of teaching approaches identifies a second problem associated with the approach; that of (over) concentrating upon the activities – the practical work which tends to be more enjoyable, and neglecting to recognize the possible learning that can accrue from such activities. The entire structure of teaching has four steps 'Step-I: Planning of teaching which includes content analysis, identification and writing of objectives. Step-2: Organization of teaching which indicates the teaching strategies for achieving the objectives of teaching. Step-3: Identification of suitable teachinglearning strategies for effective communication of content. Step-4: Managing teaching-learning, whereby the focus is on the assessment of the learning objectives in terms of student performance, and this forms the feedback to teacher and students[137]. Teaching is a generic term which denotes actions undertaken with the intention of bringing about learning in another[138].

The International Encyclopedia of Teaching and Teacher Education) have classified the concept of teaching into three categories: 1. Teaching as success signifies that learning is

implicated in teaching. Teaching entails learning and can be defined as an activity which necessarily affects learning. 2. Teaching as an intentional activity means that teaching may not logically imply learning, but it can be anticipated that will result in learning. 3. Teaching as normative behaviour denotes action undertaken with the intention of bringing about learning. It designates a family of activities: such as training and instructing which are primary members and indoctrination[139]. Training consists of activities that shape skills and other behaviours while instruction and indoctrination go with activities which induce knowledge and beliefs. Teaching can be conceptualized as a form of problem-solving and decision - making which has many properties in common with the work of physicians. This conceptualization has led to a body of research which has investigated the decision - making of teaching focusing in particular on the information about pupils that teachers use to make decisions and the way they tailor instruction to individual pupil needs[140].

The characteristics of teaching are as follows: 1. Teaching is an effective interaction between teacher and students. 2. Teaching is both arts as well as science. Teaching is an art as it calls for the exercise of talent and creativity. Teaching as science involves a repertoire of techniques, procedures and skills, that can be systematically studied, described and improved. A good teacher is one who adds creativity and inspiration to the basic repertoire. 3. Teaching has various forms, like formal and informal training, conditioning or indoctrination, etc. 4. Teaching is dominated by the skill of communication. 5. Teaching is a tripolar process; the three poles are, educational objectives, learning experiences and change in behaviour. 6. Teaching should be well planned, and the teacher should decide the objectives, methods of teaching and evaluation

techniques. 7. Teaching is suggesting and not dictating. 8. Good teaching is democratic, and teacher respects the students, encourages them to ask questions, answer questions and discuss things. 9. Teaching provides guidance, direction and encouragement to the students. 10. Teaching is a cooperative activity and teacher should involve students in different classroom activities, such as organization, management, discussion, recitation and evaluation of results. 11. Teaching is kind and sympathetic, and a good teacher develops emotional stability among children. 12. Teaching is remedial, and the teacher must solve the learning problems of students. 13. Teaching helps children to make adjustments in life. 14. Teaching is a professional activity that helps to bring about harmonious development of children. 15. Teaching stimulates students' power of thinking and directs them towards self-learning. 16. Teaching can be observed, analyzed and evaluated. 17. Teaching is a specialized task and may be taken as a set of component skills for the realization of a specified set of instructional objectives[141].

Exponents of Education have analyzed the concept of teaching and have assayed to differentiate teaching from related concepts such as training, conditioning and indoctrination. Teaching denotes action undertaken with the intention of bringing about learning in another. In this way, teaching is distinguished from mere telling or showing. Teaching involves face to face encounter, and the teacher's actions are conducive to bringing about student's learning. Normally, teaching acts fall within a range of activities that covers explaining, describing, demonstration exemplifying, guiding, etc. By "education" in this context is meant specific information of thought, feeling and action distinct from mere socialization. And the goal of educations is the development of critical

reflective agents. It is in this context that teaching is distinguished from related activities such as training, conditioning and indoctrination[142].

Training is used less frequently than either conditioning indoctrination. The focus of training is on the development of skill on knowing-how rather than knowing what. Sometimes training reserved for use in the context of the teaching of routine tasks which allow total mastery. Teaching someone a skill requires developing the learner's capacity to respond to the unexpected, to understand what he or she is doing and why to be intelligent and reflective in the exercise of his or her skill. Conditioning, when compared with teaching, is normally operant conditioning and not classical conditioning. Operant conditioning may seem to be simply a systematic form of training and hence teaching. Common school practices such as giving rewards for good behaviour can be described as setting up a situation in which a reinforcer depends upon the occurrence of a response, and that is the procedure for operant conditioning.

Conditioning, in this sense, will have taken place if the probability of the desired response in the particular circumstances increases because of its association in the experience of the child with the positive reinforcer. A child's behaviour could be altered through conditioning without the child being aware of the change or having any notion of why behaving in this way might be appropriate? The particular circumstances. Processes which by-pass human rationality are generally held to be unacceptable in a programme of education. Such processes seem less like a form of teaching and more like something resorted to when normal instruction fails. On the other hand, such rational processes as a person's learning some fact by reading or hearing statements in its favour and evaluating the evidence can be described as a process of operant conditioning. In this sense, teaching

is not incompatible with conditioning students but only with some ways of doing so. Indoctrination, in its generic sense, is considered as synonymous with teaching. Etymologically, indoctrination is related to the teaching of doctrines. A doctrine is a system of beliefs that provide an explanation or interpretation of the world and indicates how humans ought morally to act in light of the general features of existence that the system has identified[143].

To conclude, it may be said that, teaching should not only aim at encouraging beliefs which are supported by the evidence but also at developing the power of students to gather the evidence; assess its adequacy for themselves. A programme of education may include the acquisition of the most reliable methods humans have developed for discovering the truth about themselves and the world. When teaching skills, the educator makes the students aware of reasons for what they are doing and encourages them to be intelligent and reflective in the exercise of their skills. And though the environment may shape the behaviour of students' teachers expect students to act because of perceptions of what they ought to do. It is essential to prepare the students for life by developing their capacity, intelligent freedom of choice rather than simply acquiring thought, feeling and action possessed by the learners[144].

2.2 Theoretical Review and Framework

2.2.1 Ramsden Theories of Teaching

Ramsden's conceptualization of teaching is based on his extensive research on student learning in higher education and a series of unpublished case studies of instructors[145]. He argues that teaching and learning must be thought of inseparably. He states that the

answer to improving student learning "lies in the connection between students' learning of a particular content and the quality of our teaching of that content. Good teaching and good learning are linked through the students' experiences of what we do. It follows that we cannot teach better unless we are able to see what we are doing from their point of view"[145]. He described three progressively sophisticated "theories" and associates each with specific views of teaching and learning. In the first theory, the view of teaching and learning is fragmented. The role of the professor and the student, the teaching and learning processes, the content and context, while important, are mostly unrelated. Instructors at this level tend to think that subject matter must be transmitted to students and that teaching and learning are part of simple input-output process. The instructor's focus is on himself or herself as the one who transmits knowledge and expertise, and not on learning, the rightful outcome of the process.

The primary tenet of the second theory is organizing student activity. The instructor recognize that engaging students more actively increases learner motivation; there is more concern for what the students are doing and what the professor's interaction with them should be. Typically, at this level, instructors try one or more new methods, emphasizing the belief that improved teaching involves enlarging one's repertoire of teaching methods. The focus on engaging students in activities stops short of making intentional connections between the desired learning and the selected activity or teaching method. In the third and most evolved theory, all aspects of the teaching and learning process are well integrated. Teaching, at this level, means cooperatively working with learners to achieve understanding. He further strengthens his conceptualization by placing the three theories of teaching within a broader model withfeedback. In this model,

context acts as a filter between thinking and teaching and is described as an instructor's perception of variables, such as disciplinary norms, organizational patterns, and institutional variables. Following the same argument, he contends that any activity aimed at improving teaching needs to engage instructors in ways that are appropriate to the development of their understanding of teaching. Ofmajor importance in making learning about teaching meaningful to instructors is to place the experience in the context of their specific subject area and then to encourage them to deliberate about what they do and why they do it. For this reason, He would argue that skills-based faculty development activities, such as training in lecturing and discussion techniques, without contextualizing them within the instructor's current understanding of teaching and within their subject matter are bound to fail in improving teaching competency.

2.2.2 Sociocultural Theory of Teaching, Learning, and Development by Lev Vygotsky

Sociocultural theory of teaching, learning and development is the second theory that framed this study. Largely inspired by the seminal works of Lev Vygotsky, this theory assumes that human minds do not develop by virtue of some predetermined cognitive structures that unfold as one matures. Rather, this theory posits that human minds develop as a result of constant interactions with the social material world. According to Vygotsky, human mind developed through interaction with materials in the learning process where people learn from each other and use their experiences to successfully make sense of the materials they interact with. These experiences are crystallized in 'cultural tools', and the learners have to master such tools in order to develop specific knowledge and skills in solving specific problems and, in the process, become competent

in specific profession. In the classroom, these tools can be a picture, a model, or pattern of solving a problem. Most often however, such tools are combinations of elements of different orders, and human language is the multi-level tool par excellence, combining culturally evolved arrangements of meanings, sounds, melody, rules of communication, and so forth[146].

Learning by using such tools is not something that simply helps the mind to develop. Rather, this kind of learning leads to new, more elaborated forms of mental functioning. For example, when children master such a complex cultural tool as human language, this results not only in their ability to talk but leads to completely new levels of thinking, self-regulation and mentality in general. It is the specific organization of this tool (e.g., the semantic, pragmatic and syntactic structures of language) that calls into being and in effect shapes and forms new facets of the child's mind. Importantly, cultural tools are not merely static 'things' but embodiments of certain ways of acting in human communities. In other words, they represent the functions and meanings of things, as discovered in cultural practices: they are "objects-that-can-be used- for-certain-purposes" in human societies. As such, they can be appropriated by a child only through acting upon and with them, that is, only in the course of actively reconstructing their meaning and function. And such reconstruction of cultural tools is initially possible only in the process of cooperating and interacting with other people who already possess the knowledge (i.e. the meaning) of a given cultural tool.

This short account is presented here to illustrate the fact that the sociocultural approach, unlike that of proper financing, good record keeping, transparent recruitment process and

supply, by Gagne discussed above, not only allows for a synthesis of teaching, learning, and cognitive development; it actively calls for it. This theory implies that proper financing, good record keeping, transparent recruitment process and supply lead to cognitive development because they mediate learners' thinking through the implementation, and such mediation will constitute the very cornerstone of mental development of academic learners of government-owned polytechnics in Lagos State, Nigeria.

2.3 Empirical Review

2.3.1 Instructional Materials andAcademic Learning

In his study, it was revealed that there is a strong positive link between instructional resources and academic learning[147]. Schools that possess more instructional resources learn better than schools that have less instructional resources. This finding supported the study that private schools performed better than public schools because of the availability and adequacy of teaching and learning resources[148]. There was a low level of instructional resources available in public schools and hence commented that public schools had acute shortages of both teaching and learning resources. He further commented that effective teaching and learning cannot occur in the classroom environment if essential instructional resources are not available.

The quality of instructional processes experienced by a learner determines quality of education[149]. In their view they suggest that quality instructional materials create into the learner's quality learning experience. It was also supported by another scholar that students' performance is affected by the quality and quantity of teaching and learning resources[150]. This implies that the schools that possess adequate teaching and learning materials such as textbooks, charts, pictures, real objects for students to see, hear and experiment with, stand a better chance of performing well in examination than poorly equipped ones. A study on the physical facilities and teaching learning materials in schools in Tanzania supports the above views[151]. Teachers and students were interviewed on the role of instructional materials on effective learning. From his study he learned that performance could be attributed to adequate teaching and learning materials and equipment that are in a school. He recommended that in order to provide quality education the availability of sufficient quality facilities is very important. In another study which directly linked the role of physical facilities with students' academic learning outcome in schools, only physical facilities were focused on, leaving out instructional materials. To me, physical facilities such as buildings including classrooms, chairs and desks are not enough to provide quality teaching and learning. Instructional materials are also necessary. A study agreedon my ideas that, in order for a school to have a good performance it must be well equipped with relevant and adequate text books and other teaching and learning resources.

A research study tilted: "The availability and utilization of instructional materials in the teaching of agricultural science in selected secondary schools in Lagos State" was carried out[152]. The target population was two hundred and fifty (250) secondary schools out of

which, twenty-five (25) secondary schools were selected as the samples using systematic sampling. The instrument used in collecting the data was questionnaire. Five (5) null hypotheses were stated which were tested using the Average Weighted Response (AWR) test statistics at 1.00 level of significance. All the five (5) null hypotheses were accepted. The results showed that the teaching of agricultural science in selected secondary schools depended on the availability and utilization of instructional materials which had negative relationship in the teaching of agricultural science in selected secondary schools in Lagos State.

A research study tilted: "Utilization of teaching aids in the teaching of vocational agricultural science in secondary schools in OsunState" was carried out[153]. The target population was two hundred and thirty one (231) secondary schools out of which fifteen (15) secondary schools were selected as the sample by simple randomization. Five (5) null hypotheses were stated which were tested using correlation coefficient test statistics at 0.68 level of significance, and all the five (5) null hypotheses were rejected. The result showed that about 60% of the respondents made use of the teaching aids effectively which had positive relationship in the teaching of vocational agricultural science in secondary schools in Osun State.

A research study titled: "Effects of Instructional Materials on Students' Performance in Geography in selected Secondary Schools in Ilorin South LGA of Kwara State" was carried out[154]. The target population was fourteen (14) secondary schools out of which eight (8) secondary schools were selected as the sample by simple random sampling. Three (3) null hypotheses were stated which were tested using correlation coefficient test statistics at 0.8 level of significance, and all the three (3) null hypotheses were accepted.

The results showed that about 80% of the respondents did not make use of the instructional materials appropriately which had negative effects on the performance of students in Geography in Secondary Schools in Ilorin South LGA in Kwara State.

A research study titled: "Effects of Instructional Materials' Usage and Teachers' Quality on Students' Academic Performance in Science in Senior Secondary Schools in Zaria LGA in Kaduna State" was carried out[155]. The target population was fifteen thousand four hundred and thirty (15,430) senior secondary school students from twenty-four (24) secondary schools in Zaria LGA and one thousand and thirty-three (1,033) teachers. Sample of eighty (80) students were randomly selected with nine (9) teachers. Three (3) null hypotheses and three (3) research questions were formulated to guide the study. T-test statistical tool was used in testing the null hypotheses at 0.05 level of significance. The findings revealed that students performed better when appropriate and improvised materials were made available and utilized in teaching science and teachers possessing good qualifications enhanced students' performance in science.

The factors affecting the instructional materials usage were discussed. Among which included number of learners or students involved, the space of time available, facilities and materials available, interest and ability of agricultural science teachers and effectiveness of instructional materials. Also, the problems militating against effective use of agricultural instructional materials were equally treated which included emotion and feelings, self-concepts or personal or audience perception, educational level of the learners or students' cultural background, motivation, etc. Some of the criteria for selecting and evaluating instructional materials were treated as seen or observed in our

secondary schools or as related to the materials which included purpose, availability and durability, appropriateness and cost effectiveness[156].

In a researcher's study it was revealed that a strong positive link between instructional resources and academic performance[157]. According to the researcher, schools that possess more instructional resources performed better than schools that have less instructional resources. This finding supported the study by a scholar that private schools performed better than public schools because of the availability and adequacy of teaching and learning resources. The researcher noted that there was a low level of instructional resources available in public schools and hence commented that public schools had acute shortages of both teaching and learning resources. He further commented that effective teaching and learning cannot occur in the classroom environment if essential instructional resources are not available. Another scholar suggested that the quality of instructional processes experienced by a learner determines quality of education. In their view they suggest that quality instructional materials create into the learners' quality learning experience. A scholar also supports that students performance is affected by the quality and quantity of teaching and learning resources. This implies that the schools that possess adequate teaching and learning materials such as textbooks, charts, pictures, real objects for students to see, hear and experiment with, stand a better chance of performing well in examination than poorly equipped ones.

A study on the physical facilities and teaching learning materials in Primary schools in Tanzania supports the above views[158]. Chonjo interviewed teachers and students on the role of instructional materials on effective learning. From is his study he learned that performance could be attributed to adequate teaching and learning materials and

equipment that are in a school. He recommended that in order to provide quality education the availability of sufficient quality facilities is very important. His study was one of its kinds in Tanzania which directly linked the role of physical facilities with students' academic performance in primary schools. However, he focused only on physical facilities, leaving out instructional materials. To me, physical facilities such as buildings including classrooms, chairs and desks are not enough to provide quality teaching and learning. Instructional 20 materials are also necessary. Another study also agreed with my ideas that, in order for a school to have a good performance it must be well equipped with relevant and adequate text books and other teaching and learning resources.

Teachers in community secondary schools most especially in rural community schools face some challenges in accessing instructional materials. One of the big challenges that teachers in community secondary schools face in accessing instructional materials is meagre funds provided by the government to community secondary schools for purchasing instructional materials. Community secondary schools depend to the large extent on the government for funding. Very little support is received from local government and communities around the schools most especially in rural areas due to poverty. The funds are provided in form of capitation grants. The capitation grant is aimed at improving the quality of education by making sure that sufficient leaching and learning material are found at school level. In particular, the capitation grant is meant to finance the purchase of textbooks and other teaching and learning materials as well as to fund repairs, administration materials, and examination expenses[159]. However, while the number of students who are enrolled in schools has been increasing each year, education

capitation grant has been dropping. Even without adjusting for inflation, the actual amount of money reaching schools for capitation grants is clearly much less today compared to what it was between 2002 and 2003.

According to the Education Public Expenditure Tracking Survey of 2004, in the period 2002-2003 schools received an average of 5,400 shillings per pupil. In 21 2007/08 however, the money actually reaching the schools had declined to 4,189 shillings per pupil[160]. This amount of money is grossly insufficient to purchase a minimum set of textbooks apart from other instructional materials which are highly needed by the teachers. According to a researcher, government's Policy towards efficient provision of these aspects of educational resources has not been encouraging and has always not been well planned, monitored, supervised and evaluated with rural schools as the back bench of implication of these policies. Another challenge that teachers face is the lack of exposure and limited accessibility to modern instructional facilities. Most community secondary schools especially in rural areas do not have access to information communication technology (ICT) which could alleviate shortage of instructional materials. As we are in a new millennium, there is an increased awareness of the need to use modern scientific approach in teaching and learning processes in our schools.

At present, there is a universal recognition of information and communication technology as a major force in the dissemination of knowledge[161]. Majority of teachers who were trained early 1990's and backward do not have skills in the field of Information and Communication Technology. Where there are skilled teachers, other problems naturally include problem of installation, maintenance, operation, network administration and local technicians to service or repair these equipment's and the other facilities. In most of the

rural secondary schools, most of the facilities are non-existent, hence the traditional chalk and duster approach still dominates in secondary school pedagogy. Poor salary is also another challenge that teachers face. Teachers like most civil servants in Tanzania are poorly paid. This becomes a hindrance for them to purchase their own teaching materials or acquisition of new ideas, skills and knowledge by failure in enrolling for further educational programmes including Information and Communication Technology (ICT). With this, the academic and intellectual capacities of teachers and learners are bound to be affected substantially during classroom interaction. Lack of sufficient skills and creativity may hinder teachers to improvise their own instructional materials. Local governments and communities around community secondary schools are supposed to provide resources most especially funds to these schools so that teachers can use them to access instructional materials. But very often this is not the case due to number of reasons. Some local communities have very narrow tax base.

Also, the performance of local councils in the collection of their own revenue have been recorded very poor. According to a researcher there are few types of councils in Tanzania, which can manage to collect government grants[162]. Many local authorities however have found themselves unable to deal with such a rapid increase in expenditure and their budget deficit increase. Education is one of the sectors, which are mostly affected by this situation. Poverty is another reason, which may hinder members of the community in supporting teachers and schools financially so that they can access instructional materials. According to another study, Parents and communities' participation differ from rural to urban communities and from one mode of economy to another. Parents who are involved in cash crops economy have economic ability to finance education compared to parents

who are not involved in cash crop economy. For example, pastoral communities such as Masai have displayed poor financing strand for their children. Teachers who work in such areas have more challenges in accessing instructional materials. Another challenge that teachers face in accessing instructional materials is lack of clear policy and monitoring mechanisms to ensure that enough funds are provided to community secondary schools for purchasing instructional materials and also these funds are used for the intended purpose.

According to the comments of a scholar, government's Policy towards efficient provision of these aspects of educational resources has not been encouraging and has always not been well planned, monitored, supervised and evaluated with rural schools as the back bench of implication of these policies.There are a number of strategies, which can be used in order to minimize the challenges of attaining and using quality instructional materials[163]. According to studies done in different parts of the world including Africa, one of the strategies is improvisation of instructional materials. A scholar states that improvisation involves sourcing, selection and deployment of relevant instructional materials into the teaching-learning focus in the absence or shortage of standard materials for a meaningful realization of specified educational goals and objectives. According to some studies, creation of improvised media of low technological materials and resource-centred learning can enlarge the limited knowledge base of any course of study and enrich instruction to a guaranteed quality. It can also promote strategies that ensure the integration of technology in the teaching and learning process of basic science education. Their findings are in agreement with the findings of another scholar who observed that using technologies like simulation devices open new horizons for individual learning

tools, the environment resources and services. The use of ICT can also minimize some of the challenges in accessing instructional materials.

According to UNESCO (2004), the use and rapid spread of electronic communications has the capacity to affect the quality and efficiency of basic education throughout the world[165]. The ease with which teachers and students can gather information over the Internet on virtually any topic has the potential to transform instructional content and pedagogical practice. Moreover, courses developed by the best teachers in one country can be made available to students across many countries. Newer technology-based instructional strategies, incorporating the Internet and the World Wide Web (WWW), can therefore be used more to expand communication and increase access to resources. A scholar points out that ICT has potentials in increasing access and improving relevance and quality of education in developing countries. He further states the potentials of ICT as follows: ICTs greatly facilitate the acquisition and absorption of knowledge, offering developing countries unprecedented opportunities to enhance educational systems.

2.3.2 Teaching Competence and Academic Learning

A study surveyed support the hypothesis that student academic performance depends on a number of factors. Findings from studies identify students' effort/persistence, academic ambition, previous grades, parents' education, parents academic ambition for their wards, sex of the child, age of student, peer influence, and personal effort, academic ambition as factors that have a significant influence on the students' academic performance[166].

The Organization for Economic Cooperation and Development (OECD) has published the results of the international PISA 2012 with the participation of Peru among other 65

countries or territories. PISA (acronym for Program for International Student Assessment) is held every three years. It tests 15-year-old's competencies in mathematics, reading and science. PISA 2012 focused on mathematics, that is, the assessment presented more questions in this area, along with Reading and Science questions. In Peru, a nationally representative sample was assessed. This sample included 6035 15-year-old students, from 240 secondary schools or similar institutions in all regions of the country. Public, private, urban and rural institutions were included. While it is true that international comparisons make a significant contribution to the debate on quality of education, they should not be considered only as the final study on educational accomplishments. The results achieved by Peru in PISA 2012 in Mathematics are low. Peru's average score was 368 points. According to performance levels, PISA places students in 6 levels. On average, the assessed Peruvian students are located at Level 1, although a significant percentage (47%) is below level 1. In Science, the situation of Peruvian students is similar to that in mathematics. A score of 373 was obtained and, on average, students are also at Level 1[167].

Regarding reading competencies, while our students showed low results in PISA 2012 compared to other Latin American countries participating in PISA, an steadily progress over the last 11 years is reported in this area. Between 2001 and 2012 the Peruvian average has increased from 327 to 384 points. In the previous cycle, PISA 2009, we have increased in 14 points which is the highest progress among Latin American countries participating in PISA[168].

We share a finding formulated in PISA School failure and educational reforms. He states that it is a falsehood that the PISA report evaluates competencies. The truth is that this

assessment does not evaluate, but it examines based on a competency-based model which is no longer reduced to three subjects, but to certain aspects of these three subjects. For instance: language tests do not imply that the student writes a minimum text at any time. Students only have to choose between options, that is: objective tests of text type, which can often be guessed by chance. These are tests taken out of context that do not even measure what they say they measure, and these tests are performed in samples of population that are not representative of the group, since there is no group as such. The diversity of students, teachers, families, educational centers, autonomous communities and countries is so large that it invalidates these types of very standardized tests that do not really say anything, no matter how many experts persist in using them to explain the same thing that they could argue without them. Actually, they do not contribute to education and its improvement, especially when what is published in the media is entirely superficial and it lacks intellectual rigor[169].

In this vein, points out, referring to SIMCE (System for Measuring the Quality of Education, Mexico), that this type of tests "don't not measure the complexity of human learning, but the behaviors of training in issues that become the foundation of the curriculum content. This creed which involves tests like SIMCE do nothing but accept a poor and distorted understanding of students' progress." "School failure" is not tackled with exams and school systems do not improve by taking tests nonstop. Failure and success are market concepts which have never been considered in the educational world and we have to avoid the strong negative component they both imply. We observed a positivist bias that a scholar describes with these words: "It is studied what fits best in the method, which is best measured, while what it is not so easily quantifiable is invisible."

In this case, PISA has the positive aspect of explicitly stating its approach, and thus it doesn't intend to evaluate education as a whole, it doesn't even intend to make of it assessment the most important fact in education[170].

Teaching methods are the means or procedures that teachers use to aid students in having an experience, mastering a skill or process, or in acquiring an area of knowledge[171]. In addition, methodological competencies could further be characterized based on their functional elements: to adapt to effective work methods; to analyze the task to be performed; to begin the process; to perform the task and to analyze one's procedures. Different pedagogies could be used for lesson presentations in public senior secondary schools. Some of such methods include classroom discussion, discovery/inquiry, lecture/exposition, demonstration, collaboration, critical thinking, problem solving techniques, role play method, individual/group project, simulation and games, instructional scaffolding and excursions. The discussion/question and answer method employ the art of seeking information and stimulating thinking and elaboration at all levels of human reasoning to achieve given objective. The demonstration method requires teaching by displaying the instructional situation with an audio-visual explanation of an idea, process or product. It involves showing, doing and telling the students the point of emphasis and performing an activity so that students can observe how things are done in order to help prepare them to transfer theory to practical application.

Most studies use the distinction between declarative (knowing that) and procedural knowledge (knowing how)[172]. This approach is relevant as it focuses on understanding how knowledge is related to behaviour, or in other words, the quality of teaching performance. An investigation into the knowledge of teachers as 'learning specialists'

involves understanding how this knowledge functions in the teaching-learning process; more specifically, how teachers' apply their knowledge in making decisions, for example, about lesson design or making on-the-spot judgments in the classroom. A set of research studies conceptualizes the teaching profession as a 'clinical practice profession' and compares it to the medical profession. Some argue that decision-making is actually a basic teaching skill as decisions are made regularly by teachers while processing cognitively complex information about the student in order to decide alternatives for increasing their understanding, thus, making good pedagogical decisions hinges on the quality of the pedagogical knowledge held by the teacher. Therefore, there is no doubt whatsoever that a teacher with the right skills for teaching should be able to manage his time and classroom effectively and efficiently using the appropriate teaching techniques. The problem solving method can easily be compared to the questioning/development method, because both methods use questions to get answers from students[173]. The problem solving method presents a problem first through formulating hypotheses, exploring mechanisms, developing and researching learning issues, and applying new information to the case.

Again, they learn by trying different approaches to solving problems such as the role play method. One or more students adopt a specified role and try to play the role[174],[175],[176]. The method according to the University of New Mexico School of Medicine develops problem solving and verbal expression skills of students, provides practice to build skills before real-world application and when real experiences are not readily available, can provide an entirely new perspective on a situation and develop insights about feelings and relationships and improves the likelihood of transfer by learning from the classroom to

the real world[177]. However, most scholars have argued that most classroom instructional delivery in most subjects are dominated with the traditional teacher-centered approach which is the lecture or expository method of teaching. The aforementioned scholars are of the view that it does not give students the opportunity to generate their own ideas and test hypotheses. It was therefore concluded that this form of instruction and learning hampers creativity and does little to foster innate abilities for problem solving and decision making.

Another scholar revealed that the in-depth pedagogical knowledge of teachers make them able to use various methodologies suited to deliver a lesson. The full understanding of content makes them confident about selection of teaching strategies and skills which are best for student understanding. Furthermore, teachers are expected also to demonstrate a thorough understanding of the content of their curricular areas[178]. They should be able to communicate this content material to students using methodologies that are appropriate for the age and abilities of the learners. In the same vein, a scholar in an empirical study found that pedagogical skills to a high extent influence students' academic performance as well as no significant difference between the

mean responses of male and female SS2 students on the extent teachers' pedagogical skills influence students' performance in public senior secondary schools in Port Harcourt Metropolis of Rivers State [179,180]. This was translated to mean that pedagogical skills of the teacher enhance students' academic performance[181].

2.4 Conceptual Framework

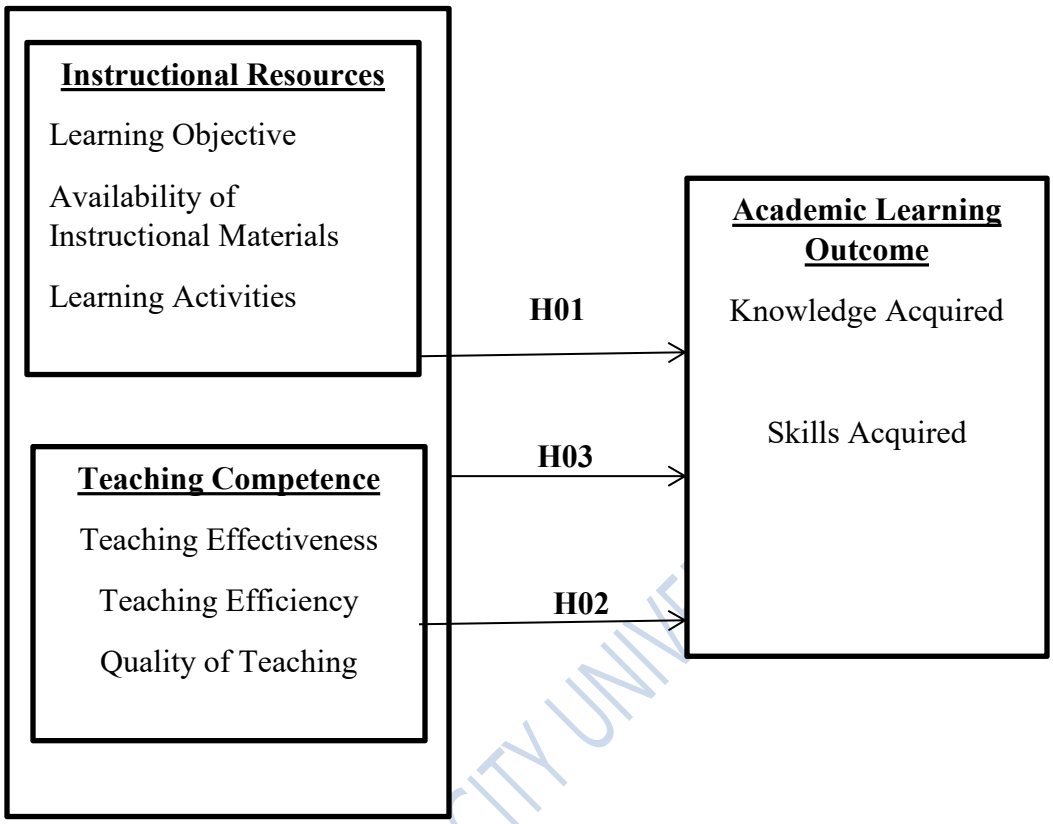


Figure 2.2: Conceptual Model of Instructional Resources, Teaching Competence and Academic Learning Outcome

Source: Researcher's Conceptual Model, (2021)

As conceptualized diagrammatically above, the dependent variable is academic learningwith three measures which are content, knowledge and skills, these three measures were adopted.[1] The first independent variable isinstructional resources which ismeasured with learning objective, assessment and learning activities while the second independent variable is teaching measured with effectiveness, efficiency and quality teaching. In the first hypothesis,the measures of instructional resources will be tested on the measures of academic learning outcome of students of government-owned

polytechnics, Lagos State, Nigeria, in the second hypothesis,it indicates that measures of teaching will be tested on the measures of academic learning outcome of students of government-owned polytechnics, Lagos State, Nigeria while the third hypothesis indicates the combine influence of the two independent variables (instructional resources and teaching) will be tested on the measures of academic learning outcome of students of government-owned polytechnics, Lagos State, Nigeria.

2.5 Summary of Literature Reviewed

This chapter has reviewed related literature relevant to this research work. The reviewed literature on concept of academic learning, examined the meaning of academic learning, explores empirical findings and discusses different context and criteria of academic learning. The literature review reveals that content, knowledge and skills paradigm in the educational sector as core component of academic learning outcome which determines the performance and or otherwise of education received by the students.

Literature is replete with various meaning of academic learningsector with increased clamor for use of instructional resources and impactful teaching activities from all stakeholder involved. The extent to which the products or the results of the education provided (the knowledge, skills and values acquired by the students) meet the standards stipulated in the system's educational objectives; and the extent to which the knowledge, skills and values acquired are relevant to human and environmental conditions and needs. Further, the notion of academic learning outcome should also consider such determinants as provision of teachers, buildings, curriculum, equipment, textbooks, and the teaching process. This view of academic learning outcome implies that quality cannot be measured by looking only at the outcome which is examination results. Rather it should consider

the analysis of the internal efficiency of the school system, which enables control for wastages that come in the form of school dropouts, repetition rates, poor examination results, low survival rates, average study time per student, and wastage ratios. It was submitted that academic learning outcome is dwindling or continuously decreasing in Nigeria due to decline investment in instructional resources and recruitment of substandard teachers. Review of literature on academic learning outcome in this study has revealed paucity studies on core variables influencing continuous retrogression of academic performance of students in Nigeria especially in government-owned polytechnics, Lagos State, Nigeria.

A study responds to the recent calls for more quality in academic learning outcome on issues such as knowledge acquisition, skills acquisition and content of course, relationships with other types of academic learning outcome synchronous patterns of adoption of technological and non-technological learning, and effects of their joint adoption on teaching competence. More generally, it tackles the gap identified by the researcher in the lack of a comprehensive study of teaching competence in the literature. A step was taken in the direction by developing aconceptual model of instructional resources, teaching competence and academic learning outcome of students to advance a more nuanced understanding of the antecedents, synchronous patterns and effects of instructional resources on quality academic learning. In doing so, we argue and confirm the dual role of internal and external knowledge in the generation of teaching competence, the cumulative nature of the generation of instructional resources, complementarity between teaching competence and academic learning, and combinative effects of instructional resources andteaching competence on academic learning.

2.6 Appraisal of Reviewed Literature

The review focused on what influence of instructional materials is globally, discussed to Africa, Nigeria and to government-owned polytechnics, Lagos State, Nigeria considering the learning objectives, assessment and learning activities. The concept also assessed teaching of students of government-owned polytechnics, Lagos State, Nigeria by looking into it effectiveness, efficiency and quality teaching so as to improve standard of knowledge and skills acquired by the students and also revealed gaps in the contents of the syllabus so as to eventually fill the gaps for better academic performance.

Studies established that most of the instructional resources needed for knowledge and skills are not available and the little that is available are not up-to-date, which is affecting teaching effectiveness and effiiceny[29]. Review of teaching shows that most of these institutions have poor teaching methods implementation which occur as a result of not being able to use instructional resources for each course[18].

Studies also show that teachers and students are faced with many challenges on the issues of non-availability of instructional and low teaching effectiveness; several scholars have also studied use of instructional resources and teaching methods on academic learning outcome of students[51]. From literature there are few studies that have combined instructional resources and teaching on academic learning outcome dimensions for better job performance globally but none in the study population. This is a gap that this study intends to fill.

In the review, the types of instructional materials were identified and these included printed and references materials, graphic materials, display materials, project materials,

audio and other visual and community resources. The characteristics of instructional materials were also identified as including the following appeal to senses (sound and sight), attract and hold attention, flexibility, simplicity, visibility, clarity, accuracy, sufficiency, purposefulness etc. Also, the importance and uses of instructional materials in our educational setting were treated. This is because, they are of prime importance to both dull and bright students as they aid learning by aiding the sense of seeing, hearing etc., making lesson more interesting, directing teaching to its goals, arousing students interest and motivating them to learn and develop the sense of imagination and comparison.

The factors affecting the instructional materials usage were discussed. Among which included number of learners or students involved, the space of time available, facilities and materials available, interest and ability of agricultural science teachers and effectiveness of instructional materials. Also, the problems militating against effective use of agricultural instructional materials were equally treated which included emotion and feelings, self-concepts or personal or audience perception, educational level of the learners or students' cultural background, motivation, etc. Some of the criteria for selecting and evaluating instructional materials were treated as seen or observed in our secondary schools or as related to the materials which included purpose, availability and durability, appropriateness and cost effectiveness.

Endnotes

1. B.I. Omodan, & C. TSOTETSİ, *Student-Teacher Relationship as A Panacea for Students' Academic Performance in Nigerian Secondary Schools: An attachment perspective*. **Journal of Social Studies Education Research**, *9*(4) 2018, pp.82-101.

2. M. Mirvald, & M. Tománková, *The Determinant of Success in Basic Economics Courses Taught by the Department of Economics at the University of Economics in Prague*. **International Journal of Economic Sciences**, *7*(1) 2018, pp.82-90.

3. N.D.S. Chetty, L. Handayani, N.A. Sahabudin, Z. Ali, N. Hamzah, N.S.A. Rahman, & S. Kasim, *Learning Styles and Teaching Styles Determine Students' Academic Performances.* **International Journal of Evaluation and Research in Education**, *8*(4) 2019, pp.610-615.

4. R. Ernawati, *March Influence of Peer Group Conformity on Moral Identity and Penchant for Watching Violent Television Shows on Aggressive Behavior in University Christian Indonesia*. **In International Symposium on Social Sciences, Education, and Humanities (ISSEH 2018)** 2019, pp. 35-37.

5. T. Bouffard. J. Boisvert, C. Vezeau, & C. Larouche, *The Impacts of Goal Orientation on Self-Regulation and Performance Among College Students*. **British Journal of Educational Psychology**, 65 2018, pp.317-329.

6. K.A. Odunjo-Saka, S.A. Saka, & A.M. Lawal, *Gender Difference and Peer Pressure In Conformity of A Sample of Adolescents In Senior Secondary School*. **Nigerian Journal of Applied Behavioural Sciences**, 606 2018, pp.615.

7. C. Fu, & N. Mehta, *Ability Tracking, School And Parental Effort, And Student Achievement: A Structural Model And Estimation*. **Journal of Labor Economics**, *36*(4) 2018, pp.923-979.

8. W.J. He, A *4-year longitudinal Study of the Sex-Creativity Relationship in Childhood, Adolescence, And Emerging Adulthood: Findings of Mean and Variability Analyses*. **Frontiers in Psychology**, *9 2018*, pp.2331.

9. T. Olufemioladebinu, A.A. Adediran, & W.O. Oyediran, *Factors Influencing the Academic Achievement of Students in Colleges of Education in Southwest, Nigeria.* **Journal of Education and Human Development,** *7*(3) 2018, pp.109-115.

10. M.E. Yigermal, *The Determinants Of Academic Performance Of Under Graduate Students: In the case of Arba Minch University, Chamo Campus*. **Online Submission**, *3*(4) 2017, pp.35-42.

11. A. Riswanto, & S. Aryani, *Learning Motivation And Student Achievement: Description Analysis And Relationships Both*. **The International Journal of Counseling and Education**, *2*(1) 2017, pp.42-47.

12. T. Dembo, *Der Argeralsdynamisches Problem*. **Psychol. Forsch**, 15 2019, pp. 1- 144. Retrieved from: http://www.gestalttheory.net/cms/uploads/pdf/archive/1934_1960/theory_regression_frustration_lewin.pdf

13. GUO, P. & Z. XIN, *The Phenomenon And Mechanism Of Intergenerational Transmission Of Economic Attitudes And Behaviors*, **Advances in Psychological Science**, *28*(7) 2020, pp.1199.

14. C. Desforges, & A. Abouchaar, *The Impact Of Parent Involvement, Parent Support And Family Education On Pupil Achievement And Adjustment: A literature review*. **Department of Education and Skill: Queen's Printer**. 2020.

15. A. L. Diaz, *Personal, family academic factors affecting low achievement in secondary school.* **Electronic Journal of Research in Educational Psychology and Psychopedagogy**, 1 (1) 2019, pp. 43-66.

16. S. Grüner, *Rethinking How Risk Aversion And Impatience Are Linked With Cognitive Ability: Experimental findings from agricultural students and farmers*. **Journal of Environmental Economics and Policy**, 2021, pp.1-12.

17. M. K. Eamon, *Social-demographic, school, neighbourhood and parenting influence on academic achievement of Latino young adolescents.* **Journal of youth and adolescence**, 34 (2), 2018, pp.163-175.

18. P. U. Ekeh, *Gender bias and achievement in science and mathematics among school pupils. Implications for human resource development*. **Journal of Curriculum Organization of Nigeria**, 10 (1), 2017. 30-33.

19. G.A. Gobena, Factors affecting in-service teachers' motivation: Its implication to quality of education***. International Journal of Instruction***, *11*(3) 2018, pp.163-178.

20. R. Kumar, A. Zusho, & R. Bondie, *Weaving cultural relevance and achievement motivation into inclusive classroom cultures*. **Educational Psychologist**, *53*(2) 2018, pp.78-96.

21. S.W. Kim, K.E. Brown, E.J. Kim, & V.L. Fong, *"Poorer Children Study Better": How Urban Chinese Young Adults Perceive Relationships Between Wealth And Academic Achievement*. **Comparative Education Review**, *62*(1) 2018, pp.84-102.

22. M., Mariana, *The Relationship Between Parents Socio-Economic Background And Students' Science Literacy in Indonesia Evidence from Programme for International Students Assessment PISA 2015.* ***In Social Sciences, Humanities and Economics Conference (SoSHEC)*** 2017, pp. 231-234.

23. E.T. Ampofo, & O.O. Benedict, *Determinants of academic performance among senior high school (shs) students in the ashanti mampong municipality of Ghana.* **European Journal of Research and Reflection in Educational Sciences** *3*(3) 2015, pp. 33- 48.

24. M.N. Hansen & A. Mastekaasa, *Social origins and academic performance at University*. **European Sociological Review**, *22*(3) 2006, pp.277-291.

25. L. Mortada, J. Bolboland & S. Kadry, Factors affecting students' performance a case of private Colleges in Lebanon. **J Math Stat Anal**, *1* 2018, pp.105.

26. O.C. Akueyinwa & L.N. Nwobi, *Assessment of availability and adequacy of instructional resources for quality assurance in Colleges of Education in Anambra State.* **Journal of Educational Research & Development,** *4*(1) 2021, pp. 209 - 214.

27. N. Anthony, N. Obeten, O. Bassey, O. Usang & A. Benjamin, *Evaluation of the extent of funding and supervision in the implementation of the Universal Basic Education Programme in schools of Cross River State, Nigeria. Türk Fizyoterapi ve Rehabilitasyon Dergisi/Turkish*, **Journal of Physiotherapy and Rehabilitation**. 32 2021, pp. 31939-31954.

28. P.C., Israel, *Assessment of curriculum load of the National Commission for Colleges of Education's minimum standard for Nigeria Certificate in Education*, **Journal of Research and Opinion**, *7*(1) 2020, pp.2599-2605.

29. C.A. Obiukwu & L.N. Nwobi, *Assessment of availability and adequacy of instructional resources for quality assurance in Colleges of Education in Anambra State,* **Journal of Educational Research and Development,** 4(1) 2021, pp.209 - 214

30. E.E. Essien, *Influence of school location on students' academic achievement in social studies in Colleges of Education in Cross River State, Nigeria,* **Journal of Research in Science and Technology**, 7 (2), 2017.

31. Uchenu, C.A., C.I. Okeke-Okonkwo, & C.C. Ifi, *Improving business education programmes through effective school-industry collaboration for nation building*, **Nigerian Journal of Business Education (NIGJBED)**, *6*(1) 2019, pp.158-171.

32. A. A. Adeogum, *The principal and the financial management of public secondary schools in Osun State*, **Journal of Educational System and Development**. 5(1) 2001, pp.1 – 10.

33. N. Issacar, & A.O. Hesbon, Instructional learning materials' use and Students academic outcomes in private Secondary Schools in Rwanda: A case study of Nyarugenge District. **Journal of Education**, *4*(7) 2021, pp.76-93.

34. E.O. Osuntuyi, *Influence of school environment on pupils' academic achievement in basic technology in Public Junior Secondary Schools in Ekiti State, Nigeria,* **IJO-International Journal of Business Management,** *4*(05) 2021, pp.32-43.

35. F.N. Nnajiofor, & C.E. Ejikeme, *Teachers' utilization of instructional technology for quality teaching of business studies in Secondary Schools in Enugu State, Nigeria*. **European Journal of Education Studies,** 6(12) 2020, pp. 207-226.

36. E. Haulle, & E. Kabelege, *Relevance and quality of textbooks used in Primary Education in Tanzania: A case of social studies textbooks,* **Contemporary Education Dialogue,** *18(1) 2021, pp.12-28.*

37. J.L. Tety, *Role of instructional materials in academic performance in community secondary schools in Rombo District, Department of Administration, Planning And Policy Studies, Open University of Tanzania*, **Unpublished Masters Dissertation,** 2016.

38. K.D. Cook, E. Dearing, & H.D. Zachrisson*, Is parent–teacher cooperation in the first year of school associated with children's academic skills and behavioral functioning?,* **International Journal of Early Childhood**, *50*(2) 2018, pp.211-226.

39. Amos, A.O., Ehimen, E.J., Paul I, O. and Sariat, A.O., *Comparative study of research project supervision on the performance of graduating business students in Nigerian Universities*, **Annales Universitatis Mariae Curie-Skłodowska. Sectio H. Oeconomia,** *52*(6) 2018, pp.7-23.

40. P. N. Chonjo, *The quality of Education in Tanzania primary schools: an assessment of physical facilities and teaching learning materials*. **UTAFITI** (new series) l(1) 2018, pp.36-47.

41. K. Dodge, *Socialization mediators of the relation between socio-economic status and child conduct problems*, **Child Development**, 65(2) 2017, pp. 649-665.

42. S. Fredrick, *Comparative analysis of lecture theatre performance parameters' importance to students learning experience*, **Proceedings of the 3rd International Conference** on Infrastructure Development in Africa – Abeokuta, Nigeria, 17th-19th March, 2014.

43. G.I. Earthman, Examining *Methodological Differences: Research on the Relationship between School Building Condition and Student Achievement*, **Educational Planning**, *25*(3) 2018, pp.47-61.

44. N. Nnorom, & C.M. Obianuju, *Improvisation in science instruction and the roles of science teachers: An educational innovations for sustainable developments. Coou,* **Journal of Educational Research**, *6*(1) 2021,

45. P.M. Smudde, *Teaching public relations: Principles and practices for effective learning*. Routledge, Smudde, P.M. (2019). Teaching Public Relations: Principles and Practices for Effective Learning (1st ed.). Routledge, 9780367822132, pp. 186

46. E.Y. Dotse, *A tablet based tool to aid learning of mathematics for basic 1 and 2 pupils in Berekuso* (**Doctoral dissertation**), 2019.

47. T. Gumennykova, V. Pankovets, M. Liapa, V. Miziuk, N. Gramatyk, & L. Drahiieva, *Applying instructional design methods to improve the effectiveness of blended-learning*, **International Journal of Management**, *11*(5) 2020, pp.31-42.

48. R. Zidny, S. Jesper & E. Ingo, "*A multi-perspective reflection on how indigenous knowledge and related ideas can improve science education for sustainability*." **Science & Education,** 29(1), 2020, pp.145-185.

49. O.T. Amie-Ogan, B. Edo, & P.M. Elenwo, *Perceived Influence of Management of Material Resources on Quality Service Delivery in Junior Secondary Schools in Rivers State.* **International Journal of Contemporary Academic Research**, *3*(2) 2022, pp. 18-28.

50. Durmus, A. & M. Güven, *The relationship between teaching styles of English instructors and learning styles of english prep class students at a Turkish State University.* **Asian Journal of University Education**, 16 (3) 2020, pp.15-26

51. J. Savignon, *Communicative competence: theory and classroom practice: texts and contexts in second language learning*. **New York: McGraw-Hill**, 9780070837362, 2018.

52. S.L. Mark, T. Tretter, L. Eckels, & A. Strite, An *equity lens on science education reform-driven classroom-embedded assessments*, **Action in Teacher Education**, *42*(4) 2020, pp.405-421.

53. T. Mäntylä, & J. Poranen, Combining *physics and mathematics learning: discovering the latitude in pre-service subject teacher education. in: pospiech*, **Cham: Springer**, (G. Michelini & M., Eylon), 978-3-030-04627-9, 2019, pp. 161–176

54. I. Rajagopalan, *Concept of Teaching*. **Shanlax International Journal of Education**, *7*(2) 2019, pp.5-8.

55. L.J. Hebert Jr, J. Alulis, J.D. Alvis, L. Bradizza, T. Burns, C. Holloway, M.P. Nichols, D. Schaeffer, & T.V. Svogun, *The soul of statesmanship: Shakespeare on nature, virtue, and political wisdom*. **Maryland: Rowman & Littlefield**, 9781498543279, 2018

56. G. L. Evan, *Jewish and Islamic Philosophy: Crosspollinations in the Classic Age*. **Edinburgh: University Press**. 2019. pp. 25–6.

57. K. Gilvary, *The Fictional Lives of Shakespeare* **NewYork: Routledge**, 9781351186070, 2017, pp. 260

58. W. Shakespeare, *Romeo and Juliet. In One-Hour Shakespeare,* **NewYork: Routledge**, 9780429262715 2020, pp. 304-368

59. B. William John, *An inquiry into the philosophy and religion of Shakspere.* **London: C. Mitchell**, OCLC 162952347, 1978.

60. B. Ju, *The roles of the psychology, systems and economic theories in human resource development*. **European Journal of Training and Development**, *43*(1/2) 2019, pp.132-152.

61. S. Pinn-Atkinson & J. Woolloff, *Creative themes for groupwork and personal development*. **London: Routledge**, 9781315171685, (eBook) 2018.

62. S.A. Azhary, S. Supahar, K. Kuswanto, M. Ikhlas, & I.P. Devi, *Relationship between behavior of learning and student achievement in physics subject.* **Jurnal Pendidikan Fisika Indonesia,** *16*(1) 2020, pp.1-8.

63. O.O. Adebayo, & S.Q. Adigun, *Impact of instructional aids on students' academic performance in physics in secondary schools in Federal Capital Territory (FCT) Abuja, Nigeria.* **European Scientific Journal, ESJ**, *14*(4) 2018, pp.366-376.

64. S.A. Opare, F.O. Manu, J.K. Ackah, & S.M. Akrosumah, *An investigation into teaching and learning materials (TLMs) science tutors use to assess physics lessons in the colleges of education in Ghana.* **American Journal of Modern Physics and Application**, *5*(4) 2018, pp.91-96.

65. M.F. Faremi, *An assesment of teacher retention and job security in private secondary schools in Ogun State, Nigeria.* **Bulgarian Journal of Science & Education Policy**, *11*(2) 2017, pp. 279-293.

66. T.O. Abiodun, M.A. Ogundeji & A.A. Asanre, *Teachers'skills as predictors of students'academic achievement in mathematics in Ogun State, Nigeria.* **Sapientia Foundation Journal of Education, Sciences and Gender Studies**, *2*(3) 2020, pp. 69 – 76.

67. O.O. Adebayo & S.Q. Adigun, *Impact of instructional aids on students' academic performance in physics in secondary schools in Federal Capital Territory (FCT) Abuja, Nigeria.* **European Scientific Journal, ESJ**, *14*(4) 2018, pp.366-376.

68. M.D. Omeodu, *Impact of practical work in the teaching of physics in secondary schools in Rivers State.* **International Journal of Education and Evaluation**, *4*(5) 2018, pp.12-22.

69. A.I.A. Ekezie & O.O. Tugwell, *Assessment of the capacity building needs of agricultural science teachers for innovative instructional delivery in secondary schools in Rivers State, Nigeria.* ***INVOTEC*****,** *15*(2) 2019, pp.43-57.

70. A.O. Olufemi, Utilization of improvised resources for effective teaching and learning of agricultural science in secondary schools in Ibarapa Area of Oyo State. **Capital Journal of Educational Studies (CAJES)**, *6*(2) 2020, pp.15-24.

71. M.U. Gwamna, Integrating Information and Communication Technology in Teaching Physics beyond Covid-19. **Journal of Educational Assessment and Pedagogical Process (JEAPP) Online Journal***, 1*(1) 2020.

72. S. A. Jegede & J. O. Adedajo, *Enriching physics education in Nigeria and enhancing a sustainable Technological Development.* **Greener Journal of Research**, 3(2), 2015. 80-84.

73. B.G. Abidogun, M.A. Lamidi, A.F. Adebowale, & O.M. Adeyemi, *Efficacy of interactive multimedia on children learning outcomes in primary schools in Lagos State : Innovation and technology for sustainable educational development*, **Ibadan: Lineage Publishing House**, 978-978-58895-6-7, p.100.

74. J. Kim, and M. Sun, *The implementation and potential effects of teacher evaluation under local control.* **School Effectiveness and School Improvement**, *32*(2) 2021, pp.279-305.

75. R. Blatchford, *The teachers' standards in the classroom*. **Singapore: Learning Matters Sage**, 9781529725247, 2020.

76. A.O. Philip & O. John, *Influence of educational input and process variables on ability of pupils with special needs to complete their study: A study of South-West, Nigeria.* **The Journal of Advocacy and Rehabilitation in Special Education**, December 2019. Vol. 18, issue 1, Pp. 1-7. *The Journal*, *18*(1) 2019, pp.1-7.

77. M.D. Omeodu & J.F. Abara, *Relevance of field trips in teaching and learning of physics in secondary schools in Port Harcourt Metropolis Rivers State.* **International Journal of Education and Evaluation***, 4 (4)* 2018, pp.67-87.

78. W. Tomaszewski, N. Xiang, Y. Huang, M. Western, B. McCourt, & I. McCarthy, *The Impact of Effective Teaching Practices on Academic Achievement when Mediated by Student Engagement: Evidence from Australian High Schools.* **Education Sciences**, *12*(5) 2022, pp.358.

79. C. Greenhow, S.M. Galvin, & K.B. Staudt Willet, *What should be the role of social media in education?* **Policy Insights from the Behavioral and Brain Sciences**, *6*(2) 2019, pp.178-185.

80. S. Hartinah, S. Suherman, M. Syazali, H. Efendi, R. Junaidi, K. Jermsittiparsert & U.M.A.M. Rofiqul, *Probing-prompting based on ethnomathematics learning model: The effect on mathematical communication skill*. **Journal for the Education of Gifted Young Scientists**, *7*(4) 2019. pp.799-814.

81. L.E. Kim, V. Jörg, & R.M. Klassen, *A meta-analysis of the effects of teacher personality on teacher effectiveness and burnout*. **Educational psychology review**, *31*(1) 2019, pp.163-195.

82. S.M. Solanki, & D. Xu, *Looking beyond academic performance: The influence of instructor gender on student motivation in STEM fields.* **American Educational Research Journal**, *55*(4) 2018, pp.801-835.

83. A.C. Obodo, M.I. Ani, & M. Thompson, *Effects of improvised teaching-learning materials on the academic performance of junior secondary school students in basic science in Enugu State, Nigeria*. **Journal of Research & Method in Education**, 10(4) 2020, pp. 23-30.

84. R.M. Ingersoll, P. Sirinides P. Dougherty, *Leadership matters: Teachers' roles in school decision making and school performance*. **American Educator**, 42(1) 2018, pp.13.

85. E. Argyropoulou, *International organizations of educational planning, government policies and school management and leadership*. **China-USA Business Review**, 17(2) 2018, 53-63.

86. E. Collins, *Overemphasis on certificates than competence: An indicator of failed educational standard in Nigeria.* **Intermational Journal of Education and Evaluation**, 4(9) 2018, pp.28-36.

87. E. Abad-Segura, M.D. González-Zamar, J.C. Infante-Moro, G. Ruipérez, *Sustainable management of digital transformation in higher education: Global research trends*. **Sustainability**, 12(5) 2020.

88. M. Robert, J. Todd, B.J. Ngowi, S.E. Msuya, A. Ramadhani, V. Sambu, I. Jerry, M.R. Mujuni, M.J. Mahande, J.S. Ngocho, & W. Maokola, *Determinants of isoniazid preventive therapy completion among people living with HIV attending care and treatment clinics from 2013 to 2017 in Dar es Salaam Region, Tanzania*: *A cross-sectional analytical study*. **BMC infectious diseases**. 20(1) 2020, pp.1-9.

89. J. Muyaka, D.E. Omuse, F.L. Malenya, *Manifestations of boys' under participation in education in Kenya: the case of Busia and Kirinyaga counties*, *compare.* **A Journal of Comparative and International Education**. 2(4) 2021, pp. 1-6.

90. S. Ahmed, L.E. Chase, J. Wagnild, N. Akhter, S. Sturridge, A. Clarke, P. Chowdhary, D. Mukami, A. Kasim, & K. Hampshire, *Community health workers and health equity in low-and middle-income countries: systematic review and recommendations for policy and practice.* **International journal for equity in health**, 21(1) 2022, pp.1-30.

91. J.M. Kieti, *An investigation into factors influencing students' academic performance in public secondary schools in Matungulu sub-county, Machakos County* (**Doctoral dissertation**) 2018.

92. S.N. AMaijo, *Impact of school feeding programme on learners' academic performance in mlunduzi ward, Tanzania*. **International journal of educational studies**, *5*(3), 2018. pp.125-130.

93. V. Mykhnenko, *Causes and consequences of the war in Eastern Ukraine: an economic geography perspective*. **Europe-Asia Studies**, *72*(3) 2020, pp. 528-560.

94. R. Bougie, & U. Sekaran, *Research methods for business: A skill building approach*. **New York: John Wiley & Sons**, (Lise, Johnson) 9781119609254, 2019.

95. M.E. Khuzwayo & K. Booi, *Transformation of assessment of the pre-service life sciences teachers: issues of curriculum development in education and training in South Africa.* **International Journal of Learning, Teaching and Educational Research**, *20*(7) 2021, pp. 44-60.

96. N.A. Wardrop, W.C. Jochem, T.J. Bird, H.R. Chamberlain, D. Clarke, D. Kerr, L. Bengtsson, S. Juran, V. Seaman, & A.J. Tatem, *Spatially disaggregated population estimates in the absence of national population and housing census data*. **Proceedings of the National Academy of Sciences**, *115*(14) 2018, pp.3529-3537.

97. E.B. Ekeng, C. Abuo, & O.G. *Amuchi, Inclusive counselling education for entrepreneurial and national development*. **International Journal of Education and Evaluation,** *6*(3), 2020. pp.24-34.

98. A.D. Wardani, I. Gunawan, D.E. Kusumaningrum, D.D.N. Benty, R.B. Sumarsono, A. Nurabadi, L. Handayani, E. Ubaidillah, & S. Maulina, *How teachers optimize the role of classroom administration in learning?.* In *6th* **International Conference on Education and Technology (ICET 2020)** 2020, pp. 422-426.

99. N. Samuel, S.A. Onasanya, & M.O. Yusuf, Engagement, learning styles and challenges of learning in the digital era among Nigerian secondary school students. **International Journal of Education and Development using Information and Communication Technology**, *15*(4) 2019, pp.35-43.

100. K.O. Ajayi, M.O. Onibeju, & D.O. Olutayo, Teachers' qualification, attitude and mastery of content as correlates of students' academic achievement in economics in Lagos State, Nigeria. **KIU Journal of Humanities**, *5*(1) 2020, pp.315-324.

101. E.O. Osuntuyi, Influence of school environment on pupils' academic achievement in basic technology in public junior secondary schools in Ekiti State, Nigeria. **IJO-International Journal of Business Management,** *4*(05) 2021, pp.32-43.

102. L. Messac, *Birthing a nation: political legitimacy and health policy in hastings kamuzu Banda's Malawi*, 1962–1980. **Journal of Southern African Studies**, *46*(2) 2020, pp.209-228.

103. D.L. Brown, & N.L. Glasgow, *Capacity building and rural government adaptation to population change.* In *Rural Policies for the 1990s* . **New York: Routledge**, 9780429305115, 2019, pp. 194-208.

104. D. Bylieva, V. Lobatyuk, A. Safonova, & A. Rubtsova, *Correlation between the practical aspect of the course and the e-learning progress.* **Education Sciences**, *9*(3) 2019, p.167.

105. A.G. Ngwacho, COVID-19 *pandemic impact on Kenyan education sector: Learner challenges and mitigations.* **Journal of Research Innovation and Implications in Education**, *4*(2) 2020, pp.128-139.

106. K.G.A. Bedriñana, J.A.R. Martín, & F.T. Añaños, *Human Rights in the Least Developed Countries of Asia: An Index for Quantifying Sustainable Development Goal 3 (Good Health and Wellbeing).* **International Journal of Environmental Research and Public Health**, *18*(9) 2021, pp.4747.

107. G. Lawrent, *School infrastructure as a predictor of teacher identity construction in Tanzania: The lesson from secondary education enactment policy*. **African Studies**, *79*(4), 2020. pp.409-427.

108. A. Zięba, *Google Books Ngram Viewer in socio-cultural research*. **Research in Language (RiL)**, *16*(3) 2018, pp.357-376.

109. R. Fitriansyah, L. Fatinah, & Syahril, M. *Critical Review: Professional Development Programs to Face Open Educational Resources in Indonesia.* **Indonesian Journal on Learning and Advanced Education** *(IJOLAE)*, *2*(2) 2020, pp.109-119.

110. D. Hilty, S. Chan, J. Torous, J. Luo, & R. Boland, *A framework for competencies for the use of mobile technologies in psychiatry and medicine: Scoping review.* **JMIR mHealth and uHealth,** *8*(2) 2020, pp.e12229.

111. I.N. Udosen, *Instructional media: An assessment of the availability and frequency of use by social studies teachers*. **Journal of Educational Media and Technology (JEMT).** 15(2) 2011, pp.141 -146.

112. A. Bozkurt, I. Jung, J. Xiao, V. Vladimirschi, R. Schuwer, G. Egorov, S. Lambert, M. Al-Freih, J. Pete, D. Olcott Jr. & V. Rodes, *A global outlook to the interruption of education due to COVID-19 pandemic: Navigating in a time of uncertainty and crisis*. **Asian Journal of Distance Education**, *15*(1) 2020, pp.1-126.

113. Y.L. Mashala, *The impact of the implementation of free education policy on secondary education in Tanzania.* **International Journal of Academic Multidisciplinary Research (IJAMR)**, *3*(1) 2019, pp.6-14.

114. A. Almanthari, S. Maulina, & S. Bruce, *Secondary school mathematics teachers' views on e-learning implementation barriers during the cOVID-19 pandemic: The case of Indonesia.* **Eurasia journal of mathematics, science and technology education**, *16*(7) 2020, pp. 2-9.

115. K. Kullasepp, & G. Marsico, Conclusion: The bordering process in mind and society. in *identity at the borders and between the borders*, **New York: Springer Cham**, 978-3-030-62267-1_8, (Kullasepp, K., Marsico, G.) 2021, pp. 109-115

116. A.A.S. Fauzi, N. Abdullah, N.N.A. Azlan, & A.S.M. Zahari, *A study of determinant factors towards the quality teaching among teachers at primary school in Bentong District.* **In 1st Economics and Business International Conference 2017 (EBIC 2017)**, 2018, pp.307-316

117. V. Rogers-Horton, 2022. *District and School Leaders' Perceptions of Recruitment and Retention of Teachers of Color in Public K-12 Rural Tennessee Schools* (**Doctoral dissertation, Lincoln Memorial University**).

118. L.U. Dikeocha, Assessment of the impact of Tetfund on management of business teacher education in colleges of education in the South East Zone. **Nigerian Journal of Business Education (NIGJBED)**, *8*(3) 2022, pp.24-35.

119. P. Kumar, A. Kumar, S. Palvia, & S. Verma, Online business education research: systematic analysis and a conceptual model. **The International Journal of Management Education**, *17*(1) 2019, pp.26-35.

120. B. Briggs, *Teaching methods as correlate of student performance in business studies in selected public secondary schools in Port Harcourt***. International Journal of Innovative Social and Science Education Research**, *7*(2) 2019, pp.1-12.

121. A. Kwilinski, N. Dalevska, S. Kravchenko, I. Hroznyi, & O. Kovalenko, *Formation of the entrepreneurship model of e-business in the context of the introduction of information and communication technologies.* **Journal of Entrepreneurship Education**, *22 (1)* 2019 pp.1-7.

122. J.E. Edokpolor, & D.N. Dumbiri, *Resource adequacy and utilization for teaching and learning effectiveness in vocational education programmes in south-south Nigerian universities.* **Journal of vocational education studies**, *2*(1) 2019, pp.1-12.

123. I.U. Ukoette, P.J. Etim, & E.A. Effiong, Electronic learning as educational innovation and students'academic performance in university of Uyo, Akwa Ibom State, Nigeria, **Nigerian Journal of Business Education (NIGJBED),** *6*(2) 2019, pp.444-453.

124. O.A. Ojo, & E.O. Adu, *The effectiveness of Information and Communication Technologies (ICTs) in teaching and learning in high schools in Eastern Cape Province.* **South African Journal of Education**, *38*(1) 2018.

125. G.O. Onajite, O.N. Olaniyi, D.O. Oyerinde, M. Onyesom, & M.A. Aina, *Teachers utilization of instructional materials for effective teaching of business studies in junior secondary schools in Delta State*. **Mediterranean Journal of Social Sciences**, *10*(6) 2019, pp.27-27.

126. C.P. Scott, T.A. Dieguez, P. Deepak, S. Gu and J.L. Wildman, *Onboarding during COVID-19: Create structure, connect people, and continue adapting,* **Organizational Dynamics**, *51*(2) 2022, pp.100828.

127. I. Haris, F. Naway, W.T. Pulukadang, H. Takeshita, & I.V. Ancho, *School supervision practices in the indonesian education system; perspectives and challenges,* **Journal of Social Studies Education Research**, *9*(2) 2018, pp.366-387.

128. M.O. Fasakin, & C.F. Ayeni, *The menace of cultism in Nigeria tertiary institutions: Implications for educational development in Nigeria.* **Journal of Contemporary Issues in Educational Planning and Administration**, *5*(2) 2020, pp.139.

129. N.O. Ifeanyi, I.C. Irene, A.C. Justina, & N.U. Virginus, *Use of information and communication technologies for agricultural teaching and research in universities in Enugu State, Nigeria,* **Journal of Agricultural & Food Information**, *20*(1) 2019, pp.71-85.

130. L.H. Olaniyi, & B.A. Awe, Gap analysis and demographic differentiation of awareness of technology-based instructional resources among business educators, **Gender and Behaviour**, *19*(3) 2021, pp.18471-18479.

131. J.N. Ibrahim, M.O. Dauda, and A.G. Jibrin, *Utilization of biology laboratory teaching facilities and equipment in senior secondary schools in Borno State, Nigeria*, **Journal of Science, Technology and Education**, *9*(4) 2022, pp.152-170.

132. A.A. Ojo, *Integrating entrepreneurship Education into higher Education curriculum for self-reliance and National Development in Nigeria*, **Journal of Humanities**, *3*(4), 2019. pp.93-101.

133. F.K. Oluwalola, & O.T. Oyinloye, Modern office instructional facilities in office technology and management in polytechnics and insecurity management in Nigeria. ***FUOYE Journal of Education*,** 1(1) 2018, pp.121- 128.

134. O.N. Jacob, H.F. Josiah, & A.T. Solomon, *Effects of corruption on public universities administration in Nigeria.* **Emergent: Journal of Educational Discoveries and Lifelong Learning (EJEDL)**, *2*(7) 2021. pp.5-18.

135. C.M. Ile, and C.V. Okafor, *Implementers'ratings of resource challenges facing office technology and management programme in polytechnics in South-East, Nigeria.* **NAU Journal of Technology and Vocational Education,** *6*(1) 2021, pp.176-188.

136. O.G. Shaibu, O. Ameh, & S. Barinem, *Evaluation of business education in Nigeria: Challenges and chances*, **Nigerian Journal of Business Education (NIGJBED),** *3*(2), 2018. pp.272-282.

137. C.O. Igberaharha, Improving the Quality of Technical Vocational Education and Training (TVET) for Sustainable Growth and Development of Nigeria. *Journal of Education and e-Learning Research*, *8*(1), 2021. pp.109-115.

138. W.O. Anyim, *Perception of library users on the use of ICT facilities in Abia State polytechnic library, Nigeria,* **International Journal of Marketing & Human Resource Research,** *2*(3) 2021, pp.169-177.

139. K.A. Azhar, & N. Iqbal, *Effectiveness of Google classroom: Teachers' perceptions.* **Prizren Social Science Journal**, *2*(2) 2018, pp.52- 66.

140. R.I. Osarenren-Osaghae, & Q.O. Irabor, *Educational policies and programmes implementations: A case study of education funding, Universal Basic Education (UBE) and Teacher Education,* **International Journal of Educational Administration and Policy Studies,** *10*(8), 2018. pp.91-102.

141. T.L. Griffiths, *Understanding human intelligence through human limitations.* **Trends in Cognitive Sciences**, *24*(11) 2020, pp.873-883.

142. A.B. Fafunwa, *History of education in Nigeria*, **New York: Routledge** "(1974), eBook" 9780429454905, 2018.

143. K. Kohl, & C.A. Hopkins, *Learnings from the# IndigenousESD global research: Twenty-first century competencies for all learners*. **Journal of Teacher Education for Sustainability**, *22*(2), 2020. pp.90-103.

144. R.E. Slavin, *Educational psychology: Theory and practice*, **Boston: Allyn & Bacon** 9780-205-35143-3, 2019.

145. N.M. Nor, E. Rahimah, M. Habsah, Y. Kamariah, & N.R. Juliana, "*Effects of teachers' teaching competencies on students' academic performance mediated by holistic centered learning style based on SUMUR Program at Secondary Religious Schools."* **International Journal of Academic Research in Progressive Education and Development**, 8(2) 2019, pp. 25-38.

146. P. Inguva, D. Lee-Lane, A. Teck, B. Anabaraonye, W. Chen, U.V. Shah, & C. Brechtelsbauer, *Advancing experiential learning through participatory design*. **Education for Chemical Engineers**, *25* 2018, pp.16-21.

147. B.D. Wilkinson, G. Shank, & F. Hanna, *Epistemological issues in counselor preparation: An examination of constructivist and phenomenological assumptions*. **The Journal of Counselor Preparation and Supervision**, *12*(4) 2019, p.13.

148. M.H. Immordino-Yang, L. Darling-Hammond, & C.R. Krone, *Nurturing nature: How brain development is inherently social and emotional, and what this means for education*. **Educational Psychologist**, *54*(3) 2019, pp.185-204.

149. A. Tahirsylaj, & D. Sundberg, *The unfinished business of defining competences for 21st century curricula—a systematic research review*. **Curriculum Perspectives**, *40*(2) 2020, pp.131-145.

150. D.K.N. Eteokleous-Grigoriou, *To cite this document: Despo Ktoridou Nikleia Eteokleous-Grigoriou,(2011)," Developing digital immigrants' computer literacy: the case of unemployed women"*, **Campus-Wide Information Systems**, 28 (3) 2018. pp. 154-163.

151. N.A. Sarkam, N.I.A. Hasan, N.I. Jamil, & N.A. Jamal, *Factor that affect the level of awareness among malaysian toward the COVID-19 Pandemic: A structural equation modeling approach***. Solid State Technology**, *63*(6), 2020. pp.17940-50.

152. M. Dzimińska, J. Fijałkowska, & Ł. Sułkowski, *Trust-based quality culture conceptual model for higher education institutions*. **Sustainability**, *10*(8) 2018, pp.2599.

153. D. Mueller, *Wikipedia: The Free Encyclopedia*, **Retrived from** https://online.ucpress.edu/jams/article-abstract/72/1/279/109693/Review-Wikipedia-The-Free-Encyclopedia. 2019.

154. A. James, and C. Nerantzi, *The power of play in higher education: Creativity in tertiary learning. Cham*, **Switzerland: Palgrave Macmillan**, 978-3-319-95780-7, 2019, pp.31

155. I. Prykhodko, S. Horielyshev, Y. Matsehora, V. Lefterov, S. Larionov, O. Kravchenko, M. Baida, O. Halkina, & O. Servachak, *Automation of psychological selection procedures for personnel to specific activities*. **Pertanika Journal of Science & Technology**, *30*(1), 2022, pp. 761-776

156. Babajanova, K. *Enhancing pedagogical competence in modern pedagogy*. **Academic research in educational sciences**, *2*(2) 2021, pp.1055-1059.

157. B. Philipsen, J. Tondeur, N. Pareja Roblin, S. Vanslambrouck, & C. Zhu, *Improving teacher professional development for online and blended learning: A*

systematic meta-aggregative review. **Educational Technology Research and Development**, *67*(5), 2019. pp.1145-1174.

158. R.D. Saidovna, *Pedagogical creativity as a factor of student development.* **Web of Scientist: International Scientific Research Journal**, *2*(05) 2021, pp. 729-736.

159. F. Zeehan, R.A. Alias, & Z. Tasir, Discovering digital technology training challenges for future-ready educator: A preliminary study from trainer perspective. **Univers. J. Educ. Res,** *8*(3A) 2020, pp.12-23.

160. N. Pellas, P. Fotaris, I. Kazanidis, & D. Wells, *Augmenting the learning experience in primary and secondary school education: A systematic review of recent trends in augmented reality game-based learning.* **Virtual Reality**, *23*(4) 2019, pp.329-346.

161. R. Bakar, *The influence of professional teachers on Padang vocational school students' achievement*. **Kasetsart Journal of Social Sciences**, *39*(1) 2018, pp.67-72.

162. S.Bal-Taştan, S.M.M. Davoudi, A.R. Masalimova, A.S. Bersanov, R.A. Kurbanov, A.V. Boiarchuk, & A.A. Pavlushin, *The impacts of teacher's efficacy and motivation on student's academic achievement in science education among secondary and high school students.* **EURASIA Journal of Mathematics, Science and Technology Education**, *14*(6) 2018, pp.2353-2366.

163. A.C. Ayo, & O.G. Oludele, *Evaluation of the implementation of the universal basic education Yoruba language curriculum in south western Nigeria*. **Theory and Practice in Language Studies**, *9*(12) 2019, pp. 1465-1473.

164. V.B.H. Nguyen, T.M.H. Vu, T.K.H. Hoang, & T.M.N. Nguyen, *Vietnamese education system and teacher training: Focusing on science education.* **Asia-Pacific Science Education**, *6*(1) 2020, pp.179-206.

165. F. B. Amie-Ogan, & T.O. Omunakwe, *Perceived influence of teachers' quality on students' academic performance in public senior secondary schools in Port Harcourt Metropolis of Rivers State, Nigeria.* **International Journal of Innovative Social & Science Education Research** 8(3) 2020, pp.146-161.

166. T.O. Amie-Ogan, & F.B. Omunakwe, *Perceived influence of teachers" quality on students" academic performance in public senior secondary schools in Port Harcourt Metropolis of Rivers State, Nigeria.* **International Journal of Innovative Social & Science Education Research**, *8*(3) 2020, pp.146-161.

167. H.A. Maulana, *Psychological Impact of Online Learning during the COVID-19 Pandemic: A Case Study on Vocational Higher Education.* **Indonesian Journal of Learning Education and Counseling,** *3*(2) 2021, pp.130-139.

168. E.M. DeFilippis, A.C. Stefanescu Schmidt, & N. Reza, *Adapting the educational environment for cardiovascular fellows-in-training during the COVID-19 pandemic*. **Journal of the American College of Cardiology**, *75*(20) 2020, pp.2630-2634.

169. S.W. Schmidt, *Our time is now: How the events of 2020 will shape the field of adult education*. **Adult Learning**, *33*(1) 2022, pp.40-42.

170. J. König, D.J. Jäger-Biela, & N. Glutsch, *Adapting to online teaching during COVID-19 school closure: teacher education and teacher competence effects among early career teachers in Germany*. **European Journal of Teacher Education**, *43*(4) 2020, pp.608-622.

171. J.S. Buwah, V.I. Wannang, & S.L. Duktur, Business teacher education and training: a panacea for educational challenges. **Nigerian Journal of Business Education (NIGJBED),** *8*(1) 2021, pp.111-120.

172. Akanbi, G.O. & A.A. Jekayinfa, *Education and emancipation, educational policies and «de-emancipation»: A history of the Nigerian education system from 1914 to 2014*. **Espacio, Tiempo y Educación**, *6*(2) 2019, pp.177-196.

173. I.U. Anazia, *Quantitative and Verbal Aptitudes as Predictors of Senior Secondary School Students' Performance in Economics*. **IAFOR Journal of Education**, *7*(1), 2019, pp.7-18.

174. O.T. Amie-Ogan, & E.E. Friday, *Influence Of Teachers' Competence On Students' Academic Performance In Public Senior Secondary Schools In Ikot Ekpene And Essien Udim Local Government Areas Of Akwa Ibom State*. **International Journal of Innovative Social Sciences & Humanities Research** 8(4) 2020, pp.118-128.

175. D.D. Liebowitz, & L. Porter, *The effect of principal behaviors on student, teacher, and school outcomes: A systematic review and meta-analysis of the empirical literature*. **Review of Educational Research**, *89*(5) 2019, pp.785-827.

176. T.T. Morris, N.M. Davies, D. Dorling, R.C. Richmond, & G.D. Smith, Testing the validity of value-added measures of educational progress with genetic data. *British Educational Research Journal*, *44*(5) 2018, pp.725-747.

177. D. Barnes, *Practical curriculum study*. **London**: **Routledge**, 9780429454721, 2018, pp.528.

178. F.F. Nchuchuwe & E. Etim, *Human capital development and service delivery in Lagos State: A study of selected ministries*. **Asian Journal of Advanced Research and Reports,** *12*(2) 2020, pp.10-19.

179. L.R. Octaberlina, & A.I. Muslimin, *EFL students perspective towards online learning barriers and alternatives using Moodle/Google Classroom during COVID-19 pandemic.* **International Journal of Higher Education**, *9*(6) 2020, pp.1-9.

180. K. Neumann, V. Kind, & U. Harms, *Probing the amalgam: the relationship between science teachers' content, pedagogical and pedagogical content knowledge*. **International Journal of Science Education**, *41*(7) 2019, pp.847-861.

181. A.M. Kenni, *Analysis of students' performance in chemistry in the west African senior school certificate examination (WASSCE) and national examination council (NECO) from 2015-2018.* **International Journal of Research and Analytical Reviews,** *7*(1) 2020, pp.35-49.

Chapter Three

Methodology

This chapter presents the methodology used in this study. It includes the research design strategies employed, population, sample, data collection and operation of variables.

3.1 Research Design

This study adopted descriptive survey research design which was used to carry out this study. The advantage of the design is its robustness with respect to distribution of data is easy to compute the detailed information that can be derived from the test; it is used in studies for which parametric assumptions cannot be met, and its flexibility in handling data.

3.2 Population of the Study

The population of this study consists of thirty-eight thousand nine hundred (38900) students of the two government-owned polytechnics in Lagos State which comprises of YABATECH and LASPOTECH.

Table 3.1: Population of the Study

S/N	Name of Tertiary Institutions	Number of Students	No of OTM Students
1.	Yaba College of Technology	21007	1926
2.	Lagos State Polytehnic	17893	1180
	Total	**38900**	**3106**

Source: Each School Administrative Department, 2022.

3.3 Sample and Sampling Technique

The sample size of the population is three hundred and eighty (380) which was chosen stratally to represent the total population from the students. This sample size was gotten from Krejcie and Morgan (1970)[1] sample size table as shown below.

Table 3.2: Table for Determining Sample Size of a Known Population

N	S	N	S	N	S	N	S	N	S
10	10	100	80	280	162	800	260	2800	338
15	14	110	86	290	165	850	265	3000	341
20	19	120	92	300	169	900	269	3500	346
25	24	130	97	320	175	950	274	4000	351
30	28	140	103	340	181	1000	278	4500	354
35	32	150	108	360	186	1100	285	5000	357
40	36	160	113	380	191	1200	291	6000	302
45	40	170	118	400	196	1300	297	7000	364
50	44	180	123	420	201	1400	302	8000	367
55	48	190	127	440	205	1500	306	9000	368
60	52	200	132	460	210	1600	310	10000	370
65	56	210	136	480	214	1700	313	15000	375
70	59	220	140	500	217	1800	317	20000	377
75	63	230	144	550	226	1900	320	30000	379
80	66	240	148	600	234	2000	322	**40000**	**380**
85	70	250	152	650	242	2200	327	50000	381
90	73	260	155	700	248	2400	331	75000	382
95	76	270	159	750	254	2600	335	100000	384

Source: Krejcie and Morgan (1970) Sample Size Determinant

As seen on the table above, the sample size would be three hundred and eighty (380) students of government-owned polytechnics in Lagos State, Nigeria. It is also noteworthy that 34 which represented 10% of sample size was added to address anticipated non-response; hence the sample size is 380 (i.e. 346 + 34).

Table 3.3 Stratified Sampling Calculation for the Sample Used

S/N	Name Institutions	% of total population	Calculated no for each sample
1.	Yaba College of Technology	$\frac{21007}{38900}$ X 100 = 54%	$\frac{54\ X\ 380}{100}$ = 205
2.	Lagos State Polytechnic	$\frac{17893}{38900}$ X 100 = 46%	$\frac{46\ X\ 380}{100}$ = 175
	Total		**380**

Source: Field Survey, 2022

From table 3.3, the number of copies of questionnaires that were distributed to Yaba College of Technology were 205 and 175 were distributed to Lagos State Polytechnic.

3.4 Description of Research Instrument

The instrument that was used is tagged Instructional resource; Teaching and Academic Learning Outcome Scale (IRTALO Scale). Structured questionnaire was used to gather data from the respondents because it was used to analyze the structured questions and responses easily to achieve the study's objective. The study adopted the likert scale design which allowed the researcher in listing options where respondents choose from. The instrument is made up of four sections.

Section A: This section was to collect demographic information of respondents which were: gender, age, and eductational level of the students.

Section B: This section was used to collect data on academic learning outcome. Academic learning outcome scale consists of three dimensions; knowledge acquired, skills acquired and contents which is aimed at examining the students' learning ability in

the selected polytechnics with 12 items. The items were adapted from existing literature as a guide in formulating the questions[2,3,4] (Cronbach alpha was tested). Example of question is; school syllabus is updated to encourage e-learning. The scale will use a four-point response format of Very High (VH) =4, High (H) = 3, Low (L) = 2, Very Low (VL) = 1. Cronbach Alpha was reported.

Section C: Instructional resources (IRQ) scale consists of three sub-variables of learning objectives, assessments and teaching activities with 12 items. The items were adapted from existing literatures on instructional resources. The scale used a four-point response format of 4=Strongly Agree, 3=Agree, 2= Disagree and 1=Strongly Disagree. This section of the questionnaire was answered by the students; example of question is result are received electronically. Cronbach Alpha was reported.

Section D: Teaching scale (TQ)) scale consists of three sub-variables of effectiveness, efficiency and quality of teaching with 11 items. The items were adapted from existing literatures on teaching. The scale used a four-point response format of 4=Strongly Agree, 3=Agree, 2= Disagree and 1=Strongly Disagree. The research instrument was divided into various sections which was designed to elicit responses on the topic under investigation, example of question is, provision of basic amenities for effective teaching. Cronbach Alpha was reported.

3.5 Validity of the Research Instrument

To validate this study, instrument was gathered through related literature review and adaptation from questionnaires that have been used by other researchers. Content and construct validity was be done. Content validity was used to assess the internal validity of the research instruments which was ascertained through the supervisor and other experts

in information management field**.** Corrections made wereincorporated in constructing the final questionnaire which was given out to the respondents for the study.

3.6 Reliability of the Research Instrument

In ensuring validity of the data, questionnaire was tested by subjecting it to the inspection of HR of the institutions under study who gave their opinions as to whether the hypotheses used to measure the concepts were valid so as to ensure it covers all variables under study. The researcher subjected the questionnaire to a reliability test to check the internal consistency of all items measuring each variable in the study. The reliability of the instrument was done through a pilot study using thirty (30) copies of the questionnaire that was administered to the students of Lagos State University (LASU) which was not part of the study. Data obtained was subjected to Cronbach's alpha reliability test to establish internal consistency of the items.

Table 3.2: Summary of Reliability Test

Validate	**Cronbach Alpha**
Academic Learning	0.840
Teaching Competence	0.705
Instructional Resources	0.740

Source: Researcher's Fieldwork, 2022

3.7 Method of Data Collectin and Administration of Research Instrument

A primary data was collected to address the objectives of the study through a structured questionnaire in line with existing literature. This instrument works well with a cross-section survey design mainly because it supports the collection of data regarding opinion and perception of respondents at a point in time on current issues.

A letter of introduction was obtained from the Department of Information Management, Lead City University which was used to gain permission to conduct the survey from the management of the selected polytechnics in Lagos State, Nigeria. Due to number of respondents, a three (3) day training was conducted for four (4) research assistants to ease the administration, retrieval and initial sorting of copies of the questionnaires. In all, 380 copies of questionnaires was administered to the students of Yaba College of Technology (YABATECH) and Lagos State Polytechnics (LASPOTECH), Lagos State, Nigeria.

3.8 Method of Data Analysis

The researcher analyzedthe data using the descriptive statistics for the research questions and inferential statistics for the hypotheses. The use of the descriptive statistics is appropriate because it helps to describe and summarize data in terms of frequency distribution, mean, standard deviation, and percentage of response about variables under study, thereby answering the research questions. To test the hypotheses formulated, the inferential statistics through multiple regression analysi was used to test all the three hypotheses at 0.05 level of significance. The data collected for the study was analyzed using Statistical Package for Social Sciences (SPSS), version 24.

Endnote

1. N. Blaikie, *Confounding issues related to determining sample size in qualitative research.* **International Journal of Social Research Methodology**, *21*(5) 2018, pp.635-641.

2. G.O. Onajite, O.N. Olaniyi, D.O. Oyerinde, M. Onyesom, & M.A. Aina, *Teachers utilization of instructional materials for effective teaching of business studies in junior secondary schools in Delta State.* **Mediterranean Journal of Social Sciences**, *10*(6) 2019, pp.27-27.

3. I.U. Ukoette, P.J. Etim, & E.A. Effiong, Electronic learning as educational innovation and students'academic performance in university of uyo, akwa ibom state, Nigeria. **Nigerian Journal of Business Education (NIGJBED)**, *6*(2) 2019, pp.444-453.

4. M. Borgstede, & M. Scholz, *Quantitative and Qualitative Approaches to Generalization and Replication–A Representationalist View*. **Frontiers in psychology**, *12* 2021, pp.605191.

Chapter Four

Results and Discussion of Findings

This chapter dealt with data presentation, analysis and the interpretation of the results. The analysis is guided by the specific objectives and the hypotheses that were formulated in the study. The first section shows the presentation of the descriptive analysis using tables showing percentages and interpretation below the tables. Section two presents inferential statistics and discussion of findings comes at the later end of the chapter. The results presented were based on the research questions and hypotheses, which the study set out to answer and examine. Data was analyzed using SPSS version 24.

4.1 Data Presentation

A total of three hundred and eighty (380) copies of questionnaire were administered, and three hundred and fifty-nine (359) copies were returned. After sorting the questionnaires only three hundred and forty-seven (347) copies were certified as duly filled and considered usable. The useable questionnaire represented 91% response rate. The response results are presented in Table 4.1.

Table 4.1: Response Rate

Response Rate:	**Frequency**	**Per cent (%)**
Returned and used	347	91%
Not Returned/Returned but not used	33	9%
No of distributed Questionnaire	380	100%

Source: Field Survey Data (2022)

Table 4.2: Demographic Characteristic of Respondents

Variables	Category	Frequency	Percentage
Gender	Male	175	50.4%
	Female	172	49.6%
Age	20-25 years	163	47.0%
	26-30 years	172	49.6%
	31-35 years	8	2.3%
	36years& above	4	1.15%
Educational level	ND1	206	59.35%
	ND2	129	37.2%
	HND1	8	2.3%
	HND2	4	1.15%

Source: Field Survey Results (2022)

Table 4.2 presents respondents' demographic characteristics which were gender of the respondents, age of the respondents and educational level. The data according to gender indicated that 175 respondents representing 50.4% were male while 172 respondents representing 49.6% were female, indicating that the number of male students were slightly higher than the female students.

Demographic and personal profile of respondents as shown in table 4.2 by age revealed that 163 respondents representing 47.0% were between the ages of 20-25 years, 172 respondents representing 49.6% were between 26-30 years, 8 respondents representing 2.3% were between 31-35 years, and 4 respondents representing 1.15% were between 36 years and above, indicating that most of the respondents were between 26-30 years. Also, 206 respondents representing 54.35% had ND1, 124 respondents representing 37.2%

ND2, 8 respondents representing 2.3% had HND1, and 4 respondents representing 1.15% had HND2.

4.2 Response to the Research Questions

Research Question One: What is the level of academic learning outcome of OTM students of government-owned polytechnics, Lagos State, Nigeria?

Table 4.3: Descriptive Analysis of Responses on the Level of Academic Learning Outcome of OTM Students of Government-Owned Polytechnics, Lagos State, Nigeria

Content	**VH**	**H**	**L**	**VL**	**Mean**
School syllabus is updated to encourage e-learning	195 (56.2%)	46 (13.3%)	39 (11.2%)	69 (19.30%)	3.08
Lecturers encourage e-learning while delivering their lectures	103 (29.7%)	117 (33.7%)	89 (25.6%)	38 (11.0%)	2.82
Developing course outline with NBET guideline	111 (32.0%)	108 (31.1%)	80 (23.1%)	48 (13.8%)	2.81
Covering course outline before the commencement of examination every semester	119 (34.3%)	91 (26.2%)	82 (23.6%)	55 (15.9%)	2.79
Knowledge	**VH**	**H**	**L**	**VL**	**Mean**
Maintaining good quality of education at all times	136 (39.2%)	105 (30.3%)	55 (15.9%)	51 (14.7%)	2.94
Students in my school can compete with students from the private schools	100 (28.8%)	133 (38.3%)	80 (23.1%)	34 (9.8%)	2.86
Students with excellent results (distinction, upper credit) are produced every end of year	106 (30.5%)	109 (31.4%)	101 (29.1%)	31 (8.9%)	2.84
Students perform excellently during lecture	106 (30.5%)	100 (28.8%)	82 (23.6%)	59 (17.0%)	2.73
Skills	**VH**	**H**	**L**	**VL**	**Mean**

Students in my school participating in extra-curricular activities	130 (37.5%)	101 (29.1%)	75 (21.6%)	41 (11.8%)	2.92
Vocational skills are encouraged in my school	80 (23.1%)	131 (37.8%)	101 (29.1%)	35 (10.1%)	2.74
Students that have interest in games are encouraged	73 (21.0%)	118 (34.0%)	101 (29.1%)	55 (15.9%)	2.60
ICT skills are encouraged	83 (23.9%)	76 (21.9%)	73 (21.0%)	115 (33.1%)	2.37
Weighted Mean					2.79

Decision rule 1.00 – 1.49= very low, 1.50 – 2.49= low, 2.50 – 3.49 = high, 3.50-4.00= very high.
Note: Very High (VH) =4, High (H) = 3, Low (L) = 2, Very Low (VL) = 1
Source: Field Survey Data (2022)

According to results in Table 4.3. 56.2% of respondents rated very high that school syllabus is updated to encourage e-learning, 13.3% high, 11.2% low and 19.0% very low. On average, the respondents indicated that school syllabus is updated to encourage e-learning has a mean of 3.08. Results also indicated that 29.7% of respondents rated very high that lecturers encourage e-learning while delivering their lectures, 33.7% high, 25.6% low, and 11.0% very low. On average, the respondents indicated that lecturers encourage e-learning while delivering their lectures has a mean of 2.82. Results also indicated that 32.0% of the respondents rated very high that they develop course outline with NBET guideline, 31.1% high, 23.1% low, and 13.8% very low. On average, the respondents indicated that they develop course outline with NBET guideline has a mean of 2.81. Results also indicated that 34.3% of the respondents rated very high that they cover course outline before the commencement of examination every semester, 26.2% high, 23.6% low, and 15.9% very low. On average, the respondents indicated that they cover course outline before the commencement of examination every semester has a mean of 2.79.

According to results in Table 4.3. 39.2% of respondents rated very high that they maintain good quality of education at all times, 30.3% high, 15.9% low, and 14.7% very low. On average, respondents indicated that they maintain good quality education at all times has a mean of 2.94. Results also indicated that 28.8% of respondents rated very high that the students in their school can compete with students from the private schools, 38.3% high, 23.1% low, and 9.8% very low. On average, the respondents indicated that students in their school can compete with students from the private schools has a mean of 2.86. Results also indicated that 30.5% of the respondents rated very high that students with excellent results (distinction, upper credit) are produced every end of the year, 31.4% high, 29.1% low, and 8.9% very low. On average, the respondents indicated that students with excellent results (distinction, upper credit) are produced every end of year has a mean of 2.84. Results also indicated that 30.5% of the respondents rated very high that students perform excellently during lecture, 28.8% high, 23.6% low, and 17.0% very low. On average, the respondents indicated that students perform excellently during lecture has a mean of 2.73.

According to results in Table 4.3. 37.5% of respondents rated very high that students in their school participating in extra-curricular activities, 29.1% high, 21.6% low, and 11.8% very low. On average, respondents indicated that students in my school participating in extra-curricular activities has a mean of 2.92. Results also indicated that 23.1% of respondents rated very high that vocational skills are encouraged in their school, 37.8% high, 29.1% low, and 10.1% very low. On average, the respondents indicated that vocational skills are encouraged in their school has a mean of 2.74. Results also indicated that 21.0% of the respondents rated very high that students that have interest in games are

encouraged, 34.0% high, 29.1% low, and 15.9% very low. On average, the respondents indicated that students that have interest in games are encouraged has a mean of 2.60. Results also indicated that 23.9% of the respondents rated very high that ICT skills are encouraged, 21.9% high, 21.0% low, and 33.1% very low. On average, the respondents indicated that ICT skills are encouraged has a mean of 2.37.

Overall, the weighted mean for academic learning outcome is 2.79 and this suggest that the respondents agree with many of the statement representing academic learning outcome in government-owned polytechnics, Lagos State, Nigeria. Despite an overall mean of 2.79 which shows that level of teaching competence in government-owned polytechnics, Lagos State, Nigeria is moderately high, more effort is required by the management of government-owned polytechnics, Lagos State to ensure that ICT skills amongst the students are encouraged, likewise encourage students that have interest in games that boast mental development, and ensure vocational skills are encouraged amongst the student as this will provide opportunity to bring learning experience to use. This should improve level of academic learning outcome among OTM students in government-owned polytechnics, Lagos State, Nigeria.

Research Question Two: What is the level of instructional resources available for academic learning outcome in government-owned polytechnics, Lagos State, Nigeria?

Table 4.4: Descriptive Analysis of Responses on the Level of Instructional Resource Available in Government-Owned Polytechnics, Lagos State, Nigeria

Learning Objectives	SA	A	D	SD	Mean
Learning objectives are achieved with	205	104	17	21	3.42

the aid of the right resources	(59.1%)	(30.0%)	(4.9%)	(6.1%)	
Teaching through projectors make learning easier	121 (34.9%)	166 (47.8%)	45 (13.0%)	15 (4.3%)	3.13
The school management provide electronic materials (tablets) for easy learning	93 (26.8%)	136 (39.2%)	80 (23.1%)	38 (11.0%)	2.82
Results are received electronically	95 (27.4%)	162 (46.7%)	60 (17.3%)	30 (8.6%)	2.93
Assessment	**SA**	**A**	**D**	**SD**	**Mean**
Availability of print resources (textbooks, handouts) for learning	148 (42.7%)	130 (37.5%)	51 (14.7%)	18 (5.2%)	3.18
Availability of visual resources (computer/laptop/projectors) for learning	99 (28.5%)	149 (42.9%)	67 (19.3%)	32 (9.2%)	2.91
Availability of electronic resources (internet or Wi-Fi) to access learning materials	100 (28.8%)	136 (39.2%)	76 (21.9%)	35 (10.1%)	2.87
Availability of audio-visuals resources for learning	92 (26.5%)	136 (39.2%)	99 (28.5%)	20 (5.8%)	2.86
Learning Activities	**SA**	**A**	**D**	**SD**	**Mean**
Reading materials on the internet (web pages) are encouraged	141 (40.6%)	143 (41.2%)	48 (13.8%)	15 (4.3%)	3.18
Encouragement of use of computer software	120 (34.6%)	151 (43.5%)	61 (17.6%)	15 (4.3%)	3.08
The school management encourages online learning classes	96 (27.7%)	163 (47.0%)	76 (21.9%)	12 (3.5%)	2.99
Use of required learning materials for teaching in class is encouraged	128 (36.9%)	141 (40.6%)	54 (15.6%)	24 (6.9%)	3.07
Weighted Mean for instructional facilities use					3.04

Decision rule 1.00 – 1.49= very low, 1.50 – 2.49= low, 2.50 – 3.49 = high, 3.50-4.00= very high.

Source: Field Survey Data (2022)

According to results in Table 4.4. 59.1% of respondents strongly agree that learning objectives are achieved with the aid of the right resources, 30.0% agree, 4.9% disagree

and 6.1% strongly disagree. On average, the respondents indicated that learning objectives are achieved with the aid of the right resources has a mean of 3.42. Results also indicated that 34.9% of respondents strongly agree that teaching through projectors make learning easier, 47.8% agree, 13.0% disagree, and 4.3% strongly disagree. On average, the respondents indicated that teaching through projectors make learning easier has a mean of 3.13. Results also indicated that 26.8% of the respondents strongly agree that the school management provide electronic materials (tablets) for easy learning, 47.8% agree, 13.0% disagree, and 4.3% strongly disagree. On average, the respondents indicated that the school management provide electronic materials (tablets) for easy learning has a mean of 2.82. Results also indicated that 27.4% of the respondents strongly agree that results are received electronically, 46.7% agree, 17.3% disagree, and 8.6% strongly agree. On average, the respondents indicated that results are received electronically has a mean of 2.93.

According to results in Table 4.4. 42.7% of respondents strongly agree that there is availability of print resources (textbooks, handouts) for learning, 37.5% agree, 4.9% disagree, and 6.1% strongly disagree. On average, respondents indicated that there is availability of print resources (textbooks, handouts) for learning has a mean of 3.18. Results also indicated that 28.5% of respondents strongly agree that there is availability of visual resources (computer/laptop/projectors), 37.5% agree, 19.3% disagree, and 5.2% strongly disagree. On average, the respondents indicated that there is availability of visual resources (computer/laptop/projectors) for learning has a mean of 2.91. Results also indicated that 28.8% of the respondents strongly agree that there is availability of electronic resources (internet or Wi-Fi) to access learning materials, 39.2% agree, 21.9%

disagree, and 10.1% strongly disagree. On average, the respondents indicated that there is availability of electronic resources (internet or Wi-Fi) to access learning materials has a mean of 2.87. Results also indicated that 26.5% of the respondents strongly agree that there is availability of audio-visual resources for learning, 39.2% agree, 28.5% disagree, and 5.8% strongly disagree. On average, the respondents indicated that there is availability of audio-visual resources for learning has a mean of 2.86.

According to results in Table 4.4. 40.6% of respondents strongly agree that reading materials on the internet (web pages) are encouraged, 41.2% agree, 13.8% disagree, and 4.3% strongly disagree. On average, respondents indicated that reading materials on the internet (web pages) are encouraged has a mean of 3.18. Results also indicated that 34.6% of respondents strongly agree that they encourage the use of computer software, 43.5% agree, 17.6% disagree, and 4.3% strongly disagree. On average, the respondents indicated that they encourage the use of computer software has a mean of 3.08. Results also indicated that 27.7% of the respondents strongly agree that the school management encourages online learning classes, 41.0% agree, 21.9% disagree, and 3.5% strongly disagree. On average, the respondents indicated that the school management encourages online learning classes has a mean of 2.99. Results also indicated that 36.9% of the respondents strongly agree that the use of required learning materials for teaching in class is encouraged, 40.6% agree, 15.6% disagree, and 6.9% strongly disagree. On average, the respondents indicated that the use of required learning materials for teaching in class is encouraged has a mean of 3.07.

In all, the weighted mean for instructional facilities availability is 3.04 and this suggest that the respondents agree with many of the statement representing instructional facilities

availability in government-owned polytechnics, Lagos State, Nigeria. Despite an overall mean of 3.04 which shows that level of instructional facilities availability in government-owned polytechnics, Lagos State, Nigeria is moderately high, more effort is required by the management of government-owned polytechnics, Lagos State to ensure that encourages online learning classes, make provision for electronic resources (internet or Wi-Fi) to access learning materials, and audio-visuals resources for learning. These identified issues boast of aiding the quality of teaching, hence becomes imperative for management of government-owned polytechnics, Lagos State, Nigeria to provide its lecturers.

Research Question Three: What is the level of teaching competence in government-owned polytechnics, Lagos State, Nigeria?

Table 4.5: Descriptive Analysis of Responses on the Level of Teaching Competence in Government-Owned Polytechnics, Lagos State, Nigeria

Teaching Effectiveness	**SA**	**A**	**D**	**SD**	**Mean**
Provision of basic amenities for effective teaching	207 (59.7%)	83 (23.9%)	37 (10.7%)	20 (5.8%)	3.37
Knowledge is impacted through teaching by my lecturers	132 (38.0%)	162 (46.7%)	46 (13.3%)	7 (2.0%)	3.21
Class discussion is organized for teaching	145 (41.8%)	143 (41.3%)	45 (13.0%)	14 (4.0%)	3.21
Students engage in assignments and classwork for lecturers to ascertain the level of understanding`	139 (40.1%)	158 (45.5%)	35 (10.1%)	15 (4.3%)	3.21
Teaching Efficiency	**SA**	**A**	**D**	**SD**	**Mean**
Course outline are followed while teaching	159 (45.8%)	142 (40.9%)	36 (10.4%)	10 (2.9%)	3.30
Our lecturers are time conscious while	125	159	50	13	3.14

teaching	(36.0%)	(45.8%)	(14.4%)	(3.7%)	
Lecturers support students to sort out the difficult aspect of our course	113 (32.6%)	147 (42.4%)	66 (19.0%)	21 (6.1%)	3.01
Quality of Teaching	**SA**	**A**	**D**	**SD**	**Mean**
Lecturers demonstrate what is being taught during practical class	142 (40.9%)	133 (38.3%)	53 (15.3%)	19 (5.5%)	3.15
Laboratories are well equipped for understandable learning	115 (33.1%)	135 (38.9%)	72 (20.7%)	25 (7.2%)	2.98
Quality learning is taken into consideration while teaching	130 (37.5%)	138 (39.8%)	62 (17.9%)	17 (4.9%)	3.10
Weighted Mean for teaching competence					3.16

Decision rule 1.00 – 1.49= very low, 1.50 – 2.49= low, 2.50 – 3.49 = high, 3.50-4.00= very high.

Source: Field Survey Data (2022)

According to results in Table 4.5. 59.7% of respondents strongly agree that there is provision of basic amenities for effective teaching, 23.9% agree, 10.7% disagree, and 5.8% strongly disagree. On average, the respondents indicated that there is provision of basic amenities for effective teaching has a mean of 3.37. Results also indicated that 38.0% of respondents strongly agree that knowledge is impacted through teaching by their lecturers, 44.7% agree, 13.3% disagree, and 2.0% strongly disagree. On average, the respondents indicated that knowledge is impacted through teaching by their lecturers has a mean of 3.21. Results also indicated that 41.8% of the respondents strongly agree that class discussion is organized for teaching, 41.3% agree, 13.0% disagree, and 4.0% strongly disagree. On average, the respondents indicated class discussion is organized for teaching has a mean of 3.21. Results also indicated that 40.1% of the respondents strongly agree that students engage in assignments and classwork for lecturers to ascertain the level of understanding, 45.5% agree, 10.1% disagree, and 4.3% strongly

disagree. On average, the respondents indicated students engage in assignments and classwork for lecturers to ascertain the level of understanding has a mean of 3.21.

According to results in Table 4.5. 45.8% of respondents strongly agree that course outline are followed while teaching, 40.9% agree, 10.4% disagree, and 2.9% strongly disagree. On average, respondents indicated that course outline are followed while teaching has a mean of 3.30. Results also indicated that 36.0% of respondents strongly agree that their lecturers are time conscious while teaching, 45.8% agree, 14.4% disagree, and 3.7% strongly disagree. On average, the respondents indicated that their lecturers are time conscious while teaching has a mean of 3.14. Results also indicated that 32.6% of the respondents strongly agree that lecturers support students to sort out the difficult aspect of their course, 42.4% agree, 19.0% disagree, and 6.1% strongly disagree. On average, the respondents indicated that lecturers support students to sort out the difficult aspect of their course has a mean of 3.01.

According to results in Table 4.5. 40.9% of respondents strongly agree that lecturers demonstrate what is being taught during practical class, 38.3% agree, 15.3% disagree, and 5.5% strongly disagree. On average, respondents indicated that lecturers demonstrate what is being taught during practical class has a mean of 3.15. Results also indicated that 33.1% of respondents strongly agree that laboratories are well equipped for understandable learning, 38.9% agree, 20.7% disagree, and 7.2% strongly disagree. On average, the respondents indicated that laboratories are well equipped for understandable learning has a mean of 2.98. Results also indicated that 37.5% of the respondents strongly agree that quality learning is taken into consideration while teaching, 39.8% agree, 17.9%

disagree, and 4.9% strongly disagree. On average, the respondents indicated that quality learning is taken into consideration while teaching has a mean of 3.10.

Overall, the weighted mean for teaching competence is 3.16 and this suggest that the respondents agree with many of the statement representing teaching competence in government-owned polytechnics, Lagos State, Nigeria. Despite an overall mean of 3.16 which shows that level of teaching competence in government-owned polytechnics, Lagos State, Nigeria is moderately high, more effort is required by the management of government-owned polytechnics, Lagos State to ensure that lecturers operate at an optimum level by ensuring the provision of basic amenities for effective teaching, put in a system that guaranty lecturers support for students to sort out the difficult aspect of our course, and where necessary systematically train and motivate the lecturers so that effective and efficient learning can take place during class interaction. This should improve level of teaching competence in government-owned polytechnics, Lagos State, Nigeria.

4.3 Presentation of Test of Hypotheses

H_{01}: There is no significant influence of instructional resources on academic learning outcome of OTM students of government-owned polytechnic, Lagos State, Nigeria

The null hypothesis one which states thatthere will be no significant influence of instructional resources on academic learning outcome of OTM students of government-owned polytechnics, Lagos State, Nigeria was tested using multiple linear regression

analysis. In the analysis, the values of academic learning outcome of OTM students of government-owned polytechnics, Lagos State were regressed on the values of instructional resources sub-measure. The data for instructional resources (independent variable) was generated by adding responses of all variable items respectively while that of academic learning outcome of OTM students of government-owned polytechnics (dependent) was generated by adding responses of all items used to measure the variable. The regression test results are presented in Tables 4.6a-c.

Table 4.6a-c: Summary of Regression Analysis For The Influence Of Instructional Resources On Academic Learning Outcome of OTM Students Of Government-Owned Polytechnics, Lagos State.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.672[a]	.451	.442	.27881

a. Predictors: (Constant), Learning Objectives, Assessment, Learning activities

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	11.768	3	3.923	50.461	.000[b]
	Residual	14.303	184	.078		
	Total	26.070	187			

a. Dependent Variable: **Academic Learning Outcome**

b. Predictors: (Constant), Learning Objectives, Assessment, Learning activities

Coefficients[a]

Model	Unstandardized Coefficients	Standardized Coefficients	t	Sig.

		B	Std. Error	Beta		
1	(Constant)	.375	.211		1.773	.078
	Learning Objectives	.398	.070	.386	5.712	.000
	Assessment	.119	.063	.138	1.891	.060
	Learning activities	.330	.072	.297	4.598	.000

a. Dependent Variable: **Academic Learning Outcome**

Source: Field Survey Data (2022)

From the results in Table 4.6a, instructional resources have strong positive and statistically significant relationship with academic learning outcome of OTM students of government-owned polytechnics, Lagos State, Nigeria (R = 0. .672, $p<0.05$). The coefficient of determination (Adj. R^2) of 0.442 shows that instructional resources predict 44.2% of the variation in academic learning outcome of OTM students of government-owned polytechnics, Lagos State Nigeria, while the remaining 55.8% variation in academic learning outcome of OTM students of government-owned polytechnics in Lagos State is explained by other extraneous other than those examined. Table 4.6b presents the results of ANOVA (overall model significance) of regression test which revealed that instructional resources has a significant influence on academic learning outcome of OTM students of government-owned polytechnics, Lagos State. This can be explained by the F-value (50.461) and low p-value (0.000) which is statistically significant at 95% confidence interval. Hence, the result posited that instructional resources in use in government-owned polytechnics in Lagos State significantly influenced the academic learning outcome of its OTM students.

Furthermore, the results of regression coefficients in table 4.6c, revealed that at 95% confidence level, a unit change in Learning Objectives will lead to a 0.398 increase in the academic learning outcome of OTM students of governmentowned polytechnics, Lagos State, given that all other factors are held constant. Also, a unit change in Learning activities will lead to 0.330 increase in the academic learning outcome of OTM students of government-owned polytechnics, Lagos State, given that all other factors are held constant. Of all the instructional resources examined, Learning Objectives has the highest relative influence (Beta=0.398). In second position is

Learning activities (Beta= 0.330). However, assessment has insignificant relative influence. All the relative influence were positive and statistically significant at probability values less than 0.05 except assessment. On the strength of this result (Adj. R^2 = 0.440, F(3,184)= 50.461, p= 0.000), this study rejects the null hypothesis one ($H_0$1) which states that there will be no significant influence of instructional resources on academic learning outcome of OTM students of government-owned polytechnics, Lagos State.

$H_0$2: There is no significant influence of teaching competence on academic learning outcome of OTM students of government-owned polytechnic, Lagos State, Nigeria

The null hypothesis two which states thatthere will be no significant influence of teaching competence on academic learning outcome of OTM students of government-owned polytechnics, Lagos State, Nigeria was tested using multiple linear regression analysis. In the analysis, the values of academic learning outcome were regressed on the values of

teaching competence sub-measure. The data for teaching competence (independent variable) was generated by adding responses of all variable items respectively while that of academic learning outcome of OTM students of government-owned polytechnics, Lagos State (dependent) was generated by adding responses of all items used to measure the variable. The regression test results are presented in Tables 4.7a-c

Table 4.7a-c: Summary of regression analysis for the Influence of Teaching Competenceon Academic Learning Outcome of OTM Students of Government-Owned Polytechnics, Lagos State, Nigeria.

a. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.657[a]	.431	.424	.31955

a. Predictors: (Constant), Effectiveness, Efficiency, Quality of teaching

b. ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	19.196	3	6.399	62.664	.000[b]
	Residual	25.323	248	.102		
	Total	44.519	251			

a. Dependent Variable: Academic Learning Outcome

b. Predictors: (Constant), Efficiency, Effectiveness, Quality of teaching

c. Coefficients[a]

Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	T	Sig.
1	(Constant)	.987	.167		5.917	.000
	Efficiency	.151	.051	.183	2.962	.003
	Effectiveness	.316	.053	.360	5.978	.000
	Quality of teaching	.222	.050	.252	4.422	.000

a. Dependent Variable: Academic Learning Outcome

Source: Field Survey Data (2022)

From the results in Table 4.7a, teaching competence has strong positive and statistically significant relationship with the academic learning outcome of OTM students of government-owned polytechnics, Lagos State (R = 0. .657, $p<0.05$). The coefficient of determination (Adj. R^2) of 0.424 shows that teaching competence explain 42.4% of the changes in academic learning outcome of OTM students of government-owned polytechnics, Lagos State, while the remaining 57.6% variation in academic learning outcome of OTM students of government-owned polytechnics explained by external factors other than those examined. Table 4.7b presents the results of ANOVA (overall model significance) of regression test which revealed that teaching competence has a significant influence on academic learning outcome of OTM students of government-owned polytechnics, Lagos State. This can be explained by the F-value (62.664) and low p-value (0.000) which is statistically significant at 95% confidence interval. Hence, the result posited that teaching competence of teachers in government-owned polytechnics, Lagos State significantly influenced the OTM students' academic learning.

Furthermore, the results of regression coefficients in table 4.7c, revealed that at 95% confidence level, a unit change in Efficiency of teaching will lead to a 0.151 increase in the academic learning outcome of OTM students of government-owned polytechnics, Lagos State , given that all other factors are held constant. Also, a unit change in Effectiveness of teaching will lead to 0.316 increase in the academic learning outcome of OTM students of government-owned polytechnics, Lagos State, given that all other factors are held constant. Lastly, a unit change in Quality of teaching will lead to 0.222 increase in the academic learning outcome of OTM students of government-owned polytechnics, Lagos State, given that all other factors are held constant.

Given the teaching competence sub-variables examined, effectiveness of teaching has the highest relative influence (Beta=0.316). In second position is quality of teaching (Beta=0.222) and followed by efficiency of teaching (Beta=0.151). All the relative influence were positive and statistically significant at probability values less than 0.05. On the strength of this result (Adj. $R^2 = 0.424$, $F(3,248)= 62.664$, $p= 0.000$), this study rejects the null hypothesis two ($H_0 2$) which states that teaching competence will have no significant impact on the academic learning outcome of OTM students of government-owned polytechnics, Lagos State.

$H_0 3$: There is no combined significant influence of teaching competence and instructional resources on academic learning outcome of OTM students of government-owned polytechnic, Lagos State, Nigeria

The null hypothesis three which states thatthere will be no combined significant influence of use of instructional resources and teaching competence on academic learning outcome

of OTM students of government-owned polytechnics, Lagos State, Nigeria was tested using multiple linear regression analysis. In the analysis, the values of academic learning outcome were regressed on the values of instructional resources and teaching competence. The data for instructional resources and teaching competence (independent variable) was generated by summing responses of all variable items respectively while that of academic learning outcome of OTM students of government-owned polytechnics, Lagos State (dependent) was generated by adding responses of all items used to measure the variable. The regression test results are presented in Tables 4.8a-c

Table 4.8a-c: Summary of regression analysis for the influence of instructional resources and teaching competence on academic learning outcome of OTM students of government-owned polytechnics, Lagos State

a. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.744[a]	.554	.550	.28252

a. Predictors: (Constant), Instructional resources, Teaching competence

b. ANOVA[a]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	24.644	2	12.322	154.376	.000[b]
	Residual	19.875	249	.080		
	Total	44.519	251			

a. Dependent Variable: Academic learning outcome

b. Predictors: (Constant), Instructional resources, Teaching competence

c. Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	.709	.151		4.701	.000
	Instructional resources	.482	.057	.513	8.531	.000
	Teaching competence	.300	.063	.286	4.752	.000

a. Dependent Variable: Academic Learning outcome

Source: Field Survey Data (2022)

From the results in Table 4.8a, instructional resources and teaching competence has strong positive and statistically significant relationship with the academic learning outcome of OTM students of government-owned polytechnics, Lagos State ($R = 0.744^a$, $p<0.05$). The coefficient of determination (Adj. R^2) of 0.550 shows that instructional resources and teaching competence explain 55.4% of the variation in academic learning outcome of OTM students of government-owned polytechnics, Lagos State, while the remaining 45.0% variation in academic learning outcome of OTM students is explained by external factors other than those examined. Table 4.8b presents the results of ANOVA (overall model significance) of regression test which revealed that instructional resources and teaching competence has a significant influence on academic learning outcome of OTM students of government-owned polytechnics, Lagos State. This can be explained by the F-value (154.376) and low p-value (0.000) which is statistically significant at 95% confidence interval. Hence, the result posited that instructional resources and teaching competence of teachers in government-owned polytechnics, Lagos State significantly influenced the academic learning outcome of OTM students.

Furthermore, the results of regression coefficients in table 4.8c, revealed that at 95% confidence level, a unit change in instructional resources will lead to a 0.482 increase in the academic learning outcome of OTM students of government-owned polytechnics, Lagos State, given that all other factors are held constant. Also, a unit change in teaching competence will lead to 0.300 increase in the academic learning outcome of OTM students of government-owned polytechnics, Lagos State, given that all other factors are held constant. Out of the two predictor variables examined in this study, instructional resources is seen to have the highest relative influence (Beta=0.482) followed by teaching competence (Beta=0.300). Therefore, On the strength of this result (Adj. R^2 = 0.554, F(2,249)= 154.376, p= 0.000), this study rejects the null hypothesis three ($H_0$3) which states that instructional resources and teaching competence will have no significant combine influence on the academic learning outcome of OTM students of government-owned polytechnics, Lagos State.

4.2 Discussion of Findings

This result of the research question one show that despite an overall mean of 2.79 which shows that level of Academic Learning outcome in government-owned polytechnics, Lagos State, Nigeria is moderately high, more effort is required by the management of government-owned polytechnics, Lagos State to ensure that ICT skills amongst the students are encouraged, likewise encourage students that have interest in games that boast mental development, and ensure vocational skills are encouraged amongst the student as this will provide opportunity to bring learning experience to use. This should

improve level of academic learning outcome among OTM students in government-owned polytechnics, Lagos State, Nigeria.

This result of the second research question shows that despite an overall mean of 3.04 which shows that level of instructional facilities availability in government-owned polytechnics, Lagos State, Nigeria is moderately high, more effort is required by the management of government-owned polytechnics, Lagos State to ensure that encourages online learning classes, make provision for electronic resources (internet or Wi-Fi) to access learning materials, and audio-visuals resources for learning. These identified issues boast of aiding the quality of teaching, hence becomes imperative for management of government-owned polytechnics, Lagos State, Nigeria to provide its lecturers.

This result of the third research question shows that despite an overall mean of 3.16 which shows that level of teaching competence in government-owned polytechnics, Lagos State, Nigeria is moderately high, more effort is required by the management of government-owned polytechnics, Lagos State to ensure that lecturers operate at an optimum level by ensuring the provision of basic amenities for effective teaching, put in a system that guaranty lecturers support for students to sort out the difficult aspect of our course, and where necessary systematically train and motivate the lecturers so that effective and efficient learning can take place during class interaction. This should improve level of teaching competence in government-owned polytechnics, Lagos State, Nigeria.

Hypothesis one results of regression analysis for the influence of instructional resources on academic learning outcome of OTM students of government-owned polytechnics,

Lagos State, Nigeria. The study revealed that instructional resources in use in government-owned polytechnics in Lagos State significantly influenced the academic learning outcome of its OTM students. Hence, the study rejects the null hypothesis one ($H_0$1) There will be no significant influence of instructional resources on academic learning outcome of OTM students of government-owned polytechnics, Lagos State, Nigeria.The findings of hypothesis one found support in prior empirical studies. For example;it was revealed that there is a strong positive link between instructional resources and academic learning[1]. Schools that possess more instructional resources learn better than schools that have less instructional resources. This finding supported the study that private schools performed better than public schools because of the availability and adequacy of teaching and learning resources[2]. There was a low level of instructional resources available in public schools and hence commented that public schools had acute shortages of both teaching and learning resources. He further commented that effective teaching and learning cannot occur in the classroom environment if essential instructional resources are not available.

The quality of instructional processes experienced by a learner determines quality of education[3]. In their view they suggest that quality instructional materials create into the learners quality learning experience. It was also supported by another scholar that students' performance is affected by the quality and quantity of teaching and learning resources[3]. This implies that the schools that possess adequate teaching and learning materials such as textbooks, charts, pictures, real objects for students to see, hear and experiment with, stand a better chance of performing well in examination than poorly equipped ones. A study on the physical facilities and teaching learning materials in

schools in Tanzania supports the above views[4]. Teachers and students were interviewed on the role of instructional materials on effective learning. From his study he learned that performance could be attributed to adequate teaching and learning materials and equipment that are in a school. He recommended that in order to provide quality education the availability of sufficient quality facilities is very important. In another study which directly linked the role of physical facilities with students' academic learning outcome in schools, only physical facilities were focused on, leaving out instructional materials[5]. To me, physical facilities such as buildings including classrooms, chairs and desks are not enough to provide quality teaching and learning. Instructional materials are also necessary. A study agreed on my ideas that, in order for a school to have a good performance it must be well equipped with relevant and adequate text books and other teaching and learning resources[6].

A research study tilted: "The availability and utilization of instructional materials in the teaching of agricultural science in selected secondary schools in Lagos State" was carried out[7]. The target population was two hundred and fifty (250) secondary schools out of which, twenty-five (25) secondary schools were selected as the samples using systematic sampling. The instrument used in collecting the data was questionnaire. Five (5) null hypotheses were stated which were tested using the Average Weighted Response (AWR) test statistics at 1.00 level of significance. All the five (5) null hypotheses were accepted. The results showed that the teaching of agricultural science in selected secondary schools depended on the availability and utilization of instructional materials which had negative relationship in the teaching of agricultural science in selected secondary schools in Lagos State[8].

A research study tilted: "Utilization of teaching aids in the teaching of vocational agricultural science in secondary schools in OsunState" was carried out[9]. The target population was two hundred and thirty one (231) secondary schools out of which fifteen (15) secondary schools were selected as the sample by simple randomization. Five (5) null hypotheses were stated which were tested using correlation coefficient test statistics at 0.68 level of significance, and all the five (5) null hypotheses were rejected. The result showed that about 60% of the respondents made use of the teaching aids effectively which had positive relationship in the teaching of vocational agricultural science in secondary schools in Osun State.

A research study titled: "Effects of Instructional Materials on Students' Performance in Geography in selected Secondary Schools in Ilorin South LGA of Kwara State" was carried out[10]. The target population was fourteen (14) secondary schools out of which eight (8) secondary schools were selected as the sample by simple random sampling. Three (3) null hypotheses were stated which were tested using correlation coefficient test statistics at 0.8 level of significance, and all the three (3) null hypotheses were accepted. The results showed that about 80% of the respondents did not make use of the instructional materials appropriately which had negative effects on the performance of students in Geography in Secondary Schools in Ilorin South LGA in Kwara State.

A research study titled: "Effects of Instructional Materials' Usage and Teachers' Quality on Students' Academic Performance in Science in Senior Secondary Schools in Zaria LGA in Kaduna State" was carried out[158]. The target population was fifteen thousand four hundred and thirty (15,430) senior secondary school students from twenty-four (24) secondary schools in Zaria LGA and one thousand and thirty-three (1,033) teachers.

Sample of eighty (80) students were randomly selected with nine (9) teachers. Three (3) null hypotheses and three (3) research questions were formulated to guide the study. T-test statistical tool was used in testing the null hypotheses at 0.05 level of significance. The findings revealed that students performed better when appropriate and improvised materials were made available and utilized in teaching science and teachers possessing good qualifications enhanced students' performance in science.

The factors affecting the instructional materials usage were discussed. Among which included number of learners or students involved, the space of time available, facilities and materials available, interest and ability of agricultural science teachers and effectiveness of instructional materials. Also, the problems militating against effective use of agricultural instructional materials were equally treated which included emotion and feelings, self-concepts or personal or audience perception, educational level of the learners or students' cultural background, motivation, etc. Some of the criteria for selecting and evaluating instructional materials were treated as seen or observed in our secondary schools or as related to the materials which included purpose, availability and durability, appropriateness and cost effectiveness[11].

In a researcher's study it was revealed that a strong positive link between instructional resources and academic performance[12]. According to the researcher, schools that possess more instructional resources performed better than schools that have less instructional resources. This finding supported the study by a scholar that private schools performed better than public schools because of the availability and adequacy of teaching and learning resources[13]. The researcher noted that there was a low level of instructional resources available in public schools and hence commented that public schools had acute

shortages of both teaching and learning resources. He further commented that effective teaching and learning cannot occur in the classroom environment if essential instructional resources are not available. Another scholar suggested that the quality of instructional processes experienced by a learner determines quality of education[14]. In their view they suggest that quality instructional materials create into the learners' quality learning experience. A scholar also supports that students' performance is affected by the quality and quantity of teaching and learning resources[15]. This implies that the schools that possess adequate teaching and learning materials such as textbooks, charts, pictures, real objects for students to see, hear and experiment with, stand a better chance of performing well in examination than poorly equipped ones.

A study on the physical facilities and teaching learning materials in Primary schools in Tanzania supports the above views[16]. Chonjo interviewed teachers and students on the role of instructional materials on effective learning. From is his study he learned that performance could be attributed to adequate teaching and learning materials and equipment that are in a school. He recommended that in order to provide quality education the availability of sufficient quality facilities is very important. His study was one of its kinds in Tanzania which directly linked the role of physical facilities with students' academic performance in primary schools. However, he focused only on physical facilities, leaving out instructional materials. To me, physical facilities such as buildings including classrooms, chairs and desks are not enough to provide quality teaching and learning. Instructional 20 materials are also necessary. Another study also agreed with my ideas that, in order for a school to have a good performance it must be

well equipped with relevant and adequate text books and other teaching and learning resources[17].

Teachers in community secondary schools most especially in rural community schools face some challenges in accessing instructional materials. One of the big challenges that teachers in community secondary schools face in accessing instructional materials is meagre funds provided by the government to community secondary schools for purchasing instructional materials. Community secondary schools depend to the large extent on the government for funding. Very little support is received from local government and communities around the schools most especially in rural areas due to poverty. The funds are provided in form of capitation grants. The capitation grant is aimed at improving the quality of education by making sure that sufficient leaching and learning material are found at school level. In particular, the capitation grant is meant to finance the purchase of textbooks and other teaching and learning materials as well as to fund repairs, administration materials, and examination expenses[18]. However, while the number of students who are enrolled in schools has been increasing each year, education capitation grant has been dropping. Even without adjusting for inflation, the actual amount of money reaching schools for capitation grants is clearly much less today compared to what it was between 2002 and 2003.

According to the Education Public Expenditure Tracking Survey of 2004, in the period 2002-2003 schools received an average of 5,400 shillings per pupil. In 21 2007/08 however, the money actually reaching the schools had declined to 4,189 shillings per pupil[19]. This amount of money is grossly insufficient to purchase a minimum set of textbooks apart from other instructional materials which are highly needed by the

teachers. According to a researcher, government's Policy towards efficient provision of these aspects of educational resources has not been encouraging and has always not been well planned, monitored, supervised and evaluated with rural schools as the back bench of implication of these policies[20]. Another challenge that teachers face is the lack of exposure and limited accessibility to modern instructional facilities. Most community secondary schools especially in rural areas do not have access to information communication technology (ICT) which could alleviate shortage of instructional materials. As we are in a new millennium, there is an increased awareness of the need to use modern scientific approach in teaching and learning processes in our schools.

At present, there is a universal recognition of information and communication technology as a major force in the dissemination of knowledge[21]. Majority of teachers who were trained early 1990's and backward do not have skills in the field of Information and Communication Technology. Where there are skilled teachers, other problems naturally include problem of installation, maintenance, operation, network administration and local technicians to service or repair these equipment's and the other facilities. In most of the rural secondary schools, most of the facilities are non-existent, hence the traditional chalk and duster approach still dominates in secondary school pedagogy[22]. Poor salary is also another challenge that teachers face. Teachers like most civil servants in Tanzania are poorly paid. This becomes a hindrance for them to purchase their own teaching materials or acquisition of new ideas, skills and knowledge by failure in enrolling for further educational programmes including Information and Communication Technology (ICT). With this, the academic and intellectual capacities of teachers and learners are bound to be affected substantially during classroom interaction[23]. Lack of sufficient skills and

creativity may hinder teachers to improvise their own instructional materials. Local governments and communities around community secondary schools are supposed to provide resources most especially funds to these schools so that teachers can use them to access instructional materials. But very often this is not the case due to number of reasons. Some local communities have very narrow tax base.

Hypothesis two results of regression analysis for the influence of teaching competence on academic learning outcome of OTM students of government-owned polytechnics, Lagos State, Nigeria. The study revealed that teaching competence of teachers in government-owned polytechnics, Lagos State significantly influenced the OTM students' academic learning. Hence, the study rejects the null hypothesis one ($H_0$2) There will be no significant influence of use of instructional resources and teaching competence on academic learning outcome of OTM students of government-owned polytechnics, Lagos State, Nigeria.The findings of hypothesis two found support in prior empirical studies. For example;a study surveyed support the hypothesis that student academic performance depends on a number of factors. Findings from studies identify students' effort/persistence, academic ambition, previous grades, parents' education, parents academic ambition for their wards, sex of the child, age of student, peer influence, and personal effort, academic ambition as factors that have a significant influence on the students' academic performance[24].

The Organization for Economic Cooperation and Development (OECD) has published the results of the international PISA 2012 with the participation of Peru among other 65 countries or territories. PISA (acronym for Program for International Student Assessment) is held every three years. It tests 15-year-old's competencies in mathematics, reading and

science. PISA 2012 focused on mathematics, that is, the assessment presented more questions in this area, along with Reading and Science questions. In Peru, a nationally representative sample was assessed. This sample included 6035 15-year-old students, from 240 secondary schools or similar institutions in all regions of the country. Public, private, urban and rural institutions were included. While it is true that international comparisons make a significant contribution to the debate on quality of education, they should not be considered only as the final study on educational accomplishments. The results achieved by Peru in PISA 2012 in Mathematics are low. Peru's average score was 368 points. According to performance levels, PISA places students in 6 levels. On average, the assessed Peruvian students are located at Level 1, although a significant percentage (47%) is below level 1. In Science, the situation of Peruvian students is similar to that in mathematics. A score of 373 was obtained and, on average, students are also at Level 1[25].

Regarding reading competencies, while our students showed low results in PISA 2012 compared to other Latin American countries participating in PISA, an steadily progress over the last 11 years is reported in this area. Between 2001 and 2012 the Peruvian average has increased from 327 to 384 points. In the previous cycle, PISA 2009, we have increased in 14 points which is the highest progress among Latin American countries participating in PISA[26].

We share a findings formulated in PISA School failure and educational reforms. He states that it is a falsehood that the PISA report evaluates competencies. The truth is that this assessment does not evaluate, but it examines based on a competency-based model which is no longer reduced to three subjects, but to certain aspects of these three subjects. For

instance: language tests do not imply that the student writes a minimum text at any time. Students only have to choose between options, that is: objective tests of text type, which can often be guessed by chance. These are a tests taken out of context that do not even measure what they say they measure, and these tests are performed in samples of population that are not representative of the group, since there is no group as such. The diversity of students, teachers, families, educational centers, autonomous communities and countries is so large that it invalidates these types of very standardized tests that do not really say anything, no matter how many experts persist in using them to explain the same thing that they could argue without them. Actually, they do not contribute to education and its improvement, especially when what is published in the media is entirely superficial and it lacks intellectual rigor[27].

In this vein, points out, referring to SIMCE (System for Measuring the Quality of Education, Mexico), that this type of tests "don't not measure the complexity of human learning, but the behaviors of training in issues that become the foundation of the curriculum content. This creed which involves tests like SIMCE do nothing but accept a poor and distorted understanding of students' progress." "School failure" is not tackled with exams and school systems do not improve by taking tests nonstop. Failure and success are market concepts which have never been considered in the educational world and we have to avoid the strong negative component they both imply. We observed a positivist bias that a scholar describes with these words: "It is studied what fits best in the method, which is best measured, while what it is not so easily quantifiable is invisible." In this case, PISA has the positive aspect of explicitly stating its approach, and thus it

doesn't intend to evaluate education as a whole, it doesn't even intend to make of its assessment the most important fact in education[28].

Teaching methods are the means or procedures that teachers use to aid students in having an experience, mastering a skill or process, or in acquiring an area of knowledge[29]. In addition, methodological competencies could further be characterized based on their functional elements: to adapt to effective work methods; to analyze the task to be performed; to begin the process; to perform the task and to analyze one's procedures[30]. Different pedagogies could be used for lesson presentations in public senior secondary schools. Some of such methods include classroom discussion, discovery/inquiry, lecture/exposition, demonstration, collaboration, critical thinking, problem solving techniques, role play method, individual/group project, simulation and games, instructional scaffolding and excursions. The discussion/question and answer method employs the art of seeking information and stimulating thinking and elaboration at all levels of human reasoning to achieve given objective. The demonstration method requires teaching by displaying the instructional situation with an audio-visual explanation of an idea, process or product. It involves showing, doing and telling the students the point of emphasis and performing an activity so that students can observe how things are done in order to help prepare them to transfer theory to practical application[31].

Most studies use the distinction between declarative (knowing that) and procedural knowledge (knowing how)[32]. This approach is relevant as it focuses on understanding how knowledge is related to behaviour, or in other words, the quality of teaching performance. An investigation into the knowledge of teachers as 'learning specialists' involves understanding how this knowledge functions in the teaching-learning process;

more specifically, how teachers' apply their knowledge in making decisions, for example, about lesson design or making on-the-spot judgments in the classroom. A set of research studies conceptualizes the teaching profession as a 'clinical practice profession' and compares it to the medical profession. Some argue that decision-making is actually a basic teaching skill as decisions are made regularly by teachers while processing cognitively complex information about the student in order to decide alternatives for increasing their understanding, thus, making good pedagogical decisions hinges on the quality of the pedagogical knowledge held by the teacher. Therefore, there is no doubt whatsoever that a teacher with the right skills for teaching should be able to manage his time and classroom effectively and efficiently using the appropriate teaching techniques. The problem solving method can easily be compared to the questioning/development method, because both methods use questions to get answers from students[33]. The problem solving method presents a problem first through formulating hypotheses, exploring mechanisms, developing and researching learning issues, and applying new information to the case.

Hypothesis three results of multiple regression analysis for the influence of combined significant influence of use of instructional resources and teaching competence on academic learning outcome of OTM students of government-owned polytechnics, Lagos State, Nigeria. The study revealed that instructional resources and teaching competence of teachers in government-owned polytechnics; Lagos State significantly influenced the academic learning outcome of OTM students. Hence, the study rejects the null hypothesis one ($H_0$3) There will be no significant influence of use of instructional resources and teaching competence on academic learning outcome of OTM students of government-

owned polytechnics, Lagos State, Nigeria.The findings of hypothesis three found support in prior empirical studies. For example; According to a researcher there are few types of councils in Tanzania, which can manage to collect government grants[34]. Many local authorities however have found themselves unable to deal with such a rapid increase in expenditure and their budget deficit increase.

Education is one of the sectors, which are mostly affected by this situation. Poverty is another reason, which may hinder members of the community in supporting teachers and schools financially so that they can access instructional materials. According to another study, Parents and communities participation differ from rural to urban communities and from one mode of economy to another[35]. Parents who are involved in cash crops economy have economic ability to 23 finance education compared to parents who are not involved in cash crop economy. For example pastoral communities such as Masai have displayed poor financing strand for their children. Teachers who work in such areas have more challenges in accessing instructional materials. Another challenge that teachers face in accessing instructional materials is lack of clear policy and monitoring mechanisms to ensure that enough funds are provided to community secondary schools for purchasing instructional materials and also these funds are used for the intended purpose.

According to the comments of a scholar, government's Policy towards efficient provision of these aspects of educational resources has not been encouraging and has always not been well planned, monitored, supervised and evaluated with rural schools as the back bench of implication of these policies. There are a number of strategies, which can be used in order to minimize the challenges of attaining and using quality instructional materials[36]. According to studies done in different parts of the world including Africa,

one of the strategies is improvisation of instructional materials. A scholar states that improvisation involves sourcing, selection and deployment of relevant instructional materials into the teaching-learning focus in the absence or shortage of standard materials for a meaningful realization of specified educational goals and objectives[37].

According to some studies, creation of improvised media of low technological 24 materials and resource-centred learning can enlarge the limited knowledge base of any course of study and enrich instruction to a guaranteed quality[38]. It can also promote strategies that ensure the integration of technology in the teaching and learning process of basic science education. Their findings are in agreement with the findings of another scholar who observed that using technologies like simulation devices open new horizons for individual learning tools, the environment resources and services[39]. The use of ICT can also minimize some of the challenges in accessing instructional materials.

According to UNESCO (2004), the use and rapid spread of electronic communications has the capacity to affect the quality and efficiency of basic education throughout the world[40]. The ease with which teachers and students can gather information over the Internet on virtually any topic has the potential to transform instructional content and pedagogical practice. Moreover, courses developed by the best teachers in one country can be made available to students across many countries. Newer technology-based instructional strategies, incorporating the Internet and the World Wide Web (WWW), can therefore be used more to expand communication and increase access to resources. A scholar points out that ICT has potentials in increasing access and improving relevance and quality of education in developing countries[41]. He further states the potentials of ICT

as follows: ICTs greatly facilitate the acquisition and absorption of knowledge, offering developing countries unprecedented opportunities to enhance educational systems.

Again, they learn by trying different approaches to solving problems such as the role play method. One or more students adopt a specified role and try to play the role. The method according to the University of New Mexico School of Medicine (2015) develops problem solving and verbal expression skills of students, provides practice to build skills before real-world application and when real experiences are not readily available, can provide an entirely new perspective on a situation and develop insights about feelings and relationships and improves the likelihood of transfer by learning from the classroom to the real world[42]. However, most scholars have argued that most classroom instructional delivery in most subjects are dominated with the traditional teacher-centered approach which is the lecture or expository method of teaching[43]. The aforementioned scholars are of the view that it does not give students the opportunity to generate their own ideas and test hypotheses. It was therefore concluded that this form of instruction and learning hampers creativity and does little to foster innate abilities for problem solving and decision making[44].

Another scholar revealed that the in-depth pedagogical knowledge of teachers make them able to use various methodologies suited to deliver a lesson[45]. The full understanding of content makes them confident about selection of teaching strategies and skills which are best for student understanding. Furthermore, teachers are expected also to demonstrate a thorough understanding of the content of their curricular areas. They should be able to communicate this content material to students using methodologies that are appropriate for the age and abilities of the learners[46]. In the same vein, a scholar in an empirical study

found that pedagogical skills to a high extent influence students' academic performance as well as no significant difference between the mean responses of male and female SS2 students on the extent teachers' pedagogical skills influence students' performance in public senior secondary schools in Port Harcourt Metropolis of Rivers State[47]. This was translated to mean that pedagogical skills of the teacher enhance students' academic performance.

The findings of this study equally aligned with the expectation of the Ramsden Theories of Teaching. According to Ramsden Theory of Teaching, it was argued that teaching and learning must be thought of inseparably. He states that the answer to improving student learning "lies in the connection between students' learning of a particular content and the quality of our teaching of that content. Good teaching and good learning are linked through the students' experiences of what we do. It follows that we cannot teach better unless we are able to see what we are doing from their point of view"[48]. In addition, the findings aligned with the outcome of Sociocultural Theory of Teaching, Learning, and Development by Lev Vygotsky. According the theory, human mind develop through interaction with materials in the learning process where people learn from each other and use their experiences to successfully make sense of the materials they interact with. These experiences are crystallized in 'cultural tools', and the learners have to master such tools in order to develop specific knowledge and skills in solving specific problems and, in the process, become competent in specific profession. In the classroom, these tools can be a picture, a model, or pattern of solving a problem. Most often however, such tools are combinations of elements of different orders, and human language is the multi-level tool

par excellence, combining culturally evolved arrangements of meanings, sounds, melody, rules of communication, and so forth[49].

Therefore, on the strength of the support found in prior existing studies with this present study's result, the study can conclude that instructional resources and teaching competence have positive and significant influence on academic learning outcome of OTM students of government-owned polytechnics, Lagos State, Nigeria.

Endnotes

1. J. Okoro, & Zagbamu, T.P. 2021. *Students assessment of business teacher education lecturers on instructional delivery practices in Edo and Delta States.* **Nigerian Journal of Business Education (NIGJBED)**, *8*(2), pp.157-163.

2. H. Hamman, *Availability and utilization of human and material resources for teaching and learning office technology and management courses in polytechnics in Adamawa State, Nigeria* (**Doctoral dissertation, Kwara State University** (Nigeria), 2019

3. O.D. Adeoti, & J.F. Oyedele, *Utilization of instructional resources for teaching self-employment skill acquisition by business education students in tertiary institutions*. **KWASU Journal of the Business of Education**, *3*(1) 2022, pp.255-263.

4. O. T. Oyinloye, & F. K. Oluwalola, *Modern office instructional facilities in office technology and management in Polytechnics: a means to insecurity management in Nigeria*. **ABEN Conference Proceedings** 1 (1) 2019, pp.125-133.

5. S. T. Priye, *The corrosive effect of corruption on Nigeria educational system*. **Retrieved from** www.gamji.com/article6000/news7987.htm. 2017.

6. A. E. Robert, *Office tech. & mgt. curriculum and new technologies: The challenges for office educators in polytechnic in south-south of Nigeria.* **Nigeria Journal of Business Education**, 1(3) 2016, pp.122-137.

7. C.O. Igberaharha, *Improving the Quality of Technical Vocational Education and Training (TVET) for Sustainable Growth and Development of Nigeria.* **Journal of Education and e-Learning Research**, *8*(1) 2021, pp.109-115.

8. W.O. Anyim, *Perception of library users on the use of ICT facilities in Abia State polytechnic library*, Nigeria. **International Journal of Marketing & Human Resource Research**, *2*(3) 2021, pp.169-177.

9. S.J. Barnes, *Information management research and practice in the post-COVID-19 world.* **International Journal of Information Management**, *55*, 2020. pp.102175.

10. O.H. Onyinyechi, *Use of instructional resources for teaching and learning economics education in secondary schools in Nigeria*. **IAA Journal of Education**, *6*(1) 2020, pp.32-37.

11. R.I. Osarenren-Osaghae, & Q.O. Irabor, *Educational Policies and Programmes Implementations: A Case Study of Education Funding, Universal Basic Education (UBE) and Teacher Education.* **International Journal of Educational Administration and Policy Studies**, *10*(8) 2018, pp.91-102.

12. S.N. Nnamani, & H.U. Anih, *Students' attitude to music in foreign language classes in secondary schools in Enugu urban*. **International journal of English literature and social sciences**, *5*(4) 2020, pp.1252-1261.
13. A.B. Fafunwa, *History of education in Nigeria*, **New York: Routledge** "(1974), eBook" 9780429454905, 2018.

14. K. Kohl, & C.A. Hopkins, *Learnings from the# IndigenousESD global research: Twenty-first century competencies for all learners.* **Journal of Teacher Education for Sustainability**, *22*(2) 2020, pp.90-103.

15. R.E. Slavin, *Educational psychology: Theory and practice*, **Boston: Allyn & Bacon**, 9780-205-35143-3, 2019.

16. J. Jiyanto, *Student Centered Learning (SCL)-Based Learning Evaluation and Its Application in Islamic Religious Education*. **At-Tajdid: Jurnal Ilmu Tarbiyah**, *11*(1) 2022, pp.16-25.

17. N.M. Nor, R. Embong, H. Muda, K. Yunus, & J.M. Nor, *Effects of teachers' teaching competencies on students' academic performance mediated by holistic centered learning style based on SUMUR Program at Secondary Religious Schools*. **International Journal of Academic Research in Progressive Education and Development**, *8*(2) 2019, pp.25-38.

18. B.D. Wilkinson, G. Shank, & F. Hanna, *Epistemological issues in counselor preparation: An examination of constructivist and phenomenological assumptions.* **The Journal of Counselor Preparation and Supervision**, *12*(4) 2019, pp.13.

19. M.H. Immordino-Yang, L. Darling-Hammond, & C.R. Krone, *Nurturing nature: How brain development is inherently social and emotional, and what this means for education.* **Educational Psychologist**, *54*(3) 2019, pp.185-204.

20. A. Tittel, & O. Terzidis, *Entrepreneurial competences revised: developing a consolidated and categorized list of entrepreneurial competences.* **Entrepreneurship Education**, *3*(1) 2020, pp.1-35.

21. N.M. Nor, R. Embong, H. Muda, K. Yunus, & J.M. Nor, *Effects of teachers' teaching competencies on students' academic performance mediated by holistic centered learning style based on sumur program at secondary religious schools*. **International Journal of Academic Research in Progressive Education and Development**, *8*(2) 2019, pp.25-38.

22. H.A. El-Sabagh, *Adaptive e-learning environment based on learning styles and its impact on development students' engagement*. **International Journal of Educational Technology in Higher Education**, *18*(1) 2021, pp.1-24.

23. M.K.L. Abdullah, A.M. Ali, H. Abd Wahid, & N.S. Hudin, Integrated model of the implementation of pedagogical skills in teaching and learning of the 21st century among lecturers of universiti pendidikan Sultan Idris. **Management Research Journal**, *9*, 2020, pp.36-42.

24. N. Abd Majid, F.A. Zainol & A. Afthanorhan, *Does school cooperative program increase entrepreneurial intention? A structural equation modelling approach.* **Humanities**, (2) 2020, pp.645-51.

25. S. Tripathi, *Teachers' Commitment towards Human Resource Development*. **Think India Journal**, *22*(14) 2019, pp.14616-14625.

26. S.C. Wibawa, I.M. Arsana, M. Sahlan, & F.A. Rachmaningrum, *December development of vocational online examination: A case study of computer systems.* ***In 1st Vocational Education International Conference (VEIC 2019)***, 2019, pp. 329-332.

27. I. Prykhodko, Y. Matsehora, O. Kolesnichenko, A. Bolshakova, O. Bilyk, & A.V. Haydabrus, *The Main Factors and Personality Characteristics to Predict the Risk of Suicide by Military Personnel in Hostilities. BRAIN.* **Broad Research in Artificial Intelligence and Neuroscience,** *11*(3) 2020, pp.72-87.

28. J. Sutherland, J. Belec, A. Sheikh, L. Chepelev, W. Althobaity, B.J. Chow, D. Mitsouras, A. Christensen, F.J. Rybicki, & D.J. La Russa, *Applying modern virtual and augmented reality technologies to medical images and models*. **Journal of digital imaging**, *32*(1) 2019, pp.38-53.

29. S. Wilhelm, R. Förster, & A.B. Zimmermann, *Implementing competence orientation: Towards constructively aligned education for sustainable development in university-level teaching-and-learning.* **Sustainability,** *11*(7) 2019, pp.1891.

30. E.C. Fletcher Jr, N.Q. Warren, & V.M. Hernández-Gantes, *Preparing high school students for a changing world: College, career, and future ready learners*. **Career and Technical Education Research**, *43*(1) 2018, pp.77-97.

31. N. Sanaie, P. Vasli, L. Sedighi, & B. Sadeghi, *Comparing the effect of lecture and Jigsaw teaching strategies on the nursing students' self-regulated learning and academic motivation: A quasi-experimental study.* **Nurse education today,** *79,* 2019, pp.35-40.

32. R. Bakar, *The influence of professional teachers on Padang vocational school students' achievement.* **Kasetsart Journal of Social Sciences**, *39*(1) 2018, pp.67-72.

33. S. Bal-Taştan, S.M.M. Davoudi, A.R. Masalimova, A.S. Bersanov, R.A. Kurbanov, A.V. Boiarchuk, & A.A. Pavlushin, *The impacts of teacher's efficacy and motivation on student's academic achievement in science education among secondary and high school students.* **EURASIA Journal of Mathematics, Science and Technology Education**, *14*(6) 2018, pp.2353-2366.

34. A.C. Ayo, & O.G. Oludele, *Evaluation of the implementation of the universal basic education Yoruba language curriculum in south western Nigeria*. **Theory and Practice in Language Studies**, *9*(12) 2019, pp.1465-1473.

35. Y.J. Hsiao & S.P. Sorensen, *Evidence-based practices provided in teacher education and in-service training programs for special education teachers of students with autism spectrum disorders*. **Teacher Education and Special Education**, *42*(3) 2019, pp.193-208.

36. T.O. Amie-Ogan, & F.B. Omunakwe, *Perceived influence of teachers" quality on students" academic performance in public senior secondary schools in Port Harcourt Metropolis of Rivers State, Nigeria.* **International Journal of Innovative Social & Science Education Research** *8*(3) 2020, pp.146-161.

37. Y. Mo, M. Appel, J.W. Kim, & M. Lee, *Pre-service teachers' international study experiences or in-service teachers' professional learning communities: what comes into play in Finnish teachers' self-efficacy in multicultural classrooms?* **Teachers and Teaching**, *27*(7) 2021, pp.602-624.

38. H.A. Maulana, *Psychological Impact of Online Learning during the COVID-19 Pandemic: A Case Study on Vocational Higher Education*. **Indonesian Journal of Learning Education and Counseling**, *3*(2) 2021, pp.130-139.

39. Cleland, J. McKimm, J. Fuller, R. Taylor, D. Janczukowicz, J. & T. Gibbs, *Adapting to the impact of COVID-19: Sharing stories, sharing practice*. **Medical Teacher**, *42*(7) 2020, pp.772-775.

40. S.W. Schmidt, *Our time is now: How the events of 2020 will shape the field of adult education.* **Adult Learning**, *33*(1) 2022, pp.40-42.

41. I.S. Akamigbo, & R.U. Eneja, *Evaluation of Financial Accounting Curriculum in Senior Secondary Schools in Nigeria.* **Nnadiebube Journal of Education in Africa**, *5*(3) 2020, pp. 82-97.

42. J.S. Buwah, V.I. Wannang, & S.L. Duktur, Business teacher education and training: a panacea for educational challenges. **Nigerian Journal of Business Education (NIGJBED),** *8*(1) 2021, pp.111-120.

43. O.M. Olatunji, *The goals of tertiary education: A philosophical assessment of Nigeria's national policy on education*. **Educația Plus**, *20*(2) 2018, pp.230-253.

44. O.M. Ogunmola, I.N. Ohia, & A.S. Alonge, *Teacher Factors and Students' Achievement in Prose Literature among Senior Secondary School Students in Ogbomoso South Local Government Area, Oyo State, Nigeria*. **International Journal of Arts and Social Sciences Education (IJASSE)**, 7(2) 2022, pp.54

45. O.T. Amie-Ogan & E.E. Friday, *influence of teachers' competence on students' academic performance in public senior secondary schools in Ikot Ekpene and Essien Udim Local Government Areas of Akwa Ibom State,* **International Journal of Innovative Social Sciences & Humanities Research** 8(4) 2020, pp.118-128.

Chapter Five

Conclusion

This chapter presents and discusses the summary of findings, conclusions and provides useful recommendations, contributions to knowledge and suggestions for further studies.

5.1 Summary of Findings

The main objective of this study is to investigate the influence of instructional resources, teaching competence on academic learning outcome of OTM students of government-owned polytechnics, Lagos State, Nigeria. The study has five chapters so as to achieve its

main objective. The chapter one presented the background to the study which affirms that adherence to instructional resources and competent teaching to enhance learning among OTM students of government-owned polytechnic in Lagos State. Several studies have been done on instructional resources, teaching competence and academic learning. Also, empirical submission has been made about instructional resources, teaching competence and academic learning. However, scholars have recommended the need for more studies on instructional resources, teaching competence and academic learning outcome especially to tackle the matters arising from poor performance of OTM students in tertiary institutions.etc.

The data generated were sorted, coded, and analyzed to establish the statistical significance of the influence of instructional resources and teaching competence on academic learning outcome among OTM students of government-owned polytechnic in Lagos State, Nigeriaand final acceptance of the hypotheses were made. From the interpretation of analyses of data collected and findings of the study, the following can be summed up as the main empirical findings of this study:

i. The level of academic learning outcome of OTM students in government-owned polytechnics in Lagos State is moderately high.
ii. The level of use of instructional resources is moderately high in government-owned polytechnics in Lagos State, Nigeria.
iii. The level of teaching competence in government-owned polytechnics in Lagos State is moderately high.
iv. Instructional resources in use in government-owned polytechnics in Lagos State significantly influenced the academic learning outcome of its OTM students.

v. Teaching competence of teachers in government-owned polytechnics, Lagos State significantly influenced the OTM students' academic learning.

vi. Instructional resources and teaching competence of teachers in government-owned polytechnics, Lagos State significantly influenced the academic learning outcome of OTM students.

5.2 Conclusion

Many institutions have in principle that good academic learning outcome process is important for academic success. The essence of good teaching method is significant when it comes to defining success of an institution, the need to enhance learning among OTM students and improve availability of instructional resources and recruitment of competent lecturersin the institutions is critical because it is key to better academic success of OTM students in government-owned polytechnics in Lagos State, Nigeria.

5.3 Recommendations

Based on the findings in this study, the following recommendations were made:

i. Government should ensure that key factors that will enhance easy academic learning outcome are provided in the polytechnics such as innovative instructional resources, teachers' training, and development etc.

ii. Government should provide appropriate instructional resources in the targeted polytechnics in Lagos State, Nigeria.

iii. Government through the Ministry of Education should recruit competent teachers/lecturers to handle OTM courses so as to improve positive learning among OTM students in government-owned polytechnics in Lagos State, Nigeria.

iv. Since teaching competence positively and significantly influence academic learning outcome of OTM students in government-owned polytechnics in Lagos State, Nigeria, management of these institutions should focus on updating their academic content and give the teachers required skills to enhance the students learning.

v. Since instructional resources positively and significantly academic learning outcome of OTM students in government-owned polytechnics in Lagos State, Nigeria, management of the institutions should focus on providing necessary instructional resources to enhance academic learning outcome of OTM students in the polytechnics.

vi. With a strong positive and significant influence of teaching competence and instructional resources on academic learning outcome of OTM students in government-owned polytechnics in Lagos State, Nigeria, management of the polytechnics must continue to adopt appropriate measures towards improving teaching competence and instructional resources to enhance academic learning outcome of OTM students in the polytechnics.

5.4 Contribution to Knowledge

This study offers significant contribution to literature conceptually, theoretically, and empirically. Conceptually, the study focused on identifying gaps in literature pertaining to teaching competence, instructional resources and academic learning. The conceptual framework of this study equally offers conceptual contribution as it was constructed by the researcher to analyze the gaps identified in literature. The model combined independent variables (teaching competence and instructional resources) and dependent

variable (academic learning) with measures ranging from dimensions of teaching competence (teaching effectiveness, teaching efficiency and quality teaching) instructional resources measures (learning objectives, availability and learning activities) andacademic learning outcome (knowledge acquired and skill acquired). The model also can be adapted to suite future studies.

From the theoretical stand point the Ramsden Theory of Teaching was strengthened. The theory posits that He argues that teaching and learning must be thought of inseparably. He states that the answer to improving student learning "lies in the connection between students' learning of a particular content and the quality of our teaching of that content. Good teaching and good learning are linked through the students' experiences of what we do. It follows that we cannot teach better unless we are able to see what we are doing from their point of view". He described some progressively sophisticated "theories" and associates each with specific views of teaching and learning. In the first theory, the view of teaching and learning is fragmented. The role of the professor and the student for the teaching and learning processes, the content and context, while important, are mostly unrelated. Instructors at this level tend to think that subject matter must be transmitted to students and that teaching and learning are part of simple input-output

process. The instructor's focus is on himself or herself as the one who transmits knowledge and expertise, and not on learning, the rightful outcome of the process. The primary tenet of the second theory is organizing student activity. The instructor recognize that engaging students more actively increases learner motivation; there is more concern for what the students are doing and what the professor's interaction with them should be.

Empirically, the study is able to add to recent literature on the interaction among teaching competence, instruction resources and academic learning. Though, studies on teaching competence, instructional resources and academic learning outcome abound in develop economy context, however empirical study from developing countries like Nigeria seems to be few in this regard. This mean not much is known about using teaching competence and instructional resources to reinforce academic learning outcome of OTM students in government-owned polytechnics in Lagos State, Nigeria. Hence by the findings of the three null hypotheses examined, the study become a basis for reference for future study on teaching competence, instructional resources and academic learning. Moreover, the study provides findings which later scholars can use to buttress the empirical submissions in their study.

Overall, these above-mentioned points lay emphasis on the fact that this study offers significant contribution to knowledge and has practical implication for the management of government-owned polytechnics in Lagos State, Nigeria.

5.5 Area of Further Research

This study focused on influence of teaching competence and instructional resources on academic learning outcome of OTM students in government-owned polytechnics in Lagos State, Nigeria. Nevertheless, to further broaden the frontiers of knowledge, the following areas of studies are suggested for further research.

i. This study investigated teaching competence, instructional resources and academic learning outcome of OTM students in government-owned polytechnics in Lagos State,

Nigeria, a comparative study with other tertiary institutions in Nigeria and other African countries such as Ghana may be considered in the nearest future

ii. A cross-sectional survey design was used in the course of the study, and this means evidence of causality cannot be established hence, future study may consider the longitudinal survey design to explain causality on a long period of time.

iii. The present study was carried out in only government-owned polytechnics; further research work may look into the private polytechnics in Lagos State to examine teaching competence, instructional resources and academic learning.

iv. This study employed primary data for collection of information from the selected tertiary institutions, same study may be carried out in the nearest future using the secondary data of the tertiary institutions.

Bibliography

Books

Abidogun, B.G. Lamidi, M.A. Adebowale, A.F. & Adeyemi, O.M. *Efficacy of interactive multimedia on children learning outcomes in primary schools in Lagos State : Innovation and technology for sustainable educational development*, **Ibadan: Lineage Publishing House**, 978-978-58895-6-7, p.100

Barnes, D. *Practical curriculum study*. **London**: **Routledge**, 9780429454721, 2018, pp.528.

Blatchford, R. *The teachers' standards in the classroom*. **Singapore: Learning Matters Sage**, 9781529725247, 2020

Bougie, R. & Sekaran, U. *Research methods for business: A skill building approach*. **New York: John Wiley & Sons**, (Lise, Johnson) 9781119609254, 2019

Brown, D.L. & Glasgow, N.L. *Capacity building and rural government adaptation to population change.* In *Rural Policies for the 1990s* . **New York: Routledge**, 9780429305115, 2019, pp. 194-208

Evan, G. L. *Jewish and Islamic Philosophy: Crosspollinations in the Classic Age*. **Edinburgh: University Press**. 2019. pp. 25–6

Fafunwa, A.B. *History of education in Nigeria*, **New York: Routledge** "(1974), eBook" 9780429454905, 2018

Gilvary, K. *The Fictional Lives of Shakespeare* **NewYork: Routledge**, 9781351186070, 2017, pp. 260

Hebert Jr, L.J. Alulis, J. Alvis, J.D. Bradizza, L. Burns, T. Holloway, C. Nichols, M.P. Schaeffer, D. & Svogun, T.V. *The soul of statesmanship: Shakespeare on nature, virtue, and political wisdom*. **Maryland: Rowman & Littlefield**, 9781498543279, 2018

James, A. & Nerantzi, C. *The power of play in higher education: Creativity in tertiary learning. Cham*, **Switzerland: Palgrave Macmillan**, 978-3-319-95780-7, 2019, pp.31

Kullasepp, K. & Marsico, G. Conclusion: The bordering process in mind and society. in *identity at the borders and between the borders*, **New York: Springer Cham**, 978-3-030-62267 1_8, (Kullasepp, K., Marsico, G.) 2021, pp. 109-115

Mäntylä, T. & Poranen, J. Combining *physics and mathematics learning: discovering the latitude in pre-service subject teacher education. in: pospiech*, **Cham: Springer**, (G. Michelini & M., Eylon), 978-3-030-04627-9, 2019, pp. 161–176

Pinn-Atkinson, S. & Woolloff, J. *Creative themes for groupwork and personal development*. **London: Routledge**, 9781315171685, (eBook) 2018

Savignon, J. *Communicative competence: theory and classroom practice: texts and contexts in second language learning*. **New York: McGraw-Hill**, 9780070837362, 2018

Shakespeare, W. *Romeo and Juliet. In One-Hour Shakespeare,* **NewYork: Routledge**, 9780429262715 2020, pp. 304-368

Slavin, R.E. *Educational psychology: Theory and practice*, **Boston: Allyn & Bacon** 9780-205 35143-3, 2019

Smudde, P.M. *Teaching public relations: Principles and practices for effective learning*. Routledge, Smudde, P.M. (2019). Teaching Public Relations: Principles and Practices for Effective Learning. **New York: Routledge**, 9780367822132, pp. 186

William, B. J. *An inquiry into the philosophy and religion of Shakspere.* **London: C. Mitchell**, OCLC 162952347, 1978

Conferences, Seminars, Proceedengs and Workshops

Emesini, N.O. *Electronic-Learning as an innovation in teaching and learning in Nigerian Universities.* **A paper presented at the 22nd Annual Conference of the Curriculum Organization of Nigeria held at Cairo on September**, 2019, pp.2-4

Fauzi, A.A.S., Abdullah, N., Azlan, N.N.A. & Zahari, A.S.M. *A study of determinant factors towards the quality teaching among teachers at primary school in Bentong District.* **In 1st Economics and Business International Conference 2017 (EBIC 2017)**, 2018, pp.307-316

Fredrick, S. *Comparative analysis of lecture theatre performance parameters' importance to students learning experience*, **Proceedings of the 3rd International Conference** on Infrastructure Development in Africa – Abeokuta, Nigeria, 17th-19th March, 2014

Mariana, M. *The relationship between parents socio-economic background and students' science literacy in Indonesia evidence from Programme for International Students Assessment PISA 2015.* ***In Social Sciences, Humanities and Economics Conference (SoSHEC)*** 2017, pp. 231-234

Oyinloye, O. T. & Oluwalola, F. K. *Modern office instructional facilities in office technology and management in Polytechnics: a means to insecurity management in Nigeria*. **ABEN Conference Proceedings** 1 (1) 2019, pp.125-133

Wardrop, N.A. Jochem, W.C. Bird, T.J. Chamberlain, H.R. Clarke, D. Kerr, D. Bengtsson, L. Juran, S. Seaman, V. & Tatem, A.J. *Spatially disaggregated population estimates in the absence of national population and housing census data*. **Proceedings of the National Academy of Sciences**, *115*(14) 2018, pp.3529-3537

Wibawa, S.C., Arsana, I.M., Sahlan, M. & Rachmaningrum, F.A. *December development of vocational online examination: A case study of computer systems.* ***In 1st Vocational Education International Conference (VEIC 2019)***, 2019, pp. 329-332

Internet Sources

Dembo, T. *Der argeralsdynamisches problem*. **Psychol. Forsch**, 15 2019, pp. 1- 144. Retrieved from:http://www.gestalttheory.net/cms/uploads/pdf/archive/1934_1960/theory_regressio_frustration_lewin.pdf

Priye, S.T. *The corrosive effect of corruption on Nigeria educational system*. **Retrieved from** www.gamji.com/article6000/news7987.htm. 2017

Mueller, D. *Wikipedia: The Free Encyclopedia*, **Retrived from** https://online.ucpress.edu/jams/article-abstract/72/1/279/109693/Review-Wikipedia-The Free-Encyclopedia. 2019

Umunadi, E. K. *Provision of equipment and facilities in vocation and technical education for improving carrying capacity of Nigeria's Tertiary Institutions*. **African Society For Scientific Research (ASSR)** Retrieved from http://www.hrmars.com/admin/pics/293pdf. 2018

Journals

Abad-Segura, E., González-Zamar, M.D., Infante-Moro, J.C. & Ruipérez, G. *Sustainable management of digital transformation in higher education: Global research trends*. **Sustainability**, 12(5) 2020

Abd Majid, N., Zainol F.A. & Afthanorhan, A. *Does school cooperative program increase entrepreneurial intention? A structural equation modelling approach.* **Humanities**, (2) 2020, pp.645-51

Abdullah, M.K.L., Ali, A.M., Abd Wahid, H. & Hudin, N.S. Integrated model of the implementation of pedagogical skills in teaching and learning of the 21st century among lecturers of universiti pendidikan Sultan Idris. **Management Research Journal**, *9*, 2020, pp.36-42

Abiodun, T.O. Ogundeji M.A. & Asanre, A.A. *Teachers'skills as predictors of students'academic achievement in mathematics in Ogun State, Nigeria.* **Sapientia Foundation Journal of Education, Sciences and Gender Studies**, *2*(3) 2020, pp. 69 -76

Adebayo O.O. & Adigun, S.Q. *Impact of instructional aids on students' academic performance in physics in secondary schools in Federal Capital Territory (FCT) Abuja, Nigeria.* **European Scientific Journal, ESJ**, *14*(4) 2018, pp.366-376

Ademiluyi, L.F. *An assessment of the continued relevance of the secretarial profession in era age of office technology.* **Nigerian Journal of Business Education (NIGJBED)**, *3*(1) 2018, pp.47-56

Adeogum, A. A. *The principal and the financial management of public secondary schools in Osun State*, **Journal of Educational System and Development**. 5(1) 2001, pp.1 – 10

Adeoti, O.D. & Oyedele, J.F. *Utilization of instructional resources for teaching self-employment skill acquisition by business education students in tertiary institutions*. **KWASU Journal of the Business of Education**, *3*(1) 2022, pp.255-263

Agwu, P.C. & Osuji, G.E. *Extent of availability and accessibility of instructional media for teaching and learning government in senior secondary schools in Enugu Education Zone, Enugu State, Nigeria*. **Advance Journal of Education and Social Sciences**, *6*(4) 2021, pp.23-7

Ahmed, S. Chase, L.E. Wagnild, J. Akhter, N. Sturridge, S. Clarke, A. Chowdhary, P. Mukami, D. Kasim, A. & Hampshire, K. *Community health workers and health equity in low-and middle-income countries: systematic review and recommendations for policy and practice.* **International journal for equity in health**, 21(1) 2022, pp.1-30

Ajayi, K.O. Onibeju, M.O. & Olutayo, D.O. Teachers' qualification, attitude and mastery of content as correlates of students' academic achievement in economics in Lagos State, Nigeria. **KIU Journal of Humanities**, *5*(1) 2020, pp.315-324

Akamigbo, I.S. & Eneja, R.U. *Evaluation of Financial Accounting Curriculum in Senior Secondary Schools in Nigeria.* **Nnadiebube Journal of Education in Africa**, *5*(3) 2020, pp. 82-97

Akanbi, G.O. & Jekayinfa, A.A. *Education and emancipation, educational policies and «de emancipation»: A history of the Nigerian education system from 1914 to 2014*. **Espacio, Tiempo y Educación**, *6*(2) 2019, pp.177-196

Akueyinwa O.C. & Nwobi, L.N. *Assessment of availability and adequacy of instructional resources for quality assurance in Colleges of Education in Anambra State.* **Journal of Educational Research & Development,** *4*(1) 2021, pp. 209 - 214

Almanthari, A., Maulina, S. & Bruce, S.*Secondary school mathematics teachers' views on e learning implementation barriers during the cOVID-19 pandemic: The case of Indonesia.* **Eurasia journal of mathematics, science and technology education**, *16*(7) 2020, pp. 2-9

Amaijo, S.N. *Impact of school feeding programme on learners' academic performance in mlunduzi ward, Tanzania*. **International journal of educational studies**, *5*(3) 2018, pp.125-130

Amie-Ogan, T.O., Edo, B. & Elenwo, P.M. *Perceived Influence of Management of Material Resources on Quality Service Delivery in Junior Secondary Schools in Rivers State.* **International Journal of Contemporary Academic Research**, *3*(2) 2022, pp. 18 -28

Amie-Ogan, T.O. & Friday, E.E. *Influence Of Teachers' Competence On Students' Academic Performance In Public Senior Secondary Schools In Ikot Ekpene And Essien Udim Local Government Areas Of Akwa Ibom State.* **International Journal of Innovative Social Sciences & Humanities Research** 8(4) 2020, pp.118-128

Amie-Ogan, T.O. & Omunakwe, F.B. *Perceived influence of teachers" quality on students" academic performance in public senior secondary schools in Port Harcourt Metropolis of Rivers State, Nigeria.* **International Journal of Innovative Social & Science Education Research**, *8*(3) 2020, pp.146-161

Amos, A.O., Ehimen, E.J., Paul I, O. and Sariat, A.O., *Comparative study of research project supervision on the performance of graduating business students in Nigerian Universities*, **Annales Universitatis Mariae Curie-Skłodowska. Sectio H. Oeconomia,** *52*(6) 2018, pp.7-23

Ampofo, E.T. & Benedict, O.O. *Determinants of academic performance among senior high school (shs) students in the ashanti mampong municipality of Ghana.* **European Journal of Research and Reflection in Educational Sciences** *3*(3) 2015, pp. 33- 48

Anazia, I.U. *Quantitative and Verbal Aptitudes as Predictors of Senior Secondary School Students' Performance in Economics*. **IAFOR Journal of Education**, *7*(1), 2019, pp.7 -18

Anie, S.O. *The economic and social benefits of ict policies in Nigeria*. **Library Philosophy and Practice**, (*1*) 2011, pp.125

Anthony, N. Obeten, N. Bassey, O. Usang O. & Benjamin, A. *Evaluation of the extent of funding and supervision in the implementation of the Universal Basic Education Programme in schools of Cross River State, Nigeria. Türk Fizyoterapi ve Rehabilitasyon Dergisi/Turkish*, **Journal of Physiotherapy and Rehabilitation**. 32 2021, pp.31939 -31954

Anyim, W.O. *Perception of library users on the use of ICT facilities in Abia State polytechnic library, Nigeria,* **International Journal of Marketing & Human Resource Research,** *2*(3) 2021, pp.169-177

Argyropoulou, E. *International organizations of educational planning, government policies and school management and leadership*. **China-USA Business Review**, 17(2) 2018, 53-63

Arhueremu, M.V. & Naeleen, M.N.M. *Adequacy and functionality of information and communication technology resources in business education programme of colleges of education in Delta State*. **International Scholars Journal of Arts and Social Science Research,** *3*(2) 2020, pp.32-39

Ayo, A.C. & Oludele, O.G. *Evaluation of the implementation of the universal basic education Yoruba language curriculum in south western Nigeria.* **Theory and Practice in Language Studies**, *9*(12) 2019, pp. 1465-1473

Azhar, K.A. & Iqbal, N. *Effectiveness of Google classroom: Teachers' perceptions.* **Prizren Social Science Journal**, *2*(2) 2018, pp.52- 66

Azhary, S.A., Supahar, S., Kuswanto, K., Ikhlas, M. & Devi, I.P. *Relationship between behavior of learning and student achievement in physics subject.* **Jurnal Pendidikan Fisika Indonesia,** *16*(1) 2020, pp.1-8

Babajanova, K. *Enhancing pedagogical competence in modern pedagogy*. **Academic research in educational sciences**, *2*(2) 2021, pp.1055-1059

Bakar, R. *The influence of professional teachers on Padang vocational school students' achievement*. **Kasetsart Journal of Social Sciences**, *39*(1) 2018, pp.67-72

Bal-Taştan, S., Davoudi, S.M.M., Masalimova, A.R., Bersanov, A.S., Kurbanov, R.A., Boiarchuk, A.V. & Pavlushin, A.A. *The impacts of teacher's efficacy and motivation on student's academic achievement in science education among secondary and high school students.* **EURASIA Journal of Mathematics, Science and Technology Education**, *14*(6) 2018, pp.2353-2366

Barnes, S.J. *Information management research and practice in the post-COVID-19 world.* **International Journal of Information Management**, *55*, 2020. pp.102175

Bedriñana, J K.G., Martín, A..A.R. & Añaños, F.T. *Human Rights in the Least Developed Countries of Asia: An Index for Quantifying Sustainable Development Goal 3 (Good Health and Wellbeing).* **International Journal of Environmental Research and Public Health**, *18*(9) 2021, pp.4747

Bello A. & Audu, A.R. *Sociological rethinking of University Education system: Focus on rescue, academic integrity and Nigeria as a Nation*, **Kano Journal of Educational Psychology (KaJEP)**, 2 (1) 2020, pp. 127-142

Blaikie, N. *Confounding issues related to determining sample size in qualitative research.* **International Journal of Social Research Methodology**, *21*(5) 2018, pp.635 -641

Borgstede, M. & Scholz, M. *Quantitative and Qualitative Approaches to Generalization and Replication–A Representationalist View*. **Frontiers in psychology**, *12* 2021, pp.605191

Bouffard, T., Boisvert, J., Vezeau, C. & Larouche, C. *The impacts of goal orientation on self regulation and performance among college students*. **British Journal of Educational Psychology**, 65 2018, pp.317-329

Bozkurt, A. Jung, I. Xiao, J. Vladimirschi, V. Schuwer, R. Egorov, G. Lambert, S. Al-Freih, M. Pete, J. Olcott Jr. D. & Rodes, V. *A global outlook to the interruption of education due to COVID-19 pandemic: Navigating in a time of uncertainty and crisis*. **Asian Journal of Distance Education**, *15*(1) 2020, pp.1-126

Briggs, B. *Teaching methods as correlate of student performance in business studies in selected public secondary schools in Port Harcourt***. International Journal of Innovative Social and Science Education Research**, *7*(2) 2019, pp.1-12

Buba, M.M. & Hamman, H. *An appraisal of availability of human and material resources for teaching and learning office technology and management courses in Polytechnics in Adamawa State, Nigeria*. **Nigerian Journal of Business Education (NIGJBED)**, *7*(1) 2020, pp.50-63

Buwah, J.S., Wannang, V.I. & Duktur, S.L. Business teacher education and training: a panacea for educational challenges. **Nigerian Journal of Business Education (NIGJBED),** *8*(1) 2021, pp.111-120

Bylieva, D. Lobatyuk, V. Safonova, A. & Rubtsova, A. *Correlation between the practical aspect of the course and the e-learning progress.* **Education Sciences**, *9*(3) 2019, p.167

Chetty, N.D.S, Handayani, L., Sahabudin, N.A., Ali, Z., Hamzah, N., Rahman, N.S.A. & Kasim, S. *Learning styles and teaching styles determine Students' academic performances.* **International Journal of Evaluation and Research in Education**, *8*(4) 2019, pp.610-615

Chonjo, P. N. *The quality of Education in Tanzania primary schools: an assessment of physical facilities and teaching learning materials*. **UTAFITI** (new series) l(1) 2018, pp.36-47

Cleland, J. McKimm, J., Fuller, R., Taylor, D.. Janczukowicz, J. & Gibbs, T.*Adapting to the impact of COVID-19: Sharing stories, sharing practice*. **Medical Teacher**, *42*(7) 2020, pp.772-775

Collins, E. *Overemphasis on certificates than competence: An indicator of failed educational standard in Nigeria.* **Intermational Journal of Education and Evaluation**, 4(9) 2018, pp.28-36

Cook, K.D. Dearing, E. & Zachrisson, H.D. *Is parent–teacher cooperation in the first year of school associated with children's academic skills and behavioral functioning?,* **International Journal of Early Childhood**, *50*(2) 2018, pp.211-226

Daniel, M.C. & Anne, S.K. *Accessibility and utilization of information communication technology infrastructure on teaching and learning of engineering courses in Polytechnics in Kenya*. **European Journal of Research and Reflection in Educational Sciences**, *9*(1) 2021, pp.57-54

DeFilippis, E.M., Stefanescu S. A.C., & Reza, N. *Adapting the educational environment for \ cardiovascular fellows-in-training during the COVID-19 pandemic*. **Journal of the American College of Cardiology**, *75*(20) 2020, pp.2630-2634

Desforges, C. & Abouchaar, A. *The impact of parent involvement, parent support and family education on pupil achievement and adjustment: A literature review*. **Department of Education and Skill: Queen's Printer**. 2020

Diaz, A. L. *Personal, family academic factors affecting low achievement in secondary school.* **Electronic Journal of Research in Educational Psychology and Psychopedagogy**, 1 (1) 2019, pp. 43-66

Dikeocha, L.U. Assessment of the impact of Tetfund on management of business teacher education in colleges of education in the South East Zone. **Nigerian Journal of Business Education (NIGJBED)**, *8*(3) 2022, pp.24-35

Dodge, K. *Socialization mediators of the relation between socio-economic status and child conduct problems*, **Child Development**, 65(2) 2017, pp. 649-665

Durmus, A. & Güven, M. *The relationship between teaching styles of English instructors and learning styles of english prep class students at a Turkish State University.* **Asian Journal of University Education**, 16 (3) 2020, pp.15-26

Dzimińska, M., Fijałkowska, J. & Sułkowski, Ł. *Trust-based quality culture conceptual model for higher education institutions*. **Sustainability**, *10*(8) 2018, pp.2599

Eamon, M. K. *Social-demographic, school, neighbourhood and parenting influence on academic achievement of Latino young adolescents.* **Journal of youth and adolescence**, 34 (2), 2018, pp.163-175

Earthman, G.I. Examining *Methodological Differences: Research on the Relationship between School Building Condition and Student Achievement*, **Educational Planning**, *25*(3) 2018, pp.47-61

Edokpolor, J.E. & Dumbiri, D.N. *Resource adequacy and utilization for teaching and learning effectiveness in vocational education programmes in south-south Nigerian universities.* **Journal of vocational education studies**, *2*(1) 2019, pp.1-12

Ekeh, P. U. *Gender bias and achievement in science and mathematics among school pupils. Implications for human resource development*. **Journal of Curriculum Organization of Nigeria**, 10 (1), 2017. 30-33

Ekeng, E.B. Abuo, C. & *Amuchi,* O.G. *Inclusive counselling education for entrepreneurial and national development*. **International Journal of Education and Evaluation,** *6*(3), 2020. pp.24-34

Ekezie A.I.A. & Tugwell, O.O. *Assessment of the capacity building needs of agricultural science teachers for innovative instructional delivery in secondary schools in Rivers State, Nigeria.* ***INVOTEC*****,** *15*(2) 2019, pp.43-57

El-Sabagh, H.A. *Adaptive e-learning environment based on learning styles and its impact on development students' engagement*. **International Journal of Educational Technology in Higher Education**, *18*(1) 2021, pp.1-24

Emeasoba, N.C. *An evaluation of equipment for the teaching and learning of business studies in public junior secondary schools in Enugu State*. **International Journal of Vocational and Technical Education**, *10*(7) 2018, pp.54-60

Ernawati, R. *March influence of peer group conformity on moral identity and penchant for watching violent television shows on aggressive behavior in University Christian Indonesia*. **In International Symposium on Social Sciences, Education, and Humanities (ISSEH 2018)** 2019, pp. 35-37

Essien, E.E. *Influence of school location on students' academic achievement in social studies in Colleges of Education in Cross River State, Nigeria,* **Journal of Research in Science and Technology**, 7 (2), 2017

Eteokleous-Grigoriou, D.K.N. *To cite this document: Despo Ktoridou Nikleia Eteokleous Grigoriou,(2011)," Developing digital immigrants' computer literacy: the case of unemployed women"*, **Campus-Wide Information Systems**, 28 (3) 2018. pp. 154-163

Fadare, G.O. *Evaluation in business education: Challenges of mastery of shorthand skills*. **Nigerian Journal of Business Education (NIGJBED)**, *7*(2) 2020, pp.361-374

Faremi, M.F. *An assesment of teacher retention and job security in private secondary schools in Ogun State, Nigeria.* **Bulgarian Journal of Science & Education Policy**, *11*(2) 2017, pp. 279-293

Fasakin, M.O. & Ayeni, C.F. *The menace of cultism in Nigeria tertiary institutions: Implications for educational development in Nigeria.* **Journal of Contemporary Issues in Educational Planning and Administration**, *5*(2) 2020, pp.139

Fitriansyah, R. Fatinah, L. & Syahril, M. *Critical Review: Professional Development Programs to Face Open Educational Resources in Indonesia.* **Indonesian Journal on Learning and Advanced Education** *(IJOLAE)*, *2*(2) 2020, pp.109-119

Fletcher Jr, E.C. Warren, N.Q. & Hernández-Gantes, V.M. *Preparing high school students for a changing world: College, career, and future ready learners*. **Career and Technical Education Research**, *43*(1) 2018, pp.77-97

Fu, C. & Mehta, N. *Ability tracking, school and parental effort, and student achievement: A structural model and estimation*. **Journal of Labor Economics**, *36*(4) 2018, pp.923-979

Gobena, G.A. Factors affecting in-service teachers' motivation: Its implication to quality of education. ***International Journal of Instruction***, *11*(3) 2018, pp.163-178

Greenhow, C. Galvin, S.M. & Staudt Willet, K.B. *What should be the role of social media in education?* **Policy Insights from the Behavioral and Brain Sciences**, *6*(2) 2019, pp.178-185

Griffiths, T.L. *Understanding human intelligence through human limitations.* **Trends in Cognitive Sciences**, *24*(11) 2020, pp.873-883

Grüner, S. *Rethinking how risk aversion and impatience are linked with cognitive ability: Experimental findings from agricultural students and farmers*. **Journal of Environmental Economics and Policy**, 2021, pp.1-12

Gumennykova, T. Pankovets, V. Liapa, M. Miziuk, V. Gramatyk, N. & Drahiieva, L. *Applying instructional design methods to improve the effectiveness of blended-learning*, **International Journal of Management**, *11*(5) 2020, pp.31-42

Guo, P. & Xin, Z.*The phenomenon and mechanism of intergenerational transmission of economic attitudes and behaviors*, **Advances in Psychological Science**, *28*(7) 2020, pp.1199

Gwamna, M.U. Integrating Information and Communication Technology in Teaching Physics beyond Covid-19. **Journal of Educational Assessment and Pedagogical Process (JEAPP) Online Journal***, 1*(1) 2020

Hansen, M.N. & Mastekaasa, A. *Social origins and academic performance at University*. **European Sociological Review**, *22*(3) 2006, pp.277-291

Haris, I., Naway, F., Pulukadang, W.T., Takeshita, H. & Ancho, I.V. *School supervision practices in the indonesian education system; perspectives and challenges,* **Journal of Social Studies Education Research**, *9*(2) 2018, pp.366-387

Hartinah, S. Suherman, S. Syazali, M. Efendi, H. Junaidi, R. Jermsittiparsert K. & Rofiqul, U.M.A.M. *Probing-prompting based on ethnomathematics learning model: The effect on mathematical communication skill*. **Journal for the Education of Gifted Young Scientists**, *7*(4) 2019. pp.799-814

Haulle, E. & Kabelege, E. *Relevance and quality of textbooks used in Primary Education in Tanzania: A case of social studies textbooks,* **Contemporary Education Dialogue,** *18(1) 2021, pp.12-28*

He, W.J. A *4-year longitudinal study of the sex-creativity relationship in childhood, adolescence, and emerging adulthood: Findings of mean and variability analyses*. **Frontiers in Psychology**, *9 2018*, pp.2331

Hilty, D., Chan, S., Torous, J., Luo, J. & Boland, R. *A framework for competencies for the use of mobile technologies in psychiatry and medicine: Scoping review.* **JMIR mHealth and uHealth,** *8*(2) 2020, pp.e12229

Hsiao Y.J. & Sorensen, S.P. *Evidence-based practices provided in teacher education and in service training programs for special education teachers of students with autism*

spectrum disorders. **Teacher Education and Special Education**, *42*(3) 2019, pp.193 -208

Ibrahim, J.N., Dauda, M.O and Jibrin, A.G. *Utilization of biology laboratory teaching facilities and equipment in senior secondary schools in Borno State, Nigeria*, **Journal of Science, Technology and Education**, *9*(4) 2022, pp.152-170

Ifeanyi, N.O., Irene, I.C., Justina, A.C. & Virginus, N.U. *Use of information and communication technologies for agricultural teaching and research in universities in Enugu State, Nigeria,* **Journal of Agricultural & Food Information**, *20*(1) 2019, pp.71-85

Igberaharha, C.O. *Improving the quality of technical vocational education and training (TVET) for sustainable growth and development of nigeria*. **Journal of Education and e Learning Research**, *8*(1), 2021. pp.109-115

Ile, C.M. & Okafor, C.V. *Implementers'ratings of resource challenges facing office technology and management programme in polytechnics in South-East, Nigeria.* **NAU Journal of Technology and Vocational Education,** *6*(1) 2021, pp.176-188

Immordino-Yang, M.H., Darling-Hammond, L. & Krone, C.R. *Nurturing nature: How brain development is inherently social and emotional, and what this means for education*. **Educational Psychologist**, *54*(3) 2019, pp.185-204

Ingersoll, R.M. Sirinides P. Dougherty, P. *Leadership matters: Teachers' roles in school decision making and school performance*. **American Educator**, 42(1) 2018, pp.13

Inguva, P., Lee-Lane, D., Teck, A., Anabaraonye, B., Chen, W., Shah, U.V. & Brechtelsbauer, C. *Advancing experiential learning through participatory design*. **Education for Chemical Engineers**, *25* 2018, pp.16-21

Israel, P.C. *Assessment of curriculum load of the National Commission for Colleges of Education's minimum standard for Nigeria Certificate in Education*, **Journal of Research and Opinion**, *7*(1) 2020, pp.2599-2605

Issacar, N. & Hesbon, A.O. *Instructional learning materials' use and Students academic outcomes in private Secondary Schools in Rwanda: A case study of Nyarugenge District.* **Journal of Education**, *4*(7) 2021, pp.76-93

Jacob, O.N., Josiah, H.F. & Solomon, A.T. *Effects of corruption on public universities administration in Nigeria.* **Emergent: Journal of Educational Discoveries and Lifelong Learning (EJEDL)**, *2*(7) 2021. pp.5-18

Jegede, S. A. & Adedajo, J. O. *Enriching physics education in Nigeria and enhancing a sustainable Technological Development.* **Greener Journal of Research**, 3(2), 2015. 80 -84

Jiyanto, J. *Student Centered Learning (SCL)-Based Learning Evaluation and Its Application in Islamic Religious Education*. **At-Tajdid: Jurnal Ilmu Tarbiyah**, *11*(1) 2022, pp.16-25

Ju, B. *The roles of the psychology, systems and economic theories in human resource development*. **European Journal of Training and Development**, *43*(1/2) 2019, pp.132 -152

Kenni, A.M., *Analysis of students' performance in chemistry in the west African senior school certificate examination (WASSCE) and national examination council (NECO) from 2015 2018.* **International Journal of Research and Analytical Reviews,** *7*(1) 2020, pp.35-49

Khuzwayo M.E. & Booi, K.*Transformation of assessment of the pre-service life sciences teachers: issues of curriculum development in education and training in South Africa.* **International Journal of Learning, Teaching and Educational Research**, *20*(7) 2021, pp. 44-60

Kim, J. & Sun, M. *The implementation and potential effects of teacher evaluation under local control.* **School Effectiveness and School Improvement**, *32*(2) 2021, pp.279-305

Kim, L.E. Jörg, V. & Klassen, R.M. *A meta-analysis of the effects of teacher personality on teacher effectiveness and burnout*. **Educational psychology review**, *31*(1) 2019, pp.163 -195

Kim, S.W. Brown, K.E. Kim, E.J. & Fong, V.L. *"Poorer children study better": How urban Chinese young adults perceive relationships between wealth and academic achievemen*t. **Comparative Education Review**, *62*(1) 2018, pp.84-102

König, J., Jäger-Biela, D.J. & Glutsch, N. *Adapting to online teaching during COVID-19 school closure: teacher education and teacher competence effects among early career teachers in Germany*. **European Journal of Teacher Education**, *43*(4) 2020, pp.608-622

Kohl, K. & Hopkins, C.A. *Learnings from the# IndigenousESD global research: Twenty-first century competencies for all learners*. **Journal of Teacher Education for Sustainability**, *22*(2), 2020. pp.90-103

Krishnamurthy, S. *the Future of Business Education: A Commentary in the Shadow of the Covid 19 Pandemic*. **Journal of Business Research** 117 2020, pp.1-5

Kumar, P. Kumar, A. Palvia, S. & Verma, S. Online business education research: systematic analysis and a conceptual model. **The International Journal of Management Education**, *17*(1) 2019, pp.26-35

Kumar, R., Zusho, A. & Bondie, R. *Weaving cultural relevance and achievement motivation into inclusive classroom cultures*. **Educational Psychologist**, *53*(2) 2018, pp.78-96

Kwilinski, A. Dalevska, N. Kravchenko, S. Hroznyi, I. & Kovalenko, O. *Formation of the entrepreneurship model of e-business in the context of the introduction of information and communication technologies.* **Journal of Entrepreneurship Education**, *22 (1)* 2019 pp.1-7

Lawrent, G. *School infrastructure as a predictor of teacher identity construction in Tanzania: The lesson from secondary education enactment policy*. **African Studies**, *79*(4), 2020. pp.409-427

Liebowitz, D.D. & Porter, L. *The effect of principal behaviors on student, teacher, and school outcomes: A systematic review and meta-analysis of the empirical literature*. **Review of Educational Research**, *89*(5) 2019, pp.785-827

Mark, S.L., Tretter, T., Eckels, L. & Strite, A. An *equity lens on science education reform-driven classroom-embedded assessments*, **Action in Teacher Education**, *42*(4) 2020, pp.405 -421

Mashala, Y.L. *The impact of the implementation of free education policy on secondary education in Tanzania.* **International Journal of Academic Multidisciplinary Research (IJAMR)**, *3*(1) 2019, pp.6-14

Maulana, H.A. *Psychological Impact of Online Learning during the COVID-19 Pandemic: A Case Study on Vocational Higher Education.* **Indonesian Journal of Learning Education and Counseling,** *3*(2) 2021, pp.130-139

Messac, L. *Birthing a nation: political legitimacy and health policy in hastings kamuzu Banda's Malawi*, 1962–1980. **Journal of Southern African Studies**, *46*(2) 2020, pp.209-228

Mirvald, M. & Tománková, M. *The determinant of success in basic economics courses taught by the department of economics at the University of Economics in Prague*. **International Journal of Economic Sciences**, *7*(1) 2018, pp.82-90

Morris, T., T., Davies, N.M., Dorling, D., Richmond, R.C. & Smith, G.D. *Testing the validity of value-added measures of educational progress with genetic data.* **British Educational Research Journal**, *44*(5) 2018, pp.725-747

Mortada, L. Bolboland J. & Kadry, S. Factors affecting students' performance a case of private Colleges in Lebanon. **J Math Stat Anal**, *1* 2018, pp.105

Mo, Y. Appel, M. Kim, J.W. & Lee, M. *Pre-service teachers' international study experiences or in-service teachers' professional learning communities: what comes into play in Finnish teachers' self-efficacy in multicultural classrooms?* **Teachers and Teaching**, *27*(7) 2021, pp.602-624

Muyaka, J. Omuse, D.E. Malenya, F.L. *Manifestations of boys' under participation in education in Kenya: the case of Busia and Kirinyaga counties*, *compare.* **A Journal of Comparative and International Education**. 2(4) 2021, pp. 1-6

Mykhnenko, V. *Causes and consequences of the war in Eastern Ukraine: an economic geography perspective*. **Europe-Asia Studies**, *72*(3) 2020, pp. 528-560

Nchuchuwe, F.F. & Etim, E. *Human capital development and service delivery in Lagos State: A study of selected ministries*. **Asian Journal of Advanced Research and Reports,** *12*(2) 2020, pp.10-19

Neumann, K., Kind, V. & Harms, U. *Probing the amalgam: the relationship between science teachers' content, pedagogical and pedagogical content knowledge*. **International Journal of Science Education**, *41*(7) 2019, pp.847-861

Nguyen, V.B.H., Vu, T.M.H., Hoang, T.K.H. & Nguyen, T.M.N. *Vietnamese education system and teacher training: Focusing on science education.* **Asia-Pacific Science Education**, *6*(1) 2020, pp.179-206

Ngwacho, A.G. COVID-19 *pandemic impact on Kenyan education sector: Learner challenges and mitigations.* **Journal of Research Innovation and Implications in Education**, *4*(2) 2020, pp.128-139

Nnajiofor, F.N. & Ejikeme, C.E. *Teachers' utilization of instructional technology for quality teaching of business studies in Secondary Schools in Enugu State, Nigeria*. **European Journal of Education Studies,** 6(12) 2020, pp. 207-226

Nnamani, S.N. & Anih, H.U. *Students' attitude to music in foreign language classes in secondary schools in Enugu urban*. **International journal of English literature and social sciences**, *5*(4) 2020, pp.1252-1261

Nnorom, N. & Obianuju, C.M. *Improvisation in science instruction and the roles of science teachers: An educational innovations for sustainable developments. Coou,* **Journal of Educational Research**, *6*(1) 2021

Nor, N.M., Rahimah, E., Habsah, M.,s Kamariah, Y. & Juliana, N.R. *"Effects of teachers' teaching competencies on students' academic performance mediated by holistic centered learning style based on SUMUR Program at Secondary Religious Schools."* **International Journal of Academic Research in Progressive Education and Development**, 8(2) 2019, pp. 25-38

Obiukwu C.A. & Nwobi, L.N. *Assessment of availability and adequacy of instructional resources for quality assurance in Colleges of Education in Anambra State,* **Journal of Educational Research and Development,** 4(1) 2021, pp.209 - 214

Obodo, A.C. Ani, M.I. & Thompson, M. *Effects of improvised teaching-learning materials on the academic performance of junior secondary school students in basic science in Enugu State, Nigeria*. **Journal of Research & Method in Education**, 10(4) 2020, pp. 23-30

Octaberlina, L.R. & Muslimin, A.I. *EFL students perspective towards online learning barriers and alternatives using Moodle/Google Classroom during COVID-19 pandemic.* **International Journal of Higher Education**, *9*(6) 2020, pp.1-9

Odunjo-Saka, K.A. Saka, S.A. & Lawal, A.M. *Gender difference and peer pressure in conformity of a sample of adolescents in senior secondary school*. **Nigerian Journal of Applied Behavioural Sciences**, 606 2018, pp.615

Ogolo, F.I. & Agbagbue, A.O. *Business education administrators' information management competencies and administrative roles performance in Rivers State Tertiary Institutions*. **Nigerian Journal of Business Education (NIGJBED),** *7*(1) 2020, pp.258 -270

Ogunmola, O.M. Ohia, I.N. & Alonge, A.S. *Teacher Factors and Students' Achievement inProse Literature among Senior Secondary School Students in Ogbomoso South Local Government Area, Oyo State, Nigeria*. **International Journal of Arts and Social Sciences Education (IJASSE)**, 7(2) 2022, pp.54

Ojo, A.A. *Integrating entrepreneurship Education into higher Education curriculum for self reliance and National Development in Nigeria*, **Journal of Humanities**, *3*(4), 2019. pp.93-101

Ojo, O.A. & Adu, E.O. *The effectiveness of Information and Communication Technologies (ICTs) in teaching and learning in high schools in Eastern Cape Province.* **South African Journal of Education**, *38*(1) 2018

Okolie, U.C. Ogwu, E.N. Osuji, C.U. Ogba, F.N. Igwe, P.A. & Obih, S.O. *A critical perspective on TVET teachers' pedagogical practices: insights into the guiding pedagogical principles in practice.* **Journal of Vocational Education & Training**, 2021 pp.1-20

Okoro, J. & Zagbamu, T.P. 2021. *Students assessment of business teacher education lecturers on instructional delivery practices in Edo and Delta States.* **Nigerian Journal of Business Education (NIGJBED)**, *8*(2), pp.157-163

Olaniyi, L.H. & Awe, B.A. Gap analysis and demographic differentiation of awareness of technology-based instructional resources among business educators, **Gender and Behaviour**, *19*(3) 2021, pp.18471-18479

Olatunji, O.M. *The goals of tertiary education: A philosophical assessment of Nigeria's national policy on education*. **Educația Plus**, *20*(2) 2018, pp.230-253

Olufemi, A.O. Utilization of improvised resources for effective teaching and learning of agricultural science in secondary schools in Ibarapa Area of Oyo State. **Capital Journal of Educational Studies (CAJES)**, *6*(2) 2020, pp.15-24

Olufemioladebinu, T., Adediran, A.A. & Oyediran, W.O. *Factors influencing the academic achievement of students in Colleges of Education in Southwest, Nigeria.* **Journal of Education and Human Development,** *7*(3) 2018, pp.109-115

Oluwalola, F.K. & Oyinloye, O.T. Modern office instructional facilities in office technology and management in polytechnics and insecurity management in Nigeria. ***FUOYE Journal of Education*****,** 1(1) 2018, pp.121- 128

Omeodu, M.D. *Impact of practical work in the teaching of physics in secondary schools in Rivers State.* **International Journal of Education and Evaluation**, *4*(5) 2018, pp.12-22

Omeodu M.D. & Abara, J.F. *Relevance of field trips in teaching and learning of physics in secondary schools in Port Harcourt Metropolis Rivers State.* **International Journal of Education and Evaluation***, 4 (4)* 2018, pp.67-87

Omodan, B.I., & Tsotetsi, C. *Student-Teacher relationship as a panacea for students' academic performance in Nigerian Secondary Schools: An attachment perspective*. **Journal of Social Studies Education Research**, *9*(4) 2018, pp.82-101

Onajite, G.O. Olaniyi, O.N. Oyerinde, D.O. Onyesom, M. & Aina, M.A. *Teachers utilization of instructional materials for effective teaching of business studies in junior secondary schools in Delta State*. **Mediterranean Journal of Social Sciences**, *10*(6) 2019, pp.27 -27

Opare, S.A. Manu, F.O. Ackah, J.K. & Akrosumah, S.M. *An investigation into teaching and learning materials (TLMs) science tutors use to assess physics lessons in the colleges of education in Ghana.* **American Journal of Modern Physics and Application**, *5*(4) 2018, pp.91-96

Osakwe, G.N. *Assessing the level of availability and utilization of materials for teaching biology in private and public secondary schools in Delta State ATBU.* **Journal of Science, Technology and Education**, *8*(3) 2020, pp.319-327

Osarenren-Osaghae, R.I. & Irabor, Q.O. *Educational policies and programmes implementations: A case study of education funding, Universal Basic Education (UBE) and Teacher Education,* **International Journal of Educational Administration and Policy Studies,** *10*(8), 2018. pp.91-102

Osarenren-Osaghae, R.I. & Irabor, Q.O. *Educational Policies and Programmes Implementations: A Case Study of Education Funding, Universal Basic Education (UBE) and Teacher Education.* **International Journal of Educational Administration and Policy Studies**, *10*(8) 2018, pp.91-102

Osuntuyi, E.O. *Influence of school environment on pupils' academic achievement in basic technology in Public Junior Secondary Schools in Ekiti State, Nigeria,* **IJO International Journal of Business Management,** *4*(05) 2021, pp.32-43

Onyinyechi, O.H. *Use of instructional resources for teaching and learning economics education in secondary schools in Nigeria*. **IAA Journal of Education**, *6*(1) 2020, pp.32-37

Pellas, N., Fotaris, P., Kazanidis, I. & Wells, D. *Augmenting the learning experience in primary and secondary school education: A systematic review of recent trends in augmented reality game-based learning.* **Virtual Reality**, *23*(4) 2019, pp.329-346

Philip, A.O. & John, O. *Influence of educational input and process variables on ability of pupils with special needs to complete their study: A study of South-West, Nigeria.* **The Journal of Advocacy and Rehabilitation in Special Education**, December 2019. Vol. 18, issue 1, pp. 1-7. *The Journal*, *18*(1) 2019, pp.1-7

Philipsen, B. Tondeur, J. Pareja Roblin, N. Vanslambrouck, S. & Zhu, C. *Improving teacher professional development for online and blended learning: A systematic meta aggregative review.* **Educational Technology Research and Development**, *67*(5), 2019. pp.1145-1174

Prykhodko, I. Horielyshev, S. Matsehora, Y. Lefterov, V. Larionov, S. Kravchenko, O. Baida, M. Halkina, O. & Servachak, O. *Automation of psychological selection procedures for personnel to specific activities*. **Pertanika Journal of Science & Technology**, *30*(1), 2022, pp. 761-776

Prykhodko, I., Matsehora, Y., Kolesnichenko, O., Bolshakova, A., Bilyk, O. & Haydabrus, A.V. *The Main Factors and Personality Characteristics to Predict the Risk of Suicide by*

Military Personnel in Hostilities. BRAIN. **Broad Research in Artificial Intelligence and Neuroscience,** *11*(3) 2020, pp.72-87

Rajagopalan, I. *Concept of Teaching*. **Shanlax International Journal of Education**, *7*(2) 2019, pp.5-8

Riswanto, A. & Aryani, S. *Learning motivation and student achievement: description analysis and relationships both*. **The International Journal of Counseling and Education**, *2*(1) 2017, pp.42-47

Robert, M. Todd, J. Ngowi, B.J. Msuya, S.E. Ramadhani, A. Sambu, V. Jerry, I. Mujuni, M.R. Mahande, M.J. Ngocho, J.S. & Maokola, W. *Determinants of isoniazid preventive therapy completion among people living with HIV attending care and treatment clinics from 2013 to 2017 in Dar es Salaam Region, Tanzania*: *A cross-sectional analytical study*. **BMC infectious diseases**. 20(1) 2020, pp.1-9

Robert, A.E. *Office tech. & mgt. curriculum and new technologies: The challenges for office educators in polytechnic in south-south of Nigeria.* **Nigeria Journal of Business Education***,* 1(3) 2016, pp.122-137

Saidovna, R.D. *Pedagogical creativity as a factor of student development.* **Web of Scientist: International Scientific Research Journal**, *2*(05) 2021, pp. 729-736

Salisu, M. & Inuwa, U. *Factors enhancing the implementation of business education curriculum in colleges of education in North Eastern Nigeria. ATBU* **Journal of Science, Technology and Education**, *7*(4) 2020, pp.300-308

Samuel, N. Onasanya, S.A. & Yusuf, M.O. Engagement, learning styles and challenges of learning in the digital era among Nigerian secondary school students. **International Journal of Education and Development using Information and Communication Technology**, *15*(4) 2019, pp.35-43

Sanaie, N. Vasli, P. Sedighi, L. & Sadeghi, B. *Comparing the effect of lecture and Jigsaw teaching strategies on the nursing students' self-regulated learning and academic motivation: A quasi-experimental study.* **Nurse education today,** *79,* 2019, pp.35-40

Sarkam, N.A., Hasan, N.I.A., Jamil, N.I. & Jamal, N.A. *Factor that affect the level of awareness among malaysian toward the COVID-19 Pandemic: A structural equation modeling approach***. Solid State Technology**, *63*(6), 2020. pp.17940-50

Schmidt, S.W. *Our time is now: How the events of 2020 will shape the field of adult education*. **Adult Learning**, *33*(1) 2022, pp.40-42

Scott, C.P., Dieguez, T.A., Deepak, P., Gu S. & Wildman, J.L. *Onboarding during COVID-19: Create structure, connect people, and continue adapting,* **Organizational Dynamics**, *51*(2) 2022, pp.100828

Shaibu, O.G., Ameh, O. & Barinem, S. *Evaluation of business education in Nigeria: Challenges and chances*, **Nigerian Journal of Business Education (NIGJBED),** *3*(2), 2018. pp.272-282

Solanki, S.M. & Xu, D. *Looking beyond academic performance: The influence of instructor gender on student motivation in STEM fields.* **American Educational Research Journal**, *55*(4) 2018, pp.801-835

Sutherland, J. Belec, J. Sheikh, A. Chepelev, L. Althobaity, W. Chow, B.J. Mitsouras, D. Christensen, A. Rybicki, F.J. & La Russa, D.J. *Applying modern virtual and augmented reality technologies to medical images and models*. **Journal of digital imaging**, *32*(1) 2019, pp.38-53

Tahirsylaj, A. & Sundberg, D. *The unfinished business of defining competences for 21st century curricula—a systematic research review*. **Curriculum Perspectives**, *40*(2) 2020, pp.131 145

Tittel, A. & Terzidis, O. *Entrepreneurial competences revised: developing a consolidated and categorized list of entrepreneurial competences.* **Entrepreneurship Education**, *3*(1) 2020, pp.1-35

Tomaszewski, W. Xiang, N. Huang, Y. Western, M. McCourt, B. & McCarthy, I. *The impact of effective teaching practices on academic achievement when mediated by student engagement: Evidence from Australian high schools.* **Education Sciences**, *12*(5) 2022, pp.358

Tripathi, S. *Teachers' Commitment towards Human Resource Development*. **Think India Journal**, *22*(14) 2019, pp.14616-14625

Uchenu, C.A., Okeke-Okonkwo, C.I. & Ifi, C.C. *Improving business education programmes through effective school-industry collaboration for nation building*, **Nigerian Journal of Business Education (NIGJBED),** *6*(1) 2019, pp.158-171

Udosen, I.N. *Instructional media: An assessment of the availability and frequency of use by social studies teachers*. **Journal of Educational Media and Technology (JEMT).** 15(2) 2011, pp.141 -146

Ugwuanyi, M.O. & Eze, M. E. *An assessment of the educational resources available for implementing the mandates of secretary studies programme in Nigerian Polytechnics*, 8(4) 2018, pp.118-128

Ukoette, I.U., Etim, P.J. & Effiong, E.A. Electronic learning as educational innovation and students'academic performance in university of Uyo, Akwa Ibom State, Nigeria, **Nigerian Journal of Business Education (NIGJBED),** *6*(2) 2019, pp.444-453

Wardani, A.D. Gunawan, I. Kusumaningrum, D.E. Benty, D.D.N. Sumarsono, R.B. Nurabadi, A. Handayani, L. Ubaidillah, E. & Maulina, S. *How teachers optimize the role of classroom administration in learning?.* In *6th* **International Conference on Education and Technology (ICET 2020)** 2020, pp. 422-426

Wilhelm, S. Förster, R. & Zimmermann, A.B. *Implementing competence orientation: Towards constructively aligned education for sustainable development in university-level teaching-and-learning.* **Sustainability,** *11*(7) 2019, pp.1891

Wilkinson, B.D. Shank, G. & Hanna, F. *Epistemological issues in counselor preparation: An examination of constructivist and phenomenological assumptions*. **The Journal of Counselor Preparation and Supervision**, *12*(4) 2019, p.13

Yigermal, M.E. *The determinants of academic performance of under graduate students: In the case of Arba Minch University, Chamo Campus*. **Online Submission**, *3*(4) 2017, pp.35 -42

Zeehan, F., Alias, R.A. & Tasir, Z.Discovering digital technology training challenges for future ready educator: A preliminary study from trainer perspective. **Univers. J. Educ. Res,** *8*(3A) 2020, pp.12-23

Zidny, R. Jesper S. & Ingo, E. "*A multi-perspective reflection on how indigenous knowledge and related ideas can improve science education for sustainability*." **Science & Education,** 29(1), 2020, pp.145-185

Zięba, A. *Google Books Ngram Viewer in socio-cultural research*. **Research in Language (RiL)**, *16*(3) 2018, pp.357-376

Thesis/ Dissertations

Dotse, E.Y. *A tablet based tool to aid learning of mathematics for basic 1 and 2 pupils in Berekuso* (**Doctoral dissertation**), 2019

Hamman, H. *Availability and utilization of human and material resources for teaching and learning office technology and management courses in polytechnics in Adamawa State, Nigeria* (**Doctoral dissertation, Kwara State University** (Nigeria), 2019

Kieti, J.M. *An investigation into factors influencing students' academic performance in public secondary schools in Matungulu sub-county, Machakos County* (**Doctoral dissertation**) 2018

Okegbemiro, J.O. *Effects of blended and e-learning on academic achievement of business education students in word processing* (**Doctoral Dissertation, Kwara State University, Nigeria**), 2021

Rogers-Horton, V. *District and School Leaders' Perceptions of Recruitment and Retention of Teachers of Color in Public K-12 Rural Tennessee Schools* (**Doctoral dissertation, Lincoln Memorial University**), 2022

Tety, J.L. *Role of instructional materials in academic performance in community secondary schools in Rombo District, Department of Administration, Planning And Policy Studies, Open University of Tanzania*, **Unpublished Masters Dissertation,** 2016

Appendix

Lead City University

Faculty of Communication and Information Sciences (FCIS)

Department Of Information Management

Dear Respondent,

I am a Master's student of the above-named institution gathering data for the purpose of academic research on the topic "use of instructional resources, teaching on academic learning outcome of students of government-owned polytechnics, Lagos State, Nigeria. To achieve this, your optimum cooperation is needed; there are no right or wrong answers. All your responses will be kept confidential and used for research purpose only.

Thank you.

Chinyere Jennifer ODUMADE

Section A: Demographic Information

Gender: Male ( ), Female ( )

Age: 20 – 25 ( ), 26 – 30 ( ), 31 – 35 ( ), 36 – 40

Educational Level: ND1, ND2, HND1 and HND2

Section B: Academic Learning outcome **of Students of government-owned polytechnics, Lagos State, Nigeria.**

The statement in this section concern academic learning outcome as observed by the selected polytechnics. Using the four-point Likert scale provided below. Please tick the appropriate choice that indicates your opinion on level of the academic learningof your students.This section of the questionnaire will be answered by the students.

Very High (VH) =4, High (H) = 3, Low (L) = 2, Very Low (VL) = 1

S/N	Kindly rate the extent to which your school do the following.	VH 4	H 3	L 2	VL 1
	Content				
1	School syllabus is updated to encourage e-learning	4	3	2	1
2	Lecturers encouraged e-learning while delivering their lectures	4	3	2	1
3	Developing course outline with NBET guideline.	4	3	2	1
4	Covering course outline before the commencement of examination every semester	4	3	2	1

	Knowledge:				
5	Good quality education is maintained at all times	4	3	2	1
6	Students in my school can compete with students from the private schools.	4	3	2	1
7	Students with excellent results (distinction, upper credit) are produced every end of year	4	3	2	1
8	Students perform excellently during lecture.	4	3	2	1
	Skills				
9	Students in my school participating in extra-curricular activities	4	3	2	1
10	Vocational skills are encouraged in my school	4	3	2	1
11	Students that have interest in games are encouraged	4	3	2	1
12	ICT skills are encouraged.	4	3	2	1

Section C: Instructional Resources used by government-owned polytechnics, Lagos State, Nigeria.

The statement in this section concerns instructional resources as observed by the selected polytechnics. Using the four-point Likert scale provided below. Please tick the appropriate choice that indicates your opinion on the use of instructional resources in government-owned polytechnics, Lagos state, Nigeria.This section of the questionnaire will be answered by the students.

Strongly Agree = 4, Agree = 3, Disagree = 2, Strongly Disagree = 1.

S/N	**Kindly rate the extent to which your school do the following.**	**SA 4**	**A 3**	**D 2**	**SD 1**
	Learning Objectives				
1.	Learning objectives are achieved with the aid of the right resources				
2.	Teaching through projectors make learning easier.				
3.	The school management provide electronic materials (e.g. tablets) for easy learning.				
4.	Results are received electronically.				
	Assessment				
5.	Print resources (textbooks, handouts) are available for learning				
6.	Visual resources (computer/laptop/projectors) are available for learning				

7.	Electronic resources (internet or Wi-Fi) are available to access learning materials.				
8.	Availability of audio-visual resources for learning				
	Learning activities				
9.	Reading materials on the Internet (Web pages)are encouraged				
10.	Encouragement of use of computer software for reading instruction				
11.	The school management encourages online learning classes.				
12.	Use of required learning materials for teaching in class is encouraged.				

Section D: Teaching in government-owned polytechnics, Lagos State, Nigeria.

The statement in this section concern teaching as observed by the selected polytechnics. Using the four-point Likert scale provided below. Please tick the appropriate choice that indicates your opinion on the teaching activities of academic staff of government-owned polytechnics, Lagos state, Nigeria.This section of the questionnaire will be answered by the students.

Strongly Agree = 4, Agree = 3, Disagree = 2, Strongly Disagree = 1.

S/N	Kindly rate the extent to which your school do the following.	SA 4	A 3	D 2	SD 1
	Effectiveness				
1.	My institution provides basic amenities for effective teaching				
2.	Knowledge is impacted through teaching by my lecturers.				
3.	Class discussion is organized by my lectuers for teaching				
4.	Students engage in assignments and classwork for lecturers to ascertain the level of understanding.				
	Efficiency				
5.	Our lecturers prepare course outline and follow them while teaching.				
6.	Our lecturers are time conscious while teaching.				
7.	Lecturers support students to sort out the difficult aspect of our course.				
	Quality of teaching				
9.	Lecturers demonstrate what is being taught during practical class.				

10.	Laboratories provided by my institution are well equipped for understandable learning.				
11.	Quality learning is taken into consideration by my lecturers while teaching.				

Biodata

Full Name: Chinyere Jennifer ODUMADE

Date and Place of Birth: 2nd october, 1968 at enugu, enugu state

Nationality/How Acquired: Nigerian and by birth

State of Origin/Local Govt.: Imo State and Isiala Mbano Local Government Area

Permanent Home Address:	6, Taiwo Junaid Close, Ayonnusi Estate, Off Sagamu Rd. Ikorodu Town, Lagos.
Current Postal Address:	Office Technology and Management Depart. Lagos State Polytechnic, Isolo Campus, Lagos.
E-Mail Address:	chiodumade@yahoo.com
Personal Mobile Phone nos:	08030494766 0r 08126811813
Marital Status:	Married
Number and Ages of Children:	Two, (2) 23 and 20

Educational Institution(s) with Dates:

1.	Lead City University, Ibadan, Oyo State	(in-view)
2	Olabisi Onabajo University, Ago Iwoye, Ogun State	2016
3.	Olabisi Onabajo University, Ago Iwoye, Ogun State	2013
4.	Lagos State Polytechnic, Ikorodu, Isolo	2004
5.	Yaba college of Technology, Lagos	1998
6.	Computerite Professional Institute, Gbagada, Lagos.	1993
7.	Grace Institute, Surulere.	1993

Work Experience with Dates:

June 2015 till date:

Office Technology & Management Department
Lagos State Polytechnic, Isolo campus
Position: Senior Instructor
Responsibility:
Lecturing of NDI, NDII, HNDI and HNDII students (both full time and part time) on the following courses;

- ✓ Keyboarding
- ✓ Shorthand
- ✓ Professional Career Development, Professional Ethic & Social Responsibilities, Office Applications I & II
- ✓ Coordinator OTM SPTSR as well as any other job as may be assigned by the HOD

2008 May 2015:

Lagos State Polytechnic, Ikorodu
Position: Principal Confidential Secretary I (Attached to the CIA)
Responsibility:
Taking notes and producing same in a readable form with less supervision and in good time.
Maintaining the Boss's diary
Producing of final calculation of the part time (Ventures) lecturing. claims
Maintaining of good filing cabinet as well as other office machines

Carrying out Personnel functions in a smaller scale for the Unit.

Educational and Professional Qualifications with Dates:

A.

1.	Msc in Office Information & Management	(In view)
2.	Msc in Industrial Relations & Human Resources Mgt.	2016
3.	Post Graduate Diploma in Public Administration	2013
4.	Higher National Diploma Secretarial Studies	2004
5.	National Diploma - Secretarial Studies	1998
6.	Certificate in Programming and Operations	1993
7.	Diploma in Secretarial Studies & GCE	1993

B.

1.	Institute of Public Management, Nigeria	2011
2.	Association of Business Educators of Nigeria	2015
3.	National Institute of Office Administrators & Information Managers.	2020

Publications:

1.	The Consequences of Leadership Style in Teamwork & Mgt.	2018
2.	Industrial Relations and Human Resources in the Effective Management of the Office	2018
3.	Comparative study on Male and Female's usage of E-Learning in curbing the spread of COVID-19 in Tertiary Institutions.	2021
4.	Economic impacts of COVID-19 on the Vulnerable Groups In Nigerian Society.	2021
5.	Records Management and Information Security as Essential Tools for Enhanced Corporate Performance.	2021
6.	Security Challenges and the Implications for Workplace Relationships.	2021

Next- of- Kin:

(i) Name:	Odumade Olaolu Emmanuel
(ii) Home Address:	6, Taiwo Junaid Close, Ayonnusi Estate, Off Sagamu Rd, Ikorodu Town, Lagos.
(iii) Telephone Number	08142679646

Salary Grade Level: CONTENDISS 8 STEP 11

Services to Humanity: INEC Member of Ayonnusi Eyiagba LCDA

Extra Curricular Activities: 1 Registration Officer - HNDI
2 Coordinator, OTM SPTSR

Names and Addresses of Three (3) Referees

(I) **Educational**
Dr. Tolulope Adenekan
Head of Department
Department of Office Information & Management
Lead City University
Ibadan Oyo State.
Phone: 08037278848

(ii) **Employer**
Mr. Yemi Adekanmbi
Head of Department
Office Technology & Management Dept.
Lagos State Polytechnic
Isolo Campus
Lagos.
Phone: 08027599644

(iii) **Personal**
Rev. (Mrs.) Esther Ugwu4
Independence Layout
Enugu - Enugu State.
Phone: 07066840172

_____ _____

Signature **Date**

University Compliance Certification

This is to certify that this Thesis written by **Chinyere Jennifer, ODUMADE** with Matriculation No. **LCU/PG/001270** in the department of Information Management of the Faculty of Communication and Information Sciences, Lead City University, Ibadan is in full compliance with the approved University format and style.

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Signature **Date**