PROFICIENT UTILIZATION OF PEDAGOGICAL INFORMATION AND COMMUNICATION TECHNOLOGY SKILLS AND PERCEIVED BUSINESS EDUCATORS' JOB PERFORMANCE IN COLLEGES OF EDUCATION IN NIGERIA

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A THESIS WRITTEN IN THE DEPARTMENT OF BUSINESS EDUCATION, FACULTY OF VOCATIONAL AND TECHNICAL EDUCATION IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE AWARD OF DEGREE OF DOCTOR OF PHILOSOPHY IN BUSINESS EDUCATION (ACCOUNTING) OPTION OF THE UNIVERSITY OF BENIN, BENIN- CITY, NIGERIA.

OCTOBER 2025.

CERTIFICATION

We, the undersigned, certify that this study was carried out by Peter Omoloju ONAIVI with matriculation number PG/EDU1818774 in the Department of Business Education, Faculty of Vocational and Technical Education, University of Benin, Benin City.

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DEDICATION

This research work is dedicated to the Almighty God.

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ABSTRACT

This study examined Proficient Utilization of Pedagogical Information and Communication Technology skills and perceived business educators' job performance in Colleges of Education in Edo and Delta States, Nigeria. To guide the study, ten (10) research questions were raised and three answered while eight hypotheses were formulated and tested at 0.05 level of significance.

The study adopted survey research of correlational design. The population of the study was 107 Business Educators in colleges of education in Edo and Delta States of Nigeria. The sample size was 107 business educators hence a census. The research instrument used was a structured questionnaire titled "Proficient utilization of pedagogical Information and Communication Technology skills and perceived business educators' job performance in Colleges of Education in Edo and Delta States (PUPBEJP)". The instrument was segmented into two parts: A and B. Part A dealt with the bio-data of the respondents such as location of institution and gender, while Part B was made up of 60 item statements sub-segmented into eight (8) clusters with Sections A and B. Section A had three clusters with 32 items measuring level of Proficiency on pedagogical ICT skills, level of utilization of pedagogical ICT skills and job performance of business educators while Section B measured 28 items on proficiency and utilization of CAL/CAI, CMI, CBI, CBT and CAD and they were rated on four point rating scale. The instrument was validated by five experts: the researcher's supervisors, two (2) other experts from the Faculty of Vocational and Technical Education and one psychometrician from the Department of Educational Evaluation and Counseling Psychology (EECP), University of Benin, Benin-City. The instrument was pilot tested once on twenty business educators' in Federal College of Education, Omoku, Rivers State who were not part of the population of the

study. Alpha value of 0.94 was obtained for proficiency and utilization of pedagogical ICT skills and 0.74 was obtained for business educators' job performance. Data collected from the respondents were analyzed using Mean, Standard Deviation, Pearson Product Moment Correlation Coefficient, Multiple regression analysis and Fisher z. The Mean and Standard Deviation were used to answer the research questions while Pearson Product Moment Correlation Coefficient, Multiple regression analysis and Fisher z were used to test the hypotheses at 0.05 level of significance.

The findings revealed that the level of proficiency of pedagogical ICT skills possessed by business educators was high. The findings equally revealed that proficient utilization of pedagogical ICT skills significantly predicted the job performance of business educators. It was concluded that there was a significant relationship between business educators' proficient utilization of pedagogical ICT skills and their job performance in colleges of education in Edo and Delta States. Based on the findings and conclusion, recommendations were proffered among others that management of colleges of education should sustain, maintain and promote the high levels of proficiency, utilization and job performance among business educators through continuous professional development.

CHAPTER ONE

INTRODUCTION

Background to the Study

The internet has substantially changed the way things are done in the world. Usually, every aspect of life is amenable to modern technology, especially information and communication technology of which the internet is a major player. All spheres of human endeavour have greatly been impacted by information and communication technology. The education industry to a very large extent influence or predict developments that occur in other sectors of the socio-political and economic space of any country. This is one of the reasons why the developed countries are advancing in several areas of life because their education systems respond to the needs of their environments through a sound education system of pedagogical innovativeness, creativity and scientific inventions. Education plays a dominant role in the socio-economic transformation of the human resources of a country with relevant skills, attitudes and aptitudes for the attainment of their creative potentials.

Nigeria has ICT policies that specifically address the education sector. The development of the National Policy on ICT in Education was informed by the need to have a standardized and coordinated deployment of ICT in Education (National Policy on ICT Education, 2019). However, the application of ICT for teaching and learning is relatively sluggish in the Nigerian education sector. at almost all levels of the education system – primary, secondary and tertiary especially in the area of pedagogy. Many teachers appear to still use the conventional /traditional teaching methods in the face of global shift in the methods of teaching. This has reduced the rate of understanding of the students they teach and to a large extent makes learning difficult and stifles students' initiatives for discovery. This development is almost all pervasive to all

educational programmes in the three levels of tertiary education system namely, universities, polytechnics and colleges of education. One of the programmes done at the three levels of education is Business Education.

Business Education is an aspect of vocational and technical education offered in tertiary institutions where knowledge, skills and competencies are acquired for paid jobs or self-employment. It is also seen as an aspect of vocational education that provides knowledge, skills and competencies for teaching, office occupation and for self-reliance (National Board for Technical Education (NBTE), 2016). Atakpa (2018) added that it is an aspect of total education programmes that provides knowledge, skills, understanding and attitude needed to perform in the business world as producers and consumers of goods and services that business offers. The programme provides recipients with knowledge, skills and competencies in accounting, marketing and office technology and management education. The areas business education covers have undergone tremendous transformation in practice globally. Whether the institutions and lecturers in the programme have responded appropriately remains to be seen. This is because many held the view that its recipients find it difficult to apply ICT in their jobs competently. This appears to be a deficiency in their job performance.

Job performance is a term used for work performance. Job performance relates to the act of doing a job. It is a means to reach a goal or set of goals within a job, role or organization. It is viewed as the work related activities expected of an employee and how well those activities are executed. Job performance has been defined as the overall expected value from employees' behaviours carried out over in the course of a set period of time. Job performance of employees' contributes either positively or negatively, to organizational goal accomplishment. It is the focal outcome in the workplace. Obilade (2019) observed that teachers' job performances are duties

performed by teachers at a particular period in a school system in achieving organizational goals. Performance is an important criterion for organizational outcomes and success. Lecturers engage in their various duties and responsibilities with regard to their jobs. Business educators' job performances connote the functions or tasks to be carried out by them in tertiary institutions where business education is offered as a course of study of which college of education is part of.

College of education is a tertiary institution or teacher training college principally engaged in teaching or research oriented towards the needs of pre-school, compulsory or post compulsory sectors of education. In colleges of education, students offer Business Education and they are trained to work in a firm or educational institution. College of Education is co-ordinated by the National Commission for Colleges of Education (NCCE) which regulates Nigerian colleges of education. It formulates National Policy framework for the full development of teacher education and training of teachers. NCCE defines the minimum standards for all programmes of teacher education and accredits their certificates and other academic awards. According to Nwalado and Ezoem (2019), college of education is one of the top level schools for advanced education following the completion of secondary education. It is an institution established by law to provide knowledge, skills and training to students for the production of teachers and skilled personnel who shall be enterprising and self -reliant. Colleges of education have been established in most parts of the country by both the state and federal governments. In colleges of education, human and instructional resources are needed for the accomplishment of goals through utilization.

Utilization is a systematic approach to the process and use of resources to aide in the learning process. According to Williams (2023), utilization refers to making practical and effective use of something in order to enjoy any benefit attached to it. Ezenwafor and

Nwachukwu (2020) affirmed that utilization refers to making use of something in a purposeful and effective way. Hassan and Mohamed (2023) asserted that utilization is the degree to which a given group uses a particular service in a specified period. Utilization of ICT resources for instructional delivery is becoming more popular because it helps students to learn better. Utilization of ICT tools for pedagogy enhances efficiency and successful performance. Utilization of ICT is needed by business educators' in their job performances.

The business educators' job performance include academic and administrative aspects: teaching, examination, administration and supervision, admission and counseling evaluation, compilation of results, teaching practice supervision, research and consultancy. Others are students' industrial work experience scheme (SIWES) supervision, acting as external examiners, project supervision, entrepreneurial facilitation and others. These duties are essentially the core mandate of academic staff. Of significance is the teaching, examination administration, and supervision, including the compilation of results, which have yielded to modern ICT practices. Some of the modern ICT pedagogical methods or practices that can be applied to teaching business education courses to bring about the desired behavioural changes in the students will be viewed starting with pedagogy.

According to the Global Academic Publisher (2021), pedagogy can be defined as the strategies, techniques and approaches that teachers can use to facilitate learning. The term pedagogy also refers to a systematic instructional method employed by an instructor to convey core subject matters to students**.** Pedagogy can be seen as the work of a teacher. It is the art and science of teaching and is referred to as instructional methods. Pedagogy can be described as the act of teaching. Pedagogy improves students' participation in the learning of business education; helps in the development of higher cognitive skills in carrying out business

education tasks; improves quality learning in instructional delivery by business educators; helps business education students to be more receptive in the pedagogical ICT skills training. It makes the relationship between business educators and learners much closer, as they work together to determine the best learning experience. The more business education students learn, the greater the enthusiasm of the processes, and the more open to self-learning they become in the future. When business education learners take in information that is applicable in real-world situations, they are more likely to see connections between the concept of learning and better results being obtained in work and school settings.

In addition, for pedagogy to be effective ICT must be incorporated into it and there is need for lecturers to be proficient in ICT skills. The term proficiency indicates competency. Proficiency is the competency needed to carry out tasks. Proficiency is also viewed as a high degree of skill, experience, ability, capability, mastery, prowess and professionalism. Therefore, proficiency in ICT refers to some basic keyboarding abilities as well as having the ability to identify numerous ICT technologies and their various procedures. The proficiency level of ICT skill indicates teachers' experience or strengths with a skill. There is low proficiency and high proficiency. For example, a keyboarding skill can have a rating of 1 to 100, where 25 could indicate novice or beginner level for a user and 95 indicate high proficiency and expert levels. Other proficiency of ICT skills includes internet and email, computers, word processing, graphics and multimedia, spreadsheets and databases, and programming and scripting.

Information and Communication Technology (ICT) is the use of digital technologies to acquire, process, store, and communicate information effectively. It involves the utilization of information through digital tools and systems to acquire information, process information, store information and communicate information (Omoigui-Okauru, 2016). Information and Communication Technology (ICT) in education is the mode of education that uses information

and communications technology to support, enhance and optimize the delivery of information. Worldwide research has shown that proficiency in ICT can lead to an improved students learning and better teaching methods. Through ICT, business education students can learn via E-learning, Blended learning, Open and Distance learning and so on.

This shows that ICT can improve the learning of business education students and better the pedagogical methods of business educators. ICT helps teachers to interact with students. It helps them in the preparation for their teaching and provides feedback. It also helps in effective use of ICT software and hardware for teaching – learning process. Furthermore, it helps to improve teaching skill and innovative teaching. There are ICT facilities which are general ICT tools for teaching and learning. These include: Desktops and laptops, PowerPoint Projectors, Interactive whiteboards (Smart boards), Digital cameras, Printers, Photocopiers, tablets, Popplets, Pen Drives, Ipods, I pads, Web boards, Scanner, Microphones, DVDs and CDs, Flash discs, video Games, Edmodo, Google Classroom and so on. Of special importance to pedagogical ICT skills, are the possession and utilization for innovative strategies such as Computer Aided Learning (CAL)/Computer Assisted Instruction (CAI), Computer Managed Instruction (CMI), Computer Based Instruction (CBI), Computer Based Training (CBT), Programme Learning, Computer Aided Design and so on.

Computer Aided Learning (CAL) is an approach to teaching and learning in which computer technology is used as an aid to the presentation, reinforcement and assessment of materials to be learned, usually including a substantial interactive element. The Computer Aided Learning is an interactive technology, which describes an educational environment where a computer programme is used to aid the user in learning a particular subject. It refers to an overall integrated approach of instructional methods. Computer aided learning is a device/ learning

strategy which makes teaching more interesting, joyful and sustainable. From here, the essence of the Computer to business education shifts the focus away from the teacher to the students themselves who learn through experimentation on the computer with the teacher acting as guide. The application of Computer Aided Learning to business education can be seen in the area of micro teaching. Here, the lecturer watches and serves as guide to the students while the students teach thereafter, the play back is watched by both. It allows the learners to proceed at their own pace. In addition to the CAL, the Computer Aided Instruction (CAI) is also known as Computer Assisted Instruction.

Computer Assisted Instruction (CAI) is an interactive instructional technique whereby a computer is used to present instructional materials and monitor the learning that takes place. CAI can also be seen as an instructional technique that uses technology to deliver instruction and feedback to students. CAI uses multimedia software, a combination of text, graphics, sound, video technology and internet technology in enhancing the learning process (Global Academic Publisher, 2021). Okoye and Ughamadu (2017) noted that Computer Assisted Instruction is an instructional design where computer systems deliver instructions directly to learners by allowing them to interact/relate with designed lessons that have been programmed into the system. The newness of working with the computers increases the learners' motivation to learn. It affords the learners the opportunity of interacting with experts that they would not normally have been opportuned to relate with face-to-face. A team of experts can produce programmes that can be used simultaneously by learners at different locations. The application of CAI to business education is heavily used in the growing field of distance education. In other words, business education learning is no longer limited to classroom settings. Apart from CAI, there is also Computer Managed Instruction (CMI).

Computer Managed Instruction (CMI) is the use of computer programmes for the online management of the instructional process. It is an instructional strategy where the computer is used to provide learning objectives, learning resources, record keeping, progress tracking and assessment of learner performance (Information Technology Law, 2021). CMI aids the instructor in instructional management without actually doing the teaching. Computer Managed Instruction manages and assesses the learning process of business education lectures. The business educators utilize the computer system to provide an administrative framework. It helps business educators to manage large classes, track students' performance and adjust instructional strategies. In addition to CMI, there is Computer Based Instruction (CBI).

Computer-based instruction is an instructional method, which uses computer technology to deliver training or educational materials to business education learners (Global Academic Publisher, 2021). Training video discs or CD-ROMs used in business training are some of the most common types of CBI. Computer-Based Instruction (CBI) also refers to any teaching methodology that uses computers as key elements of information transmission. Computers, for example, can be used to present content and lesson plans to business education students in more engaging multimedia formats or used in test-taking to simplify grading and evaluation. CBI can be used by business educators to train students on entrepreneurship such as electronic commerce (buying and selling online). Apart from the Computer Based Instruction used as an innovative strategy to deliver instruction, there is Computer Based Testing (CBT).

Computer-Based Testing (CBT) involves delivering assessment using computers online as replacement for traditional paper-based tests. CBT also involves administering tests and assessment via computer systems. This method of testing uses digital platforms to deliver questions, record responses and provide feedback. Since the introduction of Computer Based

Tests (CBT), the conduct of examinations in Nigeria is gradually getting a new look due to the introduction of Computer Based Test (CBT) system. CBT system is used in Nigerian institutions (colleges of education, polytechnic and universities) to conduct Post UTME (Unified Tertiary Matriculation Examination) for prospective students. Computer Based Tests (CBTs) have become increasingly popular in colleges of education as a means of assessing students learning outcomes. However, proficient utilization of CBTs requires business educators to possess skills such as technical skills-the ability to operate computer based testing software and hardware; instructional design skills-the ability to design CBTs that align with learning objectives and outcomes; assessment skills- the ability to evaluate student learning outcomes using CBTs; classroom management skills- the ability to manage the classroom environment during CBT administration. It should be noted that Computer Aided Design (CAD) method is also one of the innovative strategies of ICT to instructional delivery needed in business education.

Computer Aided Design (CAD) refers to the use of computer software that supports the design process. The software helps business education professionals create, modify, analyze, and enhance a design. In other words, CAD is a software that helps students design things. CAD software replaces drafting by hand with an automated process (Wesley, 2021). This enables businesses to visualize new designs in a variety of materials and send images around the world for collaboration and consultation. CAD software is used to increase the productivity of the designer, improve the quality of design, improve communications through documentation, and create a database for manufacturing. Designs made through CAD software are helpful in protecting products and inventions when used in business applications. The application and relevance of CAD to business education cannot be over-emphasized. Through CAD, business educators can design instructional materials for teaching and learning. Graduates from business

education use CAD to design students' identity cards, wedding cards, burial cards, calendars, jotters and other graphical works useful in power point presentation in research work. The above skills are expected to be possessed by business educators for their pedagogical ICT skills and enhance their job performance including male and female teachers.

Both male and female teachers apply ICT in pedagogical ICT assignments. Despite the widespread use of ICT by educational institutions, many studies have shown a gender imbalance in ICT usage and skill development (Atika et al., 2021). A research was conducted on gender differences in the use of pedagogical ICT skills (Adebowale et.al; 2021). This study found that male educators exhibited higher proficiency and more frequent use of pedagogical ICT skills compared to their female counterparts, attributing this difference to factors like access to training and socio-cultural influences. Also, Soydal et al. (2022) carried out a research regarding the application of ICT in pedagogy. It was discovered that males were confident in using computers than the females.

More also, Olatunji and Ojo (2021) conducted a research on "Gender Differences in Pedagogical ICT skills utilization". The study found that the females' educators' demonstrated higher proficiency and more effective utilization compared to their male counterparts, attributing this differences to factors like organizational support and motivational influences. Torukwein & Akameze (2022) revealed that females use ICT facilities for academic purposes more than their male counterparts. Female and male teachers in secondary schools do not appear to differ greatly on the extent of their pedagogical use of ICT (Teacher Gender and ICT, 2019). Many studies exist that contradict each other on the matter of gender differences in ICT use. There could be some differences in the use of pedagogical ICT innovative by male and female teachers but are inconclusive. The males and females business educators are in the location of institutions.

The location of an institution can be a crucial intervening variable, affecting the relationship between variables such as pedagogical approaches and student outcomes. For instance, institutions are situated in urban areas often have greater access to resources, cutting-edge technology, and a larger pool of qualified instructors, which can enhance the effectiveness of teaching methods and student performance. In contrast, institutions in rural or disadvantaged areas may face challenges such as limited resources, outdated infrastructure, and difficulty attracting and retaining qualified staff, which can hinder the implementation and outcomes of pedagogical approaches. The location of an institution can also influence the demographics and characteristics of its student population. Urban institutions may attract a more diverse student body, providing opportunities for cultural exchange and networking. Additionally, proximity to industries and businesses can offer students practical experiences, internships, job opportunities, potentially enhancing their employability and career prospects. By acknowledging the role of location as an intervening variable, educators and policymakers can develop targeted strategies to address the unique challenges and opportunities faced by institutions in different locations, ultimately improving student outcomes and institutional effectiveness.

Statement of the Problem

Business educators' in colleges of education are supposed to be proficient in pedagogical Information and Communication Technology (ICT) skills for instructional delivery to their recipients. The problem is that while proficient utilization of pedagogical ICT skills significantly predicts business educators' job performance, business education students exhibit low ICT proficiency and not competent in ICT tasks. Literature by Becta (2017) revealed that business education students often exhibit low ICT proficiency and lack competence in ICT tasks, which can negatively impact their academic performance and future career readiness. This dichotomy

raises concerns about the effectiveness of business education programmes in colleges of education in preparing students for the digital workforce (ICT tasks). Therefore, the study focused on "proficient utilization of pedagogical information and communication technology skills and perceived job performance of business educators' in colleges of education in Edo and Delta States of Nigeria".

Purpose of the Study

The main purpose of this study was to examine the proficient utilization of pedagogical ICT skills and perceived business educators' job performance in colleges of education in Edo and Delta States. Specifically, the study determined:

1. The level of proficiency of pedagogical ICT skills possessed by business educators' in colleges of education in Edo and Delta States.
2. The level of utilization of pedagogical ICT skills possessed by business educators' in colleges of education in Edo and Delta States.
3. The level of job performance of business educators' in colleges of education in Edo and Delta States.
4. The relationship between proficient utilization of CAL/CAI pedagogical skills and the job performance of business educators' in colleges of education in Edo and Delta States.
5. The relationship between proficient utilization of CMI pedagogical skills and the job performance of business educators' in colleges of education in Edo and Delta States.
6. The relationship between proficient utilization of CBI pedagogical skills and the job performance of business educators' in colleges of education in Edo and Delta States.
7. The relationship between proficient utilization of CBT pedagogical skills and the job performance of business educators in colleges of education in Edo and Delta States.

8. The relationship between proficient utilization of CAD pedagogical ICT skills and the job performance in colleges of education in Edo and Delta States.
9. The relationship between proficient utilization of pedagogical ICT skills of male and female business educators' and their job performance in colleges of education in Edo and Delta States.
10. Business educators' proficiency in utilizing pedagogical ICT skills on their job performance in colleges of education in Edo and Delta States.

Research Questions

The following research questions guided the study.

1. What is the level of proficiency of pedagogical ICT skills possessed by business educators' in colleges of education in Edo and Delta States?
2. What is the level of utilization of pedagogical ICT skills possessed by business educators' in colleges of education in Edo and Delta States?
3. What is the level of job performance of business educators in colleges of education in Edo and Delta States?
4. What is the relationship between business educators' proficient utilization of CAL/CAI pedagogical skills and their job performance in colleges of education in Edo and Delta States?
5. What is the relationship between business educators' proficient utilization of CMI pedagogical skills and their job performance in colleges of education in Edo and Delta States?

6. What is the relationship between business educators' proficient utilization of CBI pedagogical skills and their job performance in colleges of education in Edo and Delta States?
7. What is the relationship between business educators' proficient utilization of CBT pedagogical skills and their job performance in colleges of education in Edo and Delta States?
8. What is the relationship between business educators' proficient utilization of CAD pedagogical skills and their job performance in colleges of education in Edo and Delta States?
9. What is the difference between male and female business educators' proficiency in the utilization of pedagogical ICT skills and their job performance in colleges of education in Edo and Delta States?
10. To what extent do business educators in colleges of education in Edo and Delta States differ in the proficient utilization of pedagogical ICT skills for their job performance?

Hypotheses

The following hypotheses were formulated and tested at 0.05 level of significance :

1. There is no significant relationship between business educators' proficient utilization of CAL/CAI pedagogical skills and their job performance in colleges of education in Edo and Delta States.
2. There is no significant relationship between business educators' proficient utilization of CMI pedagogical skills and their job performance in colleges of education in Edo and Delta States.

3. There is no significant relationship between business educators' proficient utilization of CBI pedagogical skills and their job performance in colleges of education in Edo and Delta States.
4. There is no significant relationship between business educators' proficient utilization of CBT pedagogical skills and their job performance in colleges of education in Edo and Delta States.
5. There is no significant relationship between business educators' proficient utilization of CAD pedagogical skills and their job performance in colleges of education in Edo and Delta States.
6. There is no significant relationship between Edo and Delta States business educators' in proficient utilization of pedagogical ICT skills and their job performance in colleges of education.
7. Male and female business educators' do not differ significantly in the proficient utilization of pedagogical ICT skills and their job performance in colleges of education in Edo and Delta States.
8. There is no significant difference in the relationship between business educators' proficient utilization of pedagogical ICT skills and their job performance in colleges of education in Edo and Delta States.

Significance of the Study

The findings of this study when published in reputable journals, seminar, conferences and workshops would be of immense benefit to the administrators of colleges of education, business education lecturers and business education students. To administrators of colleges of education, the study's findings can inform evidence-based decisions on ICT infrastructure development, staff training, and resources allocation, ultimately enhancing teaching quality and

student learning outcomes. By understanding the relationship between ICT skills and job performance, administrators can design targeted professional development program to improve educators' proficiency, leading to better job performance and institutional effectiveness. The publication of this research in reputable journals, conferences, seminars and workshops can also enhance the institution's reputation and visibility, demonstrating its commitment to innovative teaching and learning. The study's findings can inform policy decisions, curriculum design, and staff development initiatives, contributing to overall improvement of education quality. The findings will also help administrators of colleges of education in coordinating the activities of admission processes. The administrators will achieve this by utilizing modern ICT gadgets with good network system.

The findings of this study would be of immense benefit to business educators (lecturers) in several ways. The knowledge of ICT acquired from ICT through workshops will assist business educators to refine their instructional delivery from traditional teaching to ICT knowledge based. It will also help business educators to learn the various functions of ICT tools to deliver quality lessons. With the help of ICT, business educators will derive job satisfaction.

The findings of this study will be of benefit to students in diverse ways. It will help students to understand the significance of ICT proficiency, develop relevant skills, enhancing their employability and effectiveness as future business educators. The study's findings can also enlighten students' learning experiences, emphasizing the significance of integrating ICT into business education to enhance their skills and adaptability in a rapidly changing digital environment. The study can empower business education students to become competent, technology-savvy educators, equipped to prepare the next generation of entrepreneurs, business leaders and professional. Students will achieve this by utilizing ICT with stable network.

Scope and Delimitation of the Study

The purpose of this study was to examine proficient utilization of pedagogical Information and Communication Technology skills and perceived business educators' job performance in colleges of education in Edo and Delta States. The content variables included proficient utilization of pedagogical ICT skills including CAL/CAI, CMI, CBI, CBT and CAD. This study was delimited to colleges of education in Edo and Delta States namely Federal College of Education (Technical), Ekiadolor; College of Education, Igueben; Federal College of Education(Technical) Asaba, College of Education, Warri and College of Physical Education, Mosogar respectively.

CHAPTER TWO

REVIEW OF RELATED LITERATURE

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

- Theoretical Framework
- Concept of Business Education
- Concept of Job Performance
- Concept of ICT
- Concept of Pedagogy
- Application of ICT in Pedagogy/Teaching
- Proficient Utilization of Pedagogical ICT skills of (CAL ,CMI, CBI, CBT, CAD) and Job Performance of Business Educators
- Review of Related Empirical Studies
- Summary of Reviewed Literature

Theoretical Framework

The theoretical framework for this study is Technology Acceptance Model. The Technology Acceptance Model (TAM) was propounded by Fred Davis in 1986. This model was developed in his dissertation which was published in 1989. The Technology Acceptance Model (TAM) is an information system that models how users come to accept and use a technology. TAM is one of the theories that discussed the acceptance of technology in the perspective of human as the user. TAM goal is to explain and predict the users' acceptance of a system of information. TAM provides a theoretical basis to organizational acceptance of technology. TAM is visualized as a model.

TAM model was developed from the theory of psychology, which explained the attitude of the computer user based on belief, attitude, intention and user behaviour relationship. TAM puts two beliefs, which are the perception of usability and the perception of ease of use as the main factor of computer acceptance attitude. Both of those factors show that the perception of technology users determines the attitude in using the technology.

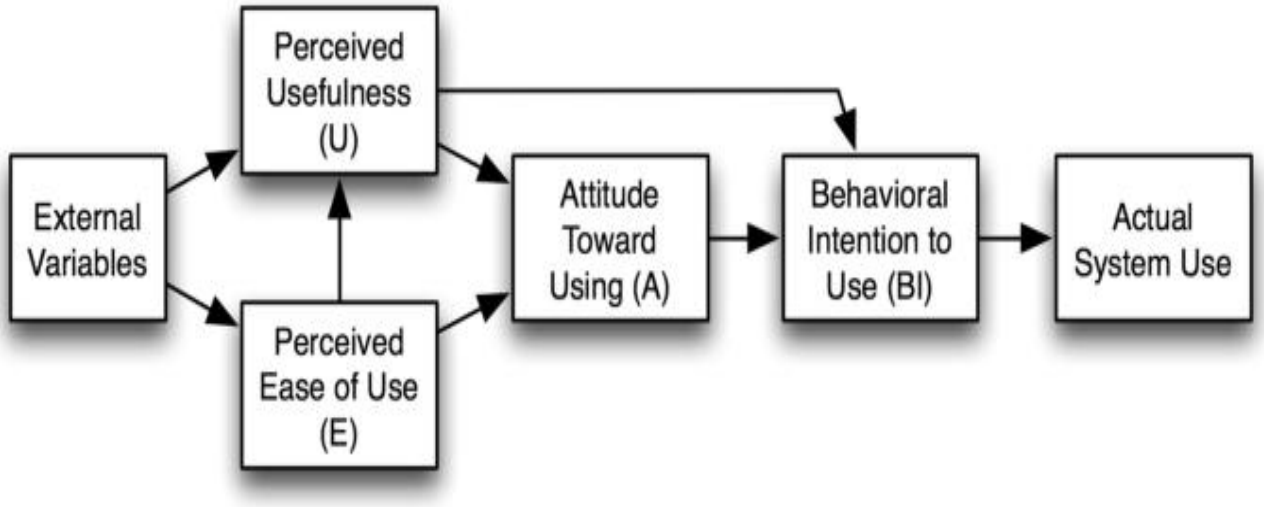
Furthermore, the two components are perceived usefulness and perceived ease of use of the system were explained. The theorist defined perceived usefulness (PU) as the degree to which the person believes that using the particular system would enhance job performance. It means whether or not someone perceives technology to be useful for what they want to do whereas the perceived ease of use (PEOU) was defined as the degree to which the person believes that using the particular system would be free of effort (Davis, 1986). David (1989) states that the definition of usability perception comes from the word "useful" which means can be used and benefitting .The perception of usability focus on how far someone believes that by using a certain system will improve their productivity in working. If the technology is applied by business educators in their job performance, so this usability perception believes that ICT skills can improve business educators' skills and results to employability skills of recipients (business education students).

Perception of users toward the benefit of technology can be measured by some factors such as improving users' productivity and efficiency (Tarigan, 2010). Davis (1989) states that the perception of easiness in using the technology focus on how far someone believes that using a system does not need too much effort. The definition of this perception follows the definition of the word "ease" that means free from difficulties. In the application of the ICT to job performance, it will ease the difficulty in the job and this will influence proficiency and

utilization of ICT in the teaching and learning of business education. TAM believes that the perception of usability and easiness of using technology felt by users can predict their attitude toward the technology that can predict the users' acceptance of the technology. That is why those perceptions are used in this research as the basis to business educators' job performance and ICT skill influence on students' employability job performance.

Also, their perception can give information about the acceptance of computer users as a media in employment test and proficiency and utilization of ICT in skills evaluation. If the technology is easy to use, then the barriers conquered. If it's not easy to use and the interface is complicated, no one has a positive attitude towards it. *External variables* such as social influence is an important factor to determine the attitude. When these things are in place, people will have the attitude and intention to use the technology.

Besides, Davis suggests that the *attitude* of a user towards the system was a major determinant of whether the user will actually use or reject the system. The main aim of this model is that it emphasizes the potential of the users. In other words, when a developer of a given technology believes that his or her system is friendly to the users. Invariably, the system is not accepted by the users unless the developers share the benefits and advantages of the technology system. Below is TAM's model.



Technology Acceptance Model (Davis, 1986)

TAM model explains the attitude of the computer user based on belief, attitude, intention and user behaviour relationship. TAM puts two beliefs, which are the perception of usability and the perception of easiness to the use as the main factor of computer acceptance attitude. Both of those factors show that the perception of Technology users determines the attitude in using the technology. The *actual system use* is the end-point where people use the technology. *Behavioural intention* is a factor that leads people to use of the technology (Johannes, 2014). The behavioural intention (BI) is influenced by the *attitude* (A) which is the general impression of the technology. The model suggests that when users are presented with a new technology, a number of factors influence their decision about how and when they will use it. Davis posited, that Attitude toward using (A) and perceived usefulness (U) are the major determinants of whether a system will be used or not. The U-BI relationship in TAM represents the "direct effect" that people have intentions with regard to using a system largely based on their beliefs of how a system will increase their performance (usefulness) (Davis, 1989). Hence, U has a direct effect on BI over and above A. However, the attitude toward using (A) is determined by perceived usefulness (U) and perceived ease of use (E).

Relevance of Technology Acceptance Model (TAM) Theory to the study.

This theory, Technology Acceptance Model is relevant to the independent and the dependent variables of this study. It is believed that the independent variable, proficient utilization of pedagogical ICT skills is expected to bring effective or quality changes in the dependent variable, job performance of business educators. Business educators are convinced that utilizing pedagogical ICT skills in their pedagogy (teaching and learning) of Business Education will bring innovation therefore ICT is useful. Therefore, adaptation of ICT skills into business educators' job performance is perceived to be useful to the job performances of business educators. On Perceived usefulness, Tam posits that the perceived usefulness of a technology influences its adoption. In this context, if pedagogical ICT skills are perceived to be useful to business educators for enhancing their job performance, they are more likely to utilize them and they will adopt it.

On the other hand, Technology Acceptance Model's perceive ease of use of the system suggests that the perceived ease of use of a technology affects its adoption. Technology is supposed to be free of effort. If business educators for one reason or the other finds it difficult to use the pedagogical ICT skills in their job performances, the adoption will be neglected by them. Furthermore, the perceived use of ICT skills on Business Educators' job performance gives rise to a new attitude of ICT skills based business educators. Therefore, proficient utilization of pedagogical ICT skills influences business educators' job performances and this makes business educators to cultivate the positive attitude of changing their traditional way of pedagogical which involves stress hence they adopt and accept the modern Technology of ICT skills.

Lastly, Tam' view on attitude towards using technology. Tam proposes that an individual's attitude towards using technology influences their intention to use it. Business educators with a positive attitude towards using ICT skills in their job performance are more likely to develop proficient utilization pedagogical ICT skills.

Concept of Business Education

Business Education is a type of education that gives individuals the needed skills and knowledge to succeed in small, medium or large scale businesses (Ojianyaegbu, 2021). In another perspective, Egbiri and Emefiele (2021) opined that Business Education is an aspect of educational programme offered in higher institutions of learning which prepares students for careers in business. This means that business education is not static but dynamic. Changes in Business education must be acquainted by business educators.

Business educators are custodians in business education programme who are proficient in skill acquisition needed by recipients (Ezeani, 2012). Ezenwafor and Hafsat (2017) emphasized that business educators are professionally trained teachers of business courses who are competent and engaged to all business related subjects in universities and colleges of education. Ile and Edokpolor (2021) asserted that business educators are business education graduates that are trained to perform the task of equipping recipients at the secondary and post-secondary school levels with skills and knowledge to confidently pursue entrepreneurial career and lifelong learning tasks. Business education is saddled with lofty objectives. However, according to Aliyu (2016), the following are the objectives of business education at the tertiary institutions;

1. To develop a matured understanding of the general nature of business.

2. To provide the needed background of the general nature of business.
3. To provide training for leadership in business.
4. To provide training in specialized phases of business activity.
5. To lay a cultural and ethical foundation for the development of the fore-going objectives.

The objectives of Business Education at the degree level are similar to that of NCE. The objectives of Business Education as contained in the NCCE minimum standards for Nigeria Certificate in Education(2018) are as follow:

1. To produce well qualified and competent NCE graduates in business subjects who will be able to teach business subjects in our secondary schools and other related educational institutions.
2. To produce NCE business teachers who will be able to inculcate the vocational aspects of Business Education into the society.
3. To produce NCE Business teachers who will be involved in the much desired revolution of vocational development right from the primary and secondary schools.
4. To equip students with necessary competences so as to qualify them for a post-NCE degree programme in Business Education.
5. To equip graduates with the right skills that will enable them to engage in a life of work in the office as well as for self-employment. Akeke and Kolo (2019) affirmed that Business education is aimed at preparing its students to acquire skills necessary for paid employment or be self-dependent as an entrepreneur and as well as be intelligent consumers of goods and services. Similarly, Igoke (2015) noted that business education at all levels of education enables the recipients to;

1. Acquire skills and knowledge of business.
2. Develop basic skills for personal use in the future.

3. Relate the knowledge and skills acquired to national development.
4. Develop skills for office occupation.
5. Prepare students for further training in business studies.
6. Provide orientation and basic skills with which to start a life of work for those who may not undergo further training.

Business Education provides employment for graduates. In Business Education programme, courses in Marketing, Management, Accounting and Office Technology and Management (OTM) are offered by the students. Business Education students are expected to possess the relevant skills, competencies and knowledge in these major aspects of Business Education programme. The objectives of introducing Business Education at university level are:

1. To produce competent degree graduates who can be self-employed.
2. To produce competent degree graduates who can teach Business Education courses in secondary school and higher institutions.
3. To produce competent degree graduates who can inculcate business ideas into the economy.
4. To produce competent degree graduates who can help in formulating economic policies.
5. To produce competent degree graduates who can employ other persons to reduce unemployment.

Further, apart from the aims and objectives of business education, it has components at various levels. We have it in Junior Secondary School (JSS) as business studies. According to Okoye (2018), Business studies are prevocational subjects which are expected to expose students to general business knowledge. In view of Okoro (2018), Business studies are integrated in nature. This means that although it is taught as a single subject, but it has five major components

of Commerce, Book-keeping, Office Practice, Shorthand and Typewriting. At Senior Secondary School, its components are Accounting, Economics, Commerce, Typewriting and Office Practice. Okoye (2018) noted that Business studies are dynamic courses which prepare students for challenges of 21st century by introducing them to the world. Business education is also taught in Colleges of Education, Universities and Polytechnics. Business Education is one of the Faculty based education programmes in Nigerian Tertiary institutions. Onokpaunu and Azu (2019) emphasized that business education is a course of study in Nigeria built to make its recipients become job creators, wealth providers, workplace ICT consultants, entrepreneurs of small and medium enterprises and executive managers of business entities.

More also, Business Education has these components in Tertiary institutions: Entrepreneurship, Accounting, Office Technology and Management, Marketing, Shorthand, Typewriting and Information and Communication Technology. Etonyeaku (2019) noted that business education is a formidable force and it is an education aimed at the acquisition and equipping individuals with appropriate skills , knowledge, abilities, attitudes, values and competencies that will enable them to be self-employed and self-reliant (entrepreneurship) with emphasis on ICT skills.

Business education refers to vocational education as aspect of educational process involving the study of technologies and related sciences and the acquisition of practical skills ,attitudes, understanding and knowledge relating to occupations in various sectors of the economic and social life which business education a part (National Policy on Education, FRN 2020). It is an integral part of general education; a means of preparing for occupational fields and for effective participation in the world of work; an aspect of life-long learning and

preparation for responsible citizenship. It is also an instrument for promoting environmentally sound sustainable development and a method of alleviating poverty.

Presently, business education is run in most communities as skill acquisition programme. The aim is to make sure youths (learners) acquire skills that will sustain them in a paid employment or be self-dependent and even contribute to Nigerian economy. For recipients to acquire the professional skills, job performance of business educators must reflect the modern skills.

Concept of Job Performance

According to Janalta (2021), job performance relates to how individuals perform in their job duties in addition to training and natural ability. He added that Job performance is impacted by workplace environment factors including physically demanding tasks, employee morale, stress levels, and working extended hours. In view of Kehinde (2021), job performance is the level of competence displayed by an employee on a job over a period of time. He added that job performance relates to how individuals perform in their job duties. Stannack (2016), Job performance is defined as behaviours and activities that are performed towards achieving the organization's goals and objectives. Performance is important for organizations as employee performance leads to business success and performance is important to an individual as accomplishing tasks can be a source of satisfaction. working on their job using the computers that are connected to the intranet, users can concurrently interact via e-mails, transact with certain information systems, search specific information or publish certain information over the intranet will enhance business educator's job performance in work place.

In addition, Workplace Testing (2020) observed that job performance reflects many important aspects that depend on the organization growth, expansion and production. They

affirmed that every individual worker's performance has effects on organizational effectiveness: some may be positive and others negative. In view of Campbell (2019), job performance is the overall expected value from employees' behaviours carried out over the course of a set period of time. He affirmed that job performance is not a single action but rather a "complex activity". Job performance assesses whether a person performs a job well. Ezenwafor and Hafsat (2017) commented that job performance of business educators refers to the quality of their contributions towards achieving the objectives of the programme and the goals of education generally in their institutions.

Furthermore, in the Universities, there are parameters for measuring workers job performance such as foresight, sense of judgment, command of language, human relations, sense of responsibility, reliability under pressure, drive and determination, leadership quality, effectiveness and efficiency, regularity and punctuality, and professional technical knowledge. Out of the competing variables, one would want to empirically test and know which of the variables of job performance will best predict job performance of the administrative staff (Olorunsola 2013).

Here are some parameters that can be used to measure job performance in Colleges of Education: (1) Citizenship performance: This refers to activities that support the broader work environment, in addition to task performance. (2) Job satisfaction: Research suggests that job satisfaction is positively correlated with all variables of organization culture. (3) Quality of work: This includes accuracy, thoroughness, and competence. (4) Quantity of work: This includes productivity level, time management, and the ability to meet deadlines. (5) Job knowledge: This includes skills and understanding of the work. (6) Working relationships: This includes the ability to work with others and communication skills. Business educators job performance

include preparing and delivering of lectures, supervision of students in industrial training, final year project, post graduate students, marking assessments and grading of scripts. Other functions include development and promotion of innovative teaching methods, consultation with students and production of teaching materials for students (Victor and Mekuri-Ndimele, 2021). Many factors could influence the employee's job performance including equipment, physical work environment, meaningful work, standard operating procedures, reward for good or bad systems, performance expectancy, feedback on performance, in addition to knowledge, skills and attitudes (Khaled and Haneen, 2017).

In addition, Peretomode (2016) believed that Job performance is the quality of the output of workers in organizations. Job performance of business educators refers to the quality of their contributions towards achieving the objectives of the programme and the goals of education generally in their institutions. It is also their ability to combine relevant inputs for the enhancement of teaching and learning processes. Ezenwafor and Hafsat (2017) affirmed that Business educators' job performance could be measured through annual report of their teaching activities such as lesson preparation, mastery of subject matter, commitment, effective supervision and monitoring of students' work, motivation and class management among others. For business educator's to be effective in their job performance there must be a relationship among the management and business education teacher in work place. More so, one key of work place variable required by business educators for job performance is student – teacher relationship, which is the academic relationship between business education teachers and their students. Teachers who support students in the learning environment can positively impact their social and academic outcome which is important for the long-term trajectory of school (Chukwurah and Atah, 2018).

Furthermore, Business educators' job performance is the extent to which the business educators carry out their functions as educators, researchers and community developers to meet the goals of programme. It also refers to how the business educator responds to duty in terms of punctuality in attending lectures, giving and marking assignments, syllabus coverage, preparation of professional documents, supervising the programmes activities and being regular in classes among others. However, it has been observed that some business educators do not teach as they ought to because most hours allotted for teaching are used for discussing trivial issues, and sometimes they do not utilize instructional materials during lecture periods. In addition, some business educators have not been able to disseminate research findings through publications. They rarely provide mentorship for both staff and students, and they hardly contribute to issues relevant to the development of their discipline (Bessong, Atah and Ititim 2019). For recipients of business education to be proficient in modern employability skills, the Job performance of business educators must reflect the modern ICT skills.

Concept of Information and Communication Technology

Information Communication Technology (ICT) as a diverse set of technological tools and resources used to communicate, and to create, disseminate, store, and manage information (Wilson and Christopher, 2020). According to Pratt (2019) ICT is the term that is generally accepted to mean all devices, networking components, applications and systems that combined allow people and organizations (i.e., businesses, nonprofit agencies, governments and criminal enterprises) to interact in the digital world. He added that ICT is sometimes used synonymously with IT (for information technology); however, ICT is generally used to represent a broader, more comprehensive list of all components related to computer and digital technologies than IT. Nwankwo (2017) believed that it is an extension term for Information Technology (IT) which

emphasizes the role of unified communications and the integration of telecommunications (telephone lines and wireless signals), computers as well as necessary enterprise software, middleware, storage and audio.

LisbdNetwork (2016) observed Information Communication Technology as a common term referring to the technologies used for collecting, storing, editing and communicating information in various formats. They added that ICT means the use of computer-based technology and the Internet to make information and communication services available in a wide range of users. They went further to state that ICT is combination of Information Technology and Communication Technology. Information Technology is "the study use of electronic equipment, especially computers for storing out information" while **"**Communication Technology is the process of sending, receiving and exchanging information through network systems with the help of ICT". Ogiagah and Ofule (2014) commented that ICT is the digital technology used for the gathering, production, storage, processing, manipulation, management, and transmission or reception of information. They added that ICT is an umbrella term for any communication device or application such as; radio, television, cellular phones, computers and networks, hardware and software, satellite systems as well as various other services.

In view of Okauru (2011), ICT is the digital processing and utilization of information by the use of electronic computers .He further said it comprises of storage, retrieval, conversion and transmission of information. He noted that it is an umbrella term that includes any communication device or application, encompassing: radio, television, cellular phones, computer and network hardware and software, satellite systems and so on, as well as the various services and applications associated with them, such as videoconferencing and distance learning. Technopedia (2018) noted carefully that ICT is technology that is used to handle communications processes such as telecommunications, broadcast media, intelligent building

management systems, audiovisual processing and transmission systems, and network-based control and monitoring functions. They observed that ICT is an extended synonym for Information and Technology (IT), its scope is broader and ICT is often used to describe the convergence of several technologies, and the use of common transmissions lines carrying very diverse data and communication types and formats.

In addition, Nwachukwu (2014) asserted that Information and communication technologies (ICTs) is the application of computers and other technologies to the acquisition, organization, storage, retrieval, and dissemination of information. He added that information and communication technology is the use of electronic devices such as computers, telephones, internet, and satellite system, to store, retrieve and disseminate information in the form of data, text image and others. Onasoga (2015) opined that ICT refers to all the means, methods and machine that human beings use to collect, store process and transmit data in different forms (texts, sound and picture) from sources or encoder to the receiver or decoder with the effect .He added that it is a computer based tools used by people/lecturer to work the information and communication processing needs of an organization. It encompasses the computer, computer hardware and software, the networks and several other devices (video, audio, macro-electro devices, satellite, etc.) that convert information texts, images, sounds and motion, and so on into common forms. UNESCO (2021) affirmed that ICT refers to as diverse set of technological tools and resources used to transmit, store, create, share or exchange information. These technological tools and resources include computers, the Internet (websites, blogs and emails), live broadcasting technologies (radio, television and webcasting), recorded broadcasting technologies (podcasting, audio and video players and storage devices) and telephony (fixed or mobile, satellite, vision/video-conferencing, etc.)

In addition to above, Information and communication technology (ICT) has a global impact on almost all aspects of human endeavours of which education is not an exception. Olusesan and Emmanuel (2016) affirmed that information and communication technology dramatically plays a major role in the education sector by improving the quality, effectiveness and efficiency of learning, research and educational management around the world. According to Balaraba (2018), Information and Communications Technology (ICT) can impact student learning when teachers are digitally literate and understand how to integrate it into curriculum. He stated that schools use a diverse set of ICT tools to communicate, create, disseminate, store, and manage information. He noted that there are ICT facilities which are general ICT tools for teaching and learning. These include: Desktop and laptops, PowerPoint Projector, Interactive whiteboards (Smart boards), Digital cameras, Printer, Photocopier, tablets, Popplet, Pen Drive, Ipods, Ipads, Web boards, Scanner, Microphones, DVDs and CDs, Flash discs, multi-link headphones, webcams, audio recording software, walkie-talkies, telephones video Games, Edmodo, Google Classroom and so on. IGI Global (2021) noted that ICT devices are the latest tools, concepts and techniques used in student-to-teacher, student-to-student. ICT tools are internet-based programs and resources that can be used to support, enhance, and facilitate instruction that is online and technology driven ICT devices that are used in teaching and learning are divided into hardware, software, and network communication. The tech tools are suitable for students and teachers. Oviawe and Ojo (2010) argued that ICT encompasses the hardware and software, the network and several other devices (video, audio, photographic camera, etc) that can convert information, images, and sound into common digital form. It includes electronic information in processing technologies such as computer and internet, as well as fixed-line telecommunication networks. He added that the information accessed through

digital technologies can promote innovation, increase productivity and enrich the quality of lives. ICT in education is broad, deep and rapidly growing field of study.

Concept of Pedagogy

Pedagogy is concerned with what the instructors do to influence the learning of others (Kupur, 2020). He added that the concept of pedagogy is a complicated phenomenon comprising variety of practices supported by principles that are acquired through training and as a result of professional experience and personal understanding. The instructors regard pedagogy as an essential part of the teaching-learning methods and instructional strategies. Department of Education, Employment and Workplace Relations DEEWR (2009) sees pedagogy as instructional techniques and strategies that allow learning to take place. They added that it refers to the interactive process between teacher/practitioner and learner and it is also applied to include the provision of some aspects of the learning environment (including the concrete learning environment, and the actions of the family and community). Shah (2021) defined pedagogy as the heart of teaching. It is about rules and principles that guide effective and efficient activities which lead to learning. Pedagogy is about teaching methods and principles of instruction. It is assisting students through interaction and activity in the ongoing academic and social events of the classroom.

Further, Tophat (2020) maintained that pedagogy is a term that refers to the method of how teachers teach, in theory and in practice. Pedagogy is formed by an educator's teaching beliefs and concerns the interplay between culture and different ways to learn. In order to help students to build on prior learning, meaningful classroom relationships must exist. In another perspective, Tophat.com (2021) ascertained pedagogy refers to the study of teaching approaches and how they affect learners. A carefully considered pedagogy is essential in enabling students to

learn more effectively and can help them develop high-order thinking skills. There are four common forms of pedagogy: social (education as supporting social development), critical (deconstructing normative perspectives), culturally responsive (encouraging the sharing of diverse backgrounds and experiences) and Socratic (developing intellectual and social skills to live in a democratic society). Edwin (2021) viewed Pedagogy as the study of teaching methods, including the aims of education and the ways in which such goals may be achieved. The field relies heavily on educational psychology, which encompasses scientific theories of learning, and to some extent on the philosophy of education, which considers the aims and value of education from a philosophical perspective. Orana (2020) sees Pedagogy as a term used broadly to refer to both how and why an educator influences learning .He argued that Pedagogy is the relationship between learning techniques and culture. It is determined based on an educator's beliefs about how learning takes place. Pedagogy requires meaningful classroom interactions between educators and learners. He emphasized that the goal is to help students build on prior learning and develop skills and attitudes. The importance of pedagogy in the teaching and learning of business education cannot be over-emphasized. Pedagogy improves students' participation in the learning of business education, it helps in the development of higher cognitive skills in carrying out business education tasks, it improves quality learning in the instructional delivery by business educators, it helps business education students to be more receptive in the pedagogical ICT skills training and so on.

In addition to above, Anderson (2019) noted that pedagogy is often confused with curriculum. He stated that pedagogy refers to how we teach the theory and practice of educating**.** He added that pedagogy involves all the strategies while curriculum is what we teach**.** It is all the subjects we teach, like Business Studies, Mathematics, Science, English, History, Geography and

so on. Curriculum refers to the material being taught. Pedagogy is the relationship between learning techniques and culture. From this point of view, pedagogy has three basic components: (1) curriculum, or the content of what is being taught; (2) methodology, or the way in which teaching is done; and (3) techniques for socializing children in the repertoire of cognitive and affective skills required for successful functioning in the society. Pedagogy has relevance to teaching and learning.

Relevance of Pedagogy to Teaching and Learning

Mastersoft (2021) observed that the relevance of pedagogy to teaching and learning cannot be over-emphasized. He itemized the following as relevance of pedagogy to teaching and learning.

- *Improves quality of teaching:* If a well-thought pedagogy is implemented in the classrooms, the quality of education can show a drastic improvement. This will benefit the students by helping them thoroughly understand the education material, thereby improving the learning outcomes.
- *Encourages cooperative learning environment:* The implementation of pedagogy in education encourages the students to work together towards completing a task and learn together. This increases their perceptions by understanding and taking views from the other students, thereby adapting the cooperative learning environments making them better leaders in the future.
- *Eliminates monotonous learning:* Pedagogy and child development work hand in hand. It helps the student to think in different ways and move beyond the traditional methods of memorization and comprehension for learning. It invokes complex processes of learning

among the students such as analyzing, creative thinking, and evaluation. Further, it makes students more receptive to what the teacher is teaching.

- *Student can follow their ways of learning:* A well thought pedagogy can help the students to grasp education in various ways. It caters to the learning abilities of different students. Students can follow their preferred ways of learning and stick to them. In this way, the students develop a better understanding of the subject, which eventually improves their skills and learning outcomes.
- *Convenient learning approach for all:* Students with special needs require different ways of learning and teaching in the institutes. Implementation of a suitable pedagogical approach will help them learn better and encourage them to be a part of the mainstream learning community.
- *Improves teacher-student communication:* The teacher understands the student in a better way which helps them to focus on the student's weaknesses and guide them. In view of Shirke (2021), the roles of pedagogy to effective learning are as follow:

- *Improves Teaching Quality* **:** It enhances student participation in learning and makes them more receptive to what is being taught.
- *Encourages different learning styles :* The main focus is given on the outcomes of courses and the students are free to learn in their styles.
- *Enables learning for students with special needs:* It encourages the students with special needs to be a part of the mainstream teaching ways and engage with other students.
- *Clarifies learning objectives*: The student studies a particular subject with a clear objective of outcomes such as gaining skills and knowledge of the subject.

In addition, they noted that there are types of pedagogy which include the following

- *Social pedagogy:* It is aimed towards the social development, awareness, and well-being of the students. The teaching must consist of values and moral education.
- *Critical pedagogy:* It aims towards comprehending and deconstructing several daily life problems and issues. It encourages the student to dig deeper into things and try to understand their thoughts and beliefs on a certain topic.
- *Culturally responsive pedagogy:* It aims to address the cultural diversity among students. It helps to comprehend cultural differences among the students and increases awareness about cultural differences in school.
- *Socratic pedagogy:* It aims to encourage the students to gain more knowledge from other sources along with what is provided to them. This helps the students to find alternative solutions to the problems.

They further said there are five approaches to pedagogy

- *Constructivist*: In this approach, the students are allowed to be present in the process of understanding and gaining knowledge rather than just passively receiving information. This encourages critical thinking among the students and gives a learning environment in which they can connect with what they are hearing.
- *Collaborative:* Here, the students form groups of learners that learn together and work to solve a problem, build strategies, ideas, create products or complete a task. This is a joint intellectual effort by the students among themselves or with the help of the teachers.
- *Integrative:* For the integrative approach, the students are given a learning environment that helps them in connecting with their learning across the syllabus. The four objectives of integration include: understanding the process of learning, Differentiating issues by

relevance, making use of the lessons in practical scenarios, and associating the concepts in regular lives

- *Reflective***:** As per the reflective approach, the students are expected to evaluate themselves. It means observing the activities of the teachers and other students in the classroom and analyzing why they do it and how it works.
- *Inquiry-Based Learning:* In the inquiry-based learning method, the educators are expected to not just answer the queries of the students, but also build a culture where their ideas are explored, challenged, improved, and refined. It aims to take the students from the position of wondering about a question to understanding the answer and then questioning it further.

Application of ICT in pedagogy or teaching

Application of ICT tools in teaching and learning process has changed the total scenario of teaching and learning process(Ugwu and Kingsley, 2019). They further stated that Information and Communication Technology (ICT) can enhance the effect of teaching - learning process. The development of ICT has given new dimension to the pedagogy. ICTs are potentially powerful tools for extending educational opportunities; they bring more materials and resources for classroom interaction. When ICT is applied in pedagogy or teaching, it can enhance the quality of education in several ways: by increasing learner motivation and engagement, by facilitating the acquisition of basic skills, and by enhancing teacher training. ICTs are also transformational tools which, when used appropriately, can promote the shift to a learner-centered environment.

ICT integration enhances teaching and learning: The application of ICT is creating significant changes in the teaching and learning process. The traditional approach in teaching has stressed on content.

For decades course materials were designed around textbooks. Teachers taught the content through lecture method and the activities were designed to enforce the content knowledge. Present day teachers need to create relevant and intriguing learning experiences for their students .Technology provides a remarkable role in making education inclusive since it has the potential to improve educational performance of students. Furthermore, utilization of ICT facilitates learner-centred approach rather than conventional teacher-centred pedagogy. The present day curricula promote aptitude and performance of the learners, emphasizing on the application of the information rather than factual knowledge. ICT facilitates the dissemination of knowledge based on the contemporary curricula. As a result, incorporating ICT in teaching helps both teachers and students since it has the potential to impart quality education if it is used effectively.

ICT enhancing academic performance: The relation between ICT integration and student performance has been the topic of research and discussion for the last two decades. Believe that ICT improves the performance of students since technology helps to improve teacher-students interaction. Meta-analysis study pointed out that, in general, students who used computer-based learning scored higher than students who learned without computers. ICT integrated learning helps students to grasp the concept better and also retain it for a longer period of time. ICT also help students to develop a positive attitude towards learning since they are engaged in the learning process. Analyzed the international data from the Programme for International Student Assessment (PISA). The findings revealed that there is a significant positive correlation between the availability of ICT and students' performance.

Thus, ICT helps to intensify students' content knowledge, involving them in building their own knowledge of the topic, and also help them in the development of high order thinking skills.

Therefore successful integration of ICTs facilitates collaborative and constructive learning, which promotes the academic performance of students.

Concept of Proficiency

Proficiency is the documented evidence that a student has met the required level of skill and knowledge set by benchmarks. Either a student meets this requirement, or the student falls short and must continue to work until they do meet the required level. There are disciplines proficiencies such as ICT proficiency, research proficiency, language proficiency and so on. Olaitan (2013) noted that to be competent implies that an individual has acquired the knowledge, skills, attitudes and judgments which he requires in order to perform successfully at a specified proficiency level in a given work. This implies that competency in an individual holds the key to effectiveness in work. Business education teachers must note that competency is a critical aspect of employability in an occupation and each competency evolves from explicit statements of teacher roles within the profession. Charles and Okauru (2014) commented that ICT competence refers to the ability of a university teacher to make use of the various ICT tools such as e-mail, facsimile, internet, World Wide Web, intranets, extranets, online databases and other networking technologies in the performance of their job.

In addition, ICT proficiency is the ability of lecturer to use ICT appropriately to access, manage, integrate and evaluate information, develop new understanding, and communicates with others in order to participate effectively in the society (Olafare, Lawrence, & Fakorede 2017) .Proficiency is one of the essential elements in teaching. It also determines the effectiveness of teachers during the teaching and learning process and performance of students. Proficiency is a term used to mean competency and competency reflects the ability to do something in contrast with more traditional ability to demonstrate knowledge. Competency can

be described as sum total of all skills and knowledge needed by a teacher to be successful in teaching (Onnoh and Adebayo 2020). Saad and Sankaran (2020) assert that technological proficiency is the teachers' or lecturers' ability to integrate technology into instruction in order to improve learning and productivity. Proficiency is needed in the pedagogy and possession of ICT skills.

Proficient Utilization of Pedagogical ICT skills of (CAL, CMI, CBI, CBT, CAD) for Job Performance of Business Educators

Mbagwu (2019) commented that possession of Information and Communication Technology (ICT) skills is required for effective knowledge sharing (KS) among academics in teaching, learning and research. He noted that they are innovative strategies used to carry out instructional delivery using the computer. This has taken over the conventional method of instructional delivery. They are as follow:

Computer Assisted Learning (CAL)

CAL is proficient and can be utilized for business educators' job performance .Root, Stevenson and Davis (2017) stated that Computer-assisted instruction (CAI) is an interactive instructional technique whereby a computer is used to present the instructional material and monitor the learning that takes place. They further said CAI uses a combination of text, graphics, sound and video in enhancing the learning process. More also, Nana (2020) noted that the term 'Computer Assisted Instruction' or 'Computer-Aided Instruction' (CAI) refers to the use of computer software to deliver instruction. According to Ezenwafor and Nwachukwu (2020) described Computer-Assisted Instruction (CAI) as an interactive instructional method whereby a computer is used to deliver instruction and monitor students' learning development. They added

that CAI can record and store all the students' responses as well as decide what information is to be given to them next. CAI arouses the interest and maintains the attention of the learner from the beginning of a learning process to the end. It enhances individualization of instruction, drill and practice which enhances mastery and learning outcome. CAI is very suitable for learning Keyboarding and other skills in Word Processing and improves interactive learning.

Also, Chen (2017) commented that computer-aided instruction was effective on promotion of students' academic achievement. Computer Aided Instruction was a practicable teaching method as it could promote students' academic achievement and enhance the learning interests and attitude. Moreover, computer aided instruction could reduce students' time for learning. Ezenwafor and Ugwu (2018) maintained that Computer Assisted Instruction (CAI) is a systematic approach to developing students' knowledge and/or skills that uses a computer as a central feature to support instruction via activities including, but not limited to, presenting materials, assessing progress, and guiding activities. Chalmers and Wright (2018) explained computer-aided instruction as the interactive teaching using computers for directly helping learners' learning. Computers were used for providing course contents and preceding teaching through practice, tutorial, and simulation to achieve the teaching objectives. However, the word computer in computer aided instruction was a general name, referring to teaching activity with computers as the control. For this reason, instructional multimedia and intelligent tutoring systems were covered in computer-aided instruction.

Further, Ene and Upton (2018) pointed out that "Computer Aided Instruction" is an interactive teaching method using computer systems for directly helping students' learning, utilizing the characteristics of computer systems for providing teaching situations, presenting course contents, controlling teaching progress according to students' levels, and preceding

teaching with tutors, training and practice, tutorial, problem-solving, games, and simulation to achieve instructional objectives. Fan and Ma (2018) mentioned that computer aided instruction utilized the characteristics of computers (texts, pictures, and images) and was the teaching software learning system constructed by adjusting task complexity and learning speed according to learners' individual differences. Paul (2021) stated that Computer-assisted learning describes the education that uses computers and other technologies and doesn't require human intervention or interaction. It can take many different forms, as we'll review below, and, despite its name, it involves a range of tools and devices, such as mobile devices, tablets, desktops, and others. Akmigbo, Orji, Charles & Umeh (2022) observed that students taught with CAI performed better than those taught without CAI. They added that CAI programs increase student learning by increasing motivation.

Paul (2021) stated the following as the pros and cons of CAI. Pros of Computer-Assisted Learning are:

- *Students and instructors can receive real-time feedback*: CAL reveals solutions and assesses student performance immediately. Therefore, it can deliver immediate feedback to the learner, not only cataloging mistakes but also providing analytics that go a step beyond to help students improve. This is also beneficial for instructors, who can use this data as a tool to inform their own teaching and as well as their assessment of student performance.
- *The learning process is more interactive and engaging:* CAL takes on many different forms, and each one is meant to engage learners. Students are likely to respond to these new, exciting ways of gaining exposure to and absorbing content-often far more so than learning through traditional classroom instruction. Because there are so many different methods associated with CAL, the risk of boredom is greatly reduced. CAL is usually interactive, too, which involves

students and makes them agents of their own learning, increasing their stake in the education process.

- *Learning can be more personalized*: Many CAL programs adjust the approaches based on the individual learner's progress. The software adapts according to how the student is learning, whether it's a game, interactive demonstration, or assessment. Students can also go at a pace that works for them, and the program will adjust to meet them where they are. A more personalized approach leads to both a higher level of engagement and stronger learning outcomes.
- *Technology can fill the gaps for students with learning differences:* CAL has implications for students with a range of learning differences, too, giving greater access to those with different educational and learning needs. Because accessibility is such an important concern, CAL's relevance is underscored in this arena. Through a personalized, adjustable approach, CAL tools can address a range of special needs. Paul (2021) noted CAI is also known as Computer-Assisted Instruction. Examples of CAI applications include guided drill and practice exercises, computer visualization of complex objects, and computer-facilitated communication between students and teachers. This is relevant to Business Educators.
- *Relevance of Computer Assisted Instruction to Business Educators*

It is relevant to students as the main sources of receiving facts and information's for the business educators and recipients. Drill and practice opportunities are provided to the students. It is useful to the form of learning in the Business education laboratory. It is important in solving administrative problems. It is helpful in lecture evaluation processes. It is useful in framing time-table for business education lecture time,

Furthermore, Brain (2020) affirmed the following as the advantages of Computer Assisted Language (CAL): (1) Through Computer Assisted Learning (CAL) individualized learning needs of the learners can be taken care of. Learner is free of the limitations of time, space, and other factors. Each learner can learn freely without being affected by the performances of other learners. **(**2**)** Computer Assisted Learning facilitates presentation of information in a structured and ordered manner which makes learning easy and interesting.(3) Computer Assisted Learning influences learner's participation in the learning process. On the other hand books fail to influence this participation. **(**4**)** Computer Assisted Learning makes feedback and reporting of learner's progress readily and timely available. Thus, the learner can work on his/her weaknesses well in time.(5) Computer Assisted Learning uses a wide range of multimedia using audio and visual inputs that help the learner in achieving the knowledge objectives. (6) Computer Assisted Learning also makes drilling quite easy which can be quite useful in improving the learning output of students with low-aptitude. In addition to this, Brain (2020) noted these disadvantages of CAL: **(**1**)** Computer Assisted Learning is always liable to be underused. If not implemented and applied properly it may fail to help the learner achieve learning objectives.(2**)** Though Computer Assisted Learning creates virtual atmosphere while teaching science subjects such as Chemistry, Physics, Biology, etc., students may miss hands on experience which they get in an actual laboratory. (3**)** Computer Assisted Learning is quite expensive as compared to ordinary learning. (4) Learning Content used in Computer Assisted Learning needs timely and regular up gradation, which again is quite expensive. Delay in up gradation and development of new content might make the old content useless with the passage of time. **(**5**)** Computer Assisted Learning requires highly efficient teachers; efficient teachers are exceedingly rare in our country. Inefficient handling of Computer Assisted Learning apparatus and content may further cause many problems.

Furthermore, Wang (2017) re-emphasized and supported the following as the advantages of CAI. (1) It provides one-to-one interaction for business education students. (2) It is a great motivator to business education students. (3) It provides freedom to experiment with different options. (4) It provides instantaneous response/immediate feedback to the answers elicited. (5) It provides self-pacing –this allows students to proceed at their own pace .(6) It helps teacher can devote more time to individual students.(7) Privacy helps the shy and slow learner to learn.(8) It provides individual attention.(9) It helps to learn more and more rapidly. (10) Self-directed learning – students can decide when, where, and what to learn. Wang (2017), noted these as disadvantages of CAI: (1) Packages can become boring if a student is alone at a terminal for too long. Most packages should run for an hour or so. (2) A programmer cannot cater for every possible response and may give unexpected and unhelpful responses to unusual input. (3) A few students are intimidated by the strangeness of a computer terminal. Apart from Computer Assisted Instruction used in pedagogical ICT skills, there is also Computer Managed Instruction (CMI).

Computer Managed Instruction (CMI)

According to Wiki (2021), Computer Managed Instruction (CMI) is an instructional strategy where the computer is used to provide learning objectives, learning resources, and assessment of a learner's performance. They added that Computer Managed Instruction (CMI) aids the instructor in instructional management without actually doing the teaching. Computer Managed Instruction (CMI) is also called Computer Managed Learning (CML**)**. Salako, Solomon, Muhammad and Garba (2020) stated that Computer managed instruction is an instructional technique where learning instructions and assessment of specific objectives are carried out through the use of computer applications. In a Computer Managed Instruction

environment, the learners might listen and watch computer animation to acquire specific knowledge. The teachers or instructors are not major active facilitators, rather; the learners are active because computer-managed instruction is a learner-centered technique. This implies that the learners could repeatedly learn specific instruction or acquire specific knowledge at their pace without over dependence on their teacher. John and Harrison (2018) re-emphasized that CMI is an instructional strategy that uses a computer to deliver learning objectives, learning resources, and assessment of learner performance. Significantly, they added that computer managed instruction engages the learners to learn at their own pace and relieves the physical stress of teachers who would not actively involved in the teaching. Honeycutt (2014) added by listing four major functions of a computer managed instructional program as test scoring, diagnosing, prescribing and reporting. In his report, Honeycutt describes several variations of the use of computers in the management of instruction.

Furthermore, Salako and Garba (2020) commented that Computer Managed Learning is an electronic management information system of a student learning. They added that it is a significant application of computer technology for accountability and documentation of student progress by electronic filing, sorting, and reporting of his learning outcomes. As compared to conventional classroom instruction, the computer Managed Instruction (CMI) developed by Daniel Davies (2018) appears to have many superior features. In conventional instruction, the teacher must make the decision instead of the computer. He must decide what to teach (objectives) to whom (entering behaviour) and how (procedures). CMI is relevant to business education students as it provides the following instructional functions: (1) Assesses the learner's present level of knowledge. (2) Diagnoses weakness or gaps in the student's learning. (3) Prescribes learning activities to remediate the identified weaknesses, and

(4) It helps to continuously monitors progress of the business education learners. (5) It is a system used to monitor business education student progress and the effectiveness of their instruction. (6) The computer technology can be used to collect, analyze, and report information concerning the performance of students in an educational program. Apart from CMI as Technology used for instructional delivery, we also have Computer Based Instruction (CBI).

Computer Based Instruction (CBI)

stated that Computer Based Instructional (CBI) techniques refers to virtually any kind of computer usage in educational settings, including drill and practice, tutorials, simulations, games, instructional management, instructional programme and other areas of applications (Michael and Igenewari, 2022). Serin (2021) emphasized that CBI is the use of computers in the teaching and learning activities. CBI enables the students to learn by self-evaluating and reflecting on their learning process. CBI motivates students to learn better by providing them with the immediate feedback and reinforcement and by creating an exciting and interesting game-like atmosphere. In addition, Computer-based instruction is an instructional paradigm (pattern), which uses computer technology to deliver training or educational materials to users. Training video discs or CD-ROMs used in business training are some of the most common types of CBI. CBI is a teaching approach that integrates computer software programs with other teaching materials in the classroom. There are many ways CBI can be used in the classrooms or as standalone learning tools. Teachers use CBI for drills and practices, tutorials, simulations, and instructional games.

Technopedia (2021) viewed Computer Based Learning (CBL) as the term used for any kind of learning with the help of computers. Computer Based Learning makes use of the interactive elements of the computer applications and software and the ability to present any type of media to the users. Computer-based learning has many benefits, including the advantage of

users learning at their own pace and also learning without the need for an instructor to be physically present. Computer-based learning or Computer based instruction has some advantages to business educators as (1) It provides more learning opportunity for business education students from disadvantaged environments. (2)Students can learn at a pace comfortable for them, unlike in a traditional classroom. (3) Users need to spend only the required time to learn the subject in the case of computer-based learning, and it is also available all the time.(4)Computer-based learning is cost effective in many ways, as it reduces travel time and also the same application can be used to teach new students or users. (5) The learning also offers safety and flexibility as well as helps learners to track their progress. (6) It helps in the reduction of overall training time. Apart from the advantages, there are some setbacks associated computer-based learning and these are: (1) Students do not have the opportunity for physical interaction with the instructors. (2) Development of computer-based learning can be time consuming. (3) The software or the hardware required for learning can be expensive. (4) Not all subjects or fields can be supported or assisted by computer-based learning.

Computer based Test (CBT)

Computer-Based Test (CBT) is a test using a computer as the media (Sofiyatul and Nujmatul, 2017). The computer-Based Test is conducted in a computer laboratory connected with the internet connection .In the test, each student sits in front of one unit of a computer connected to the internet connection. Multiple choices are usually used as the test items in the computer-based test but do not limit to other forms of the test. Even if usually it is conducted in a computer laboratory with the internet connection, but it is also possible to conduct the computer-based test in a classroom using laptops or PCs connected with the internet connection. According to Mercer and Mettle (2021) Computer Based Test refers to delivering assessments with computers

as an alternative using the pen and paper method. They added that such test can be conducted online using the internet or a computer aided facility. They mentioned that CBT is used for large scale online examinations.

In addition, Abhilash (2020) restated that Computer Based Test (CBT) is an online assessment, also known as digital or virtual assessments, he added that they are computer-based exams. Online assessments use information technology to empower test-takers to take assessments from anywhere, anytime. Online assessments are widely used by educational institutions and corporations. Mat (2015) commented that in Computer based test the candidates sit in front of a computer and the questions are presented on the monitor and the candidates submit the answers through the use of keyboard or mouse. He added that each computer is connected to a server, which prepares the question set and delivers it to the candidates on the computer. In another dimension, Bennett (2015) asserted that computer-based test represents a modern way of answering an examination questions, replacing the written pen and paper (PNP) format. He went further to state that CBT is a combination of networks, hardware and software as well as means of communication, collaboration and engagement that enables the processing, management and exchange of data, information and knowledge. It can be understood to be a complex of artificial techniques and knowledge for solving instructor's problem involving marking pen and examination. Bennett (2015) further said there are Problems of Computer Based Examination in Nigeria Educational Institutions. These are inadequate ICT infrastructure, Power supply, Students /candidates inadequate skills in ICT Integrity of examination managers, Acceptability, Software factors and so on. Samson (2019) re-emphasized that in computer-based testing (CBT), computer technology is employed, which means the candidates use computers to

answer questions presented on the monitor. The test-taker submits the answer using a keyboard or a mouse.

Furthermore, the relevance of CBT to business educators cannot be over emphasized. (1) It helps in multiple test administration .This means data from the assessment can be correlated with national or regional standards so that learners can be measured on these standards. (2) It helps in dynamic and individualized assessments: This means test can be personalized and tailored to individual students. (3) It helps immediate grading: Here, one could select response tests (like multiple choice or true /false) can be scored instantly, allowing learners to see how they did on an assessment. Online instructors or the assessment itself, depending on its design can help and guide learners on what they need to do in order to improve. (4) It gives feedback: Voice feedback tools, like Kaizena, allows instructors to provide voice feedback which makes feedback both easier for the teacher and more personalized for the learner. In particular, video-based feedback can provide students with individualized and personalized feedback on performance. (5) Vertically and horizontally aligned assessments: Tests can be vertically aligned anchored to test the same core knowledge at increasing levels of difficulty (criterion-based testing). They can also be horizontally aligned scored in such a way that learners can be compared against one another (norm-referenced), which is critical for sorting and choosing students for teaching posts, scholarships, and so on.

Also, Samson(2017) noted that Computer Based Testing (CBT) has a number of important advantages compared to Paper & Pencil (P&P) Testing such as efficiency, immediate scoring and feedback in the case of multiple-choice question exams. Furthermore, effective utilization of CBTs has significant impact on business educators' job performance. (1) It enhances teaching and learning: CBTs can provide immediate feedback to students, enhance

engagement, and improve learning outcomes. (2) It improves assessment efficiency: CBTs can automate the assessment process, reducing the time and effort required to grade assignments and exams. (3) It increases productivity: CBTs can help business educators to manage their workload more efficiently, freeing up time for others tasks (Abumustafa, 2020). CBT allow more innovative and authentic assessments due to more advanced technological capacities.

Computer Aided Design (CAD)

Computer Aided Design (CAD) is a creativity tool that can be used in business education and training for demonstration, exercises, diplomat projects and laboratory (Eghosa, Patrick, George, Chinedu and Oluwatimilehin, 2017). CAD can be used as demonstration for a large group of students during lectures. They added that it can be used to teach small groups. CAD can also be used in Business education to design ICT tools for teaching and learning. It aids to design instructional materials for teaching and learning of business education .Wesley (2020) affirmed that CAD (computer-aided design) is the use of computer-based software to aid in design processes. CAD software is frequently used by different types of engineers and designers. The purpose of CAD according to him is to optimize and streamline the designer's workflow, increase productivity, improve the quality and level of detail in the design, improve documentation communications and often contribute toward a manufacturing design database. Oyindoubra (2022) noted that CAD is a technology that is based on the use of a computer to display graphic images which enable research and design work to be transformed into finished products with higher quality and at lower cost. CAD has been one of the major technological breakthroughs, which assists the jobs of technologists, as its introduction has improved design quality, decreased errors and save time in several fields and industries.

Furthermore, Skill Touch Design (2021) emphasized that Computer Aided Design (CAD) is the use of computer software to design new products in 3D. This enables businesses to visualize new designs in a variety of materials and send images around the world for collaboration and consultation. CAD can be applied in Business education to do the following: Proposals and presentations, Company logos, school logos, road signs etc. ; Greeting cards, Wedding cards, Architectural drawing of all kinds , Interior design and facility planning, Work-flow charts and organizational diagrams and Graphs of all kinds. Skill Touch noted that CAD has some advantages, as (1) it increases productivity: This allows organizations to produce high quality, low-cost products and lets them push products out faster, making changes on the fly when necessary. This is a huge advantage in the competitive global marketplace. (2) Reuse and Easily Change Designs: Business education can use to carry out Fashion design and this industry that uses CAD often. It allows designers to create clothes and see how they would fit on virtual models, all without spending a dime on manufacturing. (3) Easier to Read: CAD software produces models that can be used by departments, including marketing and sales. It's an easy way to demonstrate your work and impress investors.

Review of Related Empirical Studies

Some related empirical studies are reviewed on proficient utilization of pedagogical Information and Communication Technology skills and perceived business educators job performance in colleges of education in Edo and Delta States.

Abubakar and Abubakar (2022) examined the relationships among ICT training, skills acquisition, ICT use and job performance of librarians and library officers in Universities in North-West Nigeria. The study was anchored on four specific objectives and four null hypotheses which were formulated and tested at 0.05 level of significance. Descriptive survey

design was used with a population of 1,327 library personnel (74 librarians and 95 library officers) in 18-fully operational universities in North-west Nigeria out of which 169 library personnel were adopted in seven selected universities using multi-stage sampling technique. The instrument for data collection was two set of structured and four point scale questionnaire for subordinates and university librarians' and was subjected to validation by library educators and statistics lecturers in a university. Test-retest method was used to pretest(administer) two set of the 40 copies of questionnaire at two week intervals outside the study areas (Federal University of Technology, Minna Nigeria) and the retrieved copies were subjected to Cronbach's Alpha method to establish a reliability coefficient index of 0.74 and modified copies of questionnaire were administered on respondents and data collected were analyzed by inferential statistics of Pearson Moment Correlation Coefficient and multiple-regression. Findings showed significant relationship between training and job performance, skills acquisition and job performance and ICT use and job performance respectively. Abubakar and Abubakar study and the present study are similar in independent variable of ICT skills and questionnaire was used as instrument for data collection in both. Their method of statistics using Pearson Moment of Correlation and Multiple regression is similar to the present study. Their study differ on dependent variable which theirs centred on job performance of librarian and library officers while the present study centred on job performance of business educators.

Owenvbiugie and Ebhomien (2021) investigated the effect of Computer Assisted Instruction (CAI) on secondary school students' academic achievement in Business Studies in Edo State. Two research questions guided the study and three null hypotheses were formulated and tested at 0.05 level of significance. The research employed quasi-experimental research design. Eighty seven (87) junior secondary school students were sampled from a population of 13,552 students. The sampled students consisted of 42 students in the treatment group and 45

students in the control group. Treatment group was taught Business Studies using CAI while the control group was taught using the conventional method. The instrument used for the collection of data was Business Studies Achievement Test (BSAT). The test contained 40 multiple choice questions. The instrument was validated by a team of experts. A reliability coefficient of 0.75 was obtained for the instrument using KR- 20 formula. The research questions were answered using mean(x) and standard deviation (SD) while the hypotheses were tested using t-test and analysis of variance (ANCOVA). The result revealed that there was a significant difference in the mean score of students using post-test when compared with their pre-test. Male and female students had a significant difference in their mean scores using CAI method. It also showed a significant interaction effect of method and gender. Consequently, upon these findings, the following recommendations were made among others, since students taught with Computer Assistant Instruction method performed better than those taught using conventional method of teaching, the use of CAI method in the teaching of business studies should be encouraged and imbibed by teachers of business studies in junior secondary schools in Edo State. Emphasis should be placed on the pedagogy behind the use of CAI by teachers of business studies for the teaching of business studies and other subjects in the educational system. The study of Owenvbiugie and Ebhomien's study is similar to the present study in the use of CAI an independent variable. They differ in research design as theirs was on quasi-experimental design while the present study used correlational design.

Ukah and Atah (2021) examined workplace variables and business educators' job performance in tertiary institutions in Cross River State. To achieve the purpose of the study, two research questions were posed and two hypotheses were tested. The study adopted survey research design. The population for the study was 89 business educators' from tertiary institutions in Cross River State, Nigeria. Census survey was used. A 40 item validated

researcher-made four points rating scale questionnaire titled "Workplace Variables and Business Educators' Job Performance Questionnaire" (WVBEJPQ) was used for data collection. The instrument was face and content validated by four research experts. A reliability estimate ranging from .76 to .84 was achieved for the instrument using Cronbach Alpha reliability coefficient after a pilot test. Data were analyzed using simple linear regression. All the hypotheses were tested at 0.05 level of significance. Findings revealed that physical work environment and career progression significantly influenced business educators' job performance in tertiary institutions in Cross River State. Based on the findings of the study, it was recommended amongst others that, owners of tertiary institutions-federal, state, and private proprietors should ensure that they provided the right quality of furniture and equipment, conducive working environment and an illuminated work area for business educators to operate. The reviewed work is similar to the current study as both used dependent variable of business educators' job performance in tertiary institutions. Both differ in independent variables as theirs was on work variables and the present study was on proficient utilization of pedagogical ICT skills.

Victor and Mekuri-Ndimele (2021) conducted an investigation on the influence of instructional delivery digitalization on job performance of business education lecturers in Ignatius Ajuru University of Education, Port Harcourt, Rivers State, Nigeria. The study examined the extent to which dimensions of instructional delivery digitalization such as networks and e-library facilitated the measures of lecturers' performance such as supervision of students' academic activities. The study also determined the moderating role of technological level of the institution in the relationship between instructional delivery digitalization and lecturers performance. The study adopted descriptive survey research design. Census survey was used from a population of 22 lecturers of different categories drawn from the department of business education in Ignatius Ajuru University of Education, Port Harcourt. The reliability of

the instrument was ascertained using Cronbach Alpha test method. Mean and standard deviation were used to analyze data generated. The results showed that dimensions of instructional delivery digitalization such as networks, and e-library facilitated measures of lecturers' performance such as supervision of students' seminars, projects, and industrial training. The reviewed work of Victor and Mekuri-Ndimele is similar to the present work in dependent variable of job performance of Business Education lecturers. The former study differs as it centred on digitalization using Network and e-library while the present study was on pedagogical ICT skills using CAL, CMI, CBI, CBT and CAD as variables.

Abdullahi and Peter (2020) researched on Computer Aided Design and Drafting Skills for Effective TVET Programme in Tertiary Institutions in Kano State, Nigeria. The objectives of the study were to find out the skills needed for the application of CADD in the TVET programme, to ascertain the students' capability of CADD application in the TVET programme, to discover the prospects of CADD application while designing and the constraints hindering the effective application of CADD in TVET programme. Four research questions were developed based on the study objectives. Ninety-seven (97) final year technical education students at Bayero University Kano (BUK) and 66(sixty-six) from Federal College of Education (Technical) Bichi final year students, were the study population. One hundred and eight students were used as the sample of the study. Descriptive survey method was adopted in the research work. Questionnaire (CADDSKILL) was developed and validated by three experts in the field of Drafting Technology Education. The coefficient reliability indexes obtained using the split-half method include 0.85 for section A, 0.76 for section B, 0.74 for section C, and 0.80 for section D. Mean and standard deviation were used for data analysis. The findings of the study showed that; problem-solving skills, long term learning skills, ability to learn using video tutorials and computer operation skills were the skills needed. It was recommended that the students must

have those CADD skills and learn CADD diligently, as this would improve their experience and enable them to become more versatile and conversant with CADD packages. Abdullahi and Peter study is similar to the current study as they both used questionnaire as research instrument to solicit information from respondents. They differ in location and research design. The reviewed study used split-half method to test the reliability of the instrument while the current study used pilot test method.

Igberaharha (2020) studied Computer Assisted Instruction (CAI) in Learning Final Accounts of Business Education in Delta State. The population of the study consisted of 1622 respondents which were drawn from five tertiary institutions in Delta State. The study assessed the perceived roles of CAI 'among business education students in the learning of final accounts in Delta State tertiary institutions. The researcher adopted survey method of the ex-post-facto research design for the study. The data collection instrument was tagged "Computer Assisted Instruction for Final Accounts Questionnaire (CAIFAQ)" and contained 10-items on a modified four- point Likert scale. Three hundred and twenty four (324) business education students drawn the five tertiary institutions in Delta state where business education programme was run formed the sample size of the study. Mean and standard deviation were used to analyze obtained data. The results of the study indicated that CAI had significant impact among business education students in learning final accounts in Delta State tertiary institutions. This reviewed work is related to the present study as they both studied ICT skills as their independent variables. Both studies used questionnaire as their instruments for data collection. Both studies however differ in research design as they used ex-post-facto research design while the present study used correlational research design.

Oluwalola (2020) investigated the accessibility of Information and Communication Technology (ICT) tools to business education lecturers and students. Descriptive survey research design was adopted for the study. A total of 110 students and 20 lecturers were randomly for the study. Two research questions guided the study and one null hypothesis was tested at 0.05 level of significance. The co-efficient of 0.86 was obtained for the reliability. Research questions were answered using mean and standard deviation values while t-test was used to test the null hypothesis. The results showed that ICT supportive tools were available for teaching and learning Business Education in Kwara State College of Education Ilorin. Hence, there was no difference in perception of lecturers and students accessibility of ICT tools. Respondents recommended provision of adequate ICT tools by the government for teaching and learning business education. Trainings like seminars with workshop were of immense importance for ICT support staff. Oluwalola's study is similar to the present study in using mean and standard deviation to answer the research questions. They differ as Oluwalola used only t-test to test the hypothesis while the present study used three statistical tools (Pearson 'r', Multiple regression analysis and Fisher z) to test the hypotheses.

Salako, Solomon, Garba and Muhammad (2020) studied Effectiveness of Computer-Managed Instruction (CMI) on Students' Performance in Tertiary Institutions. The researcher investigated the effectiveness of computer-managed instruction (CMI) on students' performance in tertiary institutions in the North-Central Geopolitical Zone of Nigeria. The control group was taught Computer Science using traditional lecture method (TLM) approach, and the experimental group was taught using CMI approach. A total of 360 students in colleges of education (COE), polytechnics, and universities participated in the study by using multi-stage sampling procedures. The null hypotheses were tested using ANCOVA and ANOVA statistical analyses at 0.05 level

of significance. Findings revealed that there was a statistical difference in the performance scores of students using CMI and TLM approaches. There was also a statistical difference between private and public tertiary institution students' performance. Additionally, the students from the universities had the highest mean when compared with students from colleges of education and polytechnics. Both studies are similar using the independent variable of CMI as part of ICT skills in colleges of education. Both differ in research design as the reviewed used experimental research design while the present study used correlational research design.

Bandele (2019) researched on Evaluation of General Studies Computer Based Tests (CBT) in Universities in South West Nigeria. The study ascertained the extent to which the objectives of General Studies programme had been implemented using Computer Based Test (CBT). The research design for the study was descriptive research of the survey type. The population for the study comprised 60,000 100 level undergraduate students of 2016/2017 academic session and 330 lecturers in GST in both private and public universities. The sample for the study consisted of 1890 respondents made up of 1800 students and 90 lecturers selected through Multi-stage Sampling Procedure. Three self-designed instruments such as General Studies Achievement Test (GSTAT), Questionnaire on General Studies Interest Scale (QGSTIS) and Questionnaire for Lecturers on General Studies (QGSTL) were used. Face, content and construct validity of the instruments were ensured and the reliability of the instruments was determined using Pearson Product Moment Correlation Analysis. Data collected were analyzed using descriptive statistics such as frequency counts and percentages. All the hypotheses were tested at 0.05 level of significance. The study concluded that the students' attitude to Computer Based Test for General Study's examination was positive and the objectives of general studies using Computer Based Test were achieved and effectively implemented. In view of the findings

of the study, it was recommended that both the public and private universities should emphasize the use of CBT for General Study's examinations since there was positive attitude of students on the use of CBT for GST. The reviewed study of Bandele is similar to the present study as it studied CBT as independent variable of ICT skills. It differs as theirs used three self-designed instrument to elicit data while the present used a structured instrument for data collection.

Ukata, Adejola and Okoye (2018) investigated Business Education Students` ICT Learning Experiences and Programme Satisfaction in Rivers State Universities. Correlational research design was used. The population of the study was 1,989 and sample of 377 students using Krejcie and Morgan table of determining the sample size from a known population. A self-designed instrument entitled: Business Education Students` ICT Learning Experience and Programme Satisfaction (BESICTLEPS) was used. Arithmetic mean was used to answer the research questions, and Standard Deviation used to find out the extent in which scores in the distribution clustered around the mean. Pearson Product Moment Correlation Coefficient (r) was the statistical tool for testing the hypotheses to determine the extent of significant relationship between the variables under investigation. The result of the findings showed low extent of satisfaction with ICT learning experiences and high negative significant relationship between the level of availability of ICTs used in teaching and acquiring learning experiences. High extent of satisfaction and very high positive correlation between the level of technological learning experiences areas available in Business Education and students` satisfaction, and low extent of satisfaction and high negative significant relationship between the levels of ICTs learning experiences acquired in Business Education and students` satisfaction. Among others, it was recommended that adequate ICTs for learning experiences should be made available to universities for teaching and learning by government and other concerned organizations. The

present study is on “Proficient utilization of pedagogical ICT skills and perceived Business Educators’ job performance” while Ukata et al’s study focused on “Business Education students ICT learning experiences and programme satisfaction”. The reviewed work of Ukata, Adejola and Okoye is the same in research design, research instrument, method of data analysis, but differs in scope, location and reliability of instrument.

Ajunwo (2017) examined the utilization of computer applications in teaching Business Education in Rivers State universities. The research adopted descriptive survey design. Two research questions and two hypotheses guided the study. The population for the study was all 71 Business Education lecturers in the two Rivers State universities, namely; Rivers State University, Port Harcourt (RSU) and Ignatius Ajuru University of Education (IAUOE). No sampling was used since the population was manageable. The instrument used for data collection was a structured questionnaire titled “Utilization of Computer Applications in Business Education Questionnaire” (UCABEQ). The reliability of the research instrument was obtained using Cronbach alpha method and a reliability coefficient of .75 was established. Forty one copies of the questionnaire only were retrieved and analyzed using mean for the research questions and t-test for the hypothesis at 0.05 level of significance. The results obtained indicated that the utilization of Computer Applications in teaching Business Education in Rivers State universities was very low. Thus, the study recommended that Business Education programme managers should insist on the use of ICT for teaching Business Education and that government and relevant stakeholders should endeavour to make ICT facilities available. One of the findings of the study was that Microsoft Office Applications were poorly used in teaching business education in both institutions studied. Apart from the fact that Microsoft Word, Excel and PowerPoint were highly utilized, the study revealed that other applications such as Clip Organizer, Picture Manager, Share Point, Access and Outlook were poorly used in teaching

Business Education. The reviewed study focused on utilization of ICT but lacked the area of proficiency. The reviewed work of Ajunwo is similar to the present study using independent variable of ICT, dependent variable of business education lecturers, reliability of instrument and questionnaire as instrument. Both studies differ in research design, scope, location and method of data analysis.

Wanjiru, Mwanda and Midigo (2017) studied Computer Based Instruction and Learner Achievement; Implications for Training Art and Design in Kenya's Secondary Schools. The study investigated the extent to which Computer Based Instruction could improve learner's performance in Art and Design in Kenya's secondary schools. The study design was quasi-experimental. The target populations of the study were form two students doing Art and Design and their subject teachers. Nine boys' and nine girls' schools were used in the study making a total of eighteen public secondary schools in Kenya. Four hundred and fifty students and 18 teachers were respondents in the study. The treatment groups had 300 students while control groups had 150 students. Each treatment group had three schools which were instructed using computer based instructional approach. Control group comprised three boys' and three girls' schools both instructed using traditional methods of instruction. The study tools were pre-test and post-test exams. Data were analyzed using Statistical Package for Social Science version 22. The study found that learners who were taught graphics in Art and Design using computer based approaches showed improved performance as compared to those taught through traditional methods. The study recommended strong support at the national level towards systematic planning for the use of technology in the schools through improving facilities, equipment and training of the Art and Design teachers to gain computer skills. The reviewed study is similar to the present work as it used Computer Based Instruction as one of the independent variables. Both

studies differ in design as theirs used quasi-experimental design while the present used correlational design.

Okolocha and Nwadiani (2015) assessed the utilization of ICT resources in teaching among business educators in tertiary institutions in south Nigeria. Two research questions and two null hypotheses guided the study. Descriptive survey research design was adopted for the study. The population and sample for the study comprised all 240 business educators in colleges of education and universities in south Nigeria. A 28-item structured questionnaire was used as instrument for data collection. Copies of the instrument were administered on 240 business educators and 213 were returned representing 88.75 percent. Data collected were analyzed using mean and standard deviation for the research questions. The null hypotheses were tested at 0.05 level of significance using inferential statistics of t-test. The findings revealed that the few available ICT resources were rarely utilized in the teaching of business education, ICT resources utilization has high influence on teaching and that business educators encounter several problems such as irregular power supply in the utilization of ICT resources. It was recommended among others, that government and stakeholders in education should make adequate budgetary allocation for the provision of ICT resources and the identified barriers that stand against effective utilization of ICT should be tackled and removed to better equip products of tertiary institutions to fit into various workplaces. The reviewed study is similar in the dependent variable of business educators. It is also similar in the independent variable of ICT and scope. Okolocha and Nwadiani's study and the present study differ in location, research design, reliability of instrument and method of data analysis.

Onasoga (2015) investigated the availability and utilization of ICT resources in teaching of business education courses in tertiary institutions in Ogun State. The study adopted a survey

research design. A population of 30 business education lecturers was used for the study. Four research questions and three null hypotheses were raised and formulated respectively to guide the study. Data collected were analyzed using the mean and standard deviation for the research questions while t-test statistic was used for testing the null hypotheses. It was found from the study that: nine out of twenty ICT resources were available for teaching business education courses; information communication technology resources were often utilized for teaching business education courses and information and communication technology resources highly contributed to the teaching of business education courses in tertiary institutions in Ogun State; All the problems presented faced the teaching of business education courses using information and communication technology recourses in tertiary institutions in Ogun State. There was no significant difference in the mean ratings of male and female business education lecturers on; the level of utilization of ICT resources; the contributions of information and communication technology resources and the problems facing information and communication technology resources in teaching business education in tertiary institutions in Ogun State. The study by Onasoga is similar to the present study in dependent variable of business education lecturers, independent variable of ICT, questionnaire and method of data analysis. Both differ in location and design.

Abdullahi and Tukur (2014) studied the Impact of Computer-Assisted Instruction (CAI) and school type on Students' Academic Performance in Basic Technology. The study found out the impact of Computer Assisted Instruction (CAI) and school type on academic performance of students in Basic Technology in Sokoto State. The study adopted quasi-experimental, pre-test/post-test, control/experimental group design. Purposive sampling technique was used to select intact classes of 55 female and 115 male students from the JSSII stream of two schools,

Government Day Secondary School, Dange, and Government Secondary School, Kware, in Sokoto State GDSS, Dange, was the experimental group, while GSS, Kware, the control group, Basic Technology Performance Test (BATPET) instrument was used to collect data, while independent t-test on the SPSS package was used to analyze data obtained. The study revealed no significant difference between CAI and traditional instruction. Furthermore, the study showed no significant difference between day school students and boarding school students. These outcomes may be ascribed to some extraneous factors such as students' familiarity with computer and cognitive strategies. Secondary school environment, whether for day school structure or boarding school, must be made conducive and equipped with ICT tools for enhanced teaching and learning. The reviewed study of Abdullahi and Tukur is related to the present study as it studied CAI as a subset of ICT skills and also on performance but the present study was on business educators' job performance and theirs was on students' academic performance. Both studies differ in research design as theirs was experimental design and the present on correlation research design. They also differ in sample size, population, method of data analysis and dependent variable.

Summary of Reviewed Literature

The review of related literature on proficient utilization of pedagogical ICT skills and perceived business educators' job performance in colleges of education in Edo and Delta States was initiated by considering the theoretical framework which is Technology Acceptance Model (TAM) by Fred Davis. The theoretical framework used was TAM. It has two beliefs which are perceived usefulness and perceived ease of use. Perceived usefulness of TAM is highly relevant to perceived business educators' job performance. From perceived usefulness, TAM can be extended to explain how proficient utilization of Pedagogical ICT skills affects perceived business educators' job performance. Business educators' who proficiently utilize ICTs into their

jobs likely perceived themselves as more effective in their jobs. This implies that ICTs ease their job performances. The conceptual framework explored included: the concept of business education, and its importance, concept of job performance, concept of ICT and its importance to education. It also explored the concept of pedagogy, concept of proficiency, proficiency in pedagogical ICT skills of CAL, CMI, CBI, CBT, CAD and utilization for job performance.

The chapter reviewed some empirical studies related to the study. From the literature reviewed, most studies used a single independent variable of ICT to determine the job performance of business educators in tertiary institutions but the present study combined the five sets of independent variables of CAI, CBI, CMI, CBT and CAD to determine the job performance of business educators' in colleges of education in Edo and Delta States. Thus, this is the gap the study filled.

CHAPTER THREE

METHODOLOGY

This chapter deals with the method adopted in carrying out this study. It is organized under the following sub-headings:

- Design of the Study
- Population of the Study
- Sample and Sampling Technique
- Research Instrument
- Validity of the Instrument
- Reliability of the Instrument
- Method of Data Collection
- Method of Data Analysis

Design of the Study

The research design adopted for this study was survey research using correlation research design. Correlational research is a research methodology in which the researcher measures two or more variables and assesses the statistical relationship between them. This design enables the researcher to determine the extent to which the variation in one variable influences the other. The design was considered suitable and applicable for this study because it was meant to explain the relationship between proficient utilization of pedagogical ICT skills (independent variable) prediction of business educators' job performance (dependent variable) in colleges of education in Edo and Delta States.

Population of the Study

The population of the study consisted of 107 business educators' in colleges of education in Edo and Delta States, Nigeria. The total numbers of business educators in these colleges of education are one hundred and seven (107).

Table 1: Population Distribution of Business Educators' in Colleges of Education in Edo and Delta States

Names of Institutions	Business Educators
Federal College of Education (Technical), Ekiadolor	10
Edo State College of Education, Igueben	3
Federal College of Education (Technical), Asaba	66
Delta State College of Education, Warri	17
Delta State College of Physical Education, Mosogar	11
Total	**107**

Sources: HOD Business Education Colleges of Education Departmental Offices (2024).

Sample and Sampling Technique

The sample size of the study was 107 business educators in Edo and Delta States. As a result of the limited number of respondents, the entire population was used as the sample size hence a census.

Research Instrument

The instrument used for the data collection in this study was a structured questionnaire titled: Proficient Utilization of Pedagogical ICT Skills and Perceived Business Educators' Job Performance in Colleges of Education in Edo and Delta States PUPBEJP (Appendix B). The instrument was developed by the researcher after careful literature review.

The instrument was segmented into two main parts, Part A and Part B. Part A dealt with the bio-data of the respondents such as location of institution, state and gender, while Part B

was subdivided into two sections, Section A and Section B. Section A had three clusters with 32 items measuring level of Proficiency on pedagogical ICT skills, Level of utilization of pedagogical ICT skills and Job performance indicators and they were rated on four point scale ranging from Very High Extent VHE(4), High Extent HE(3), Low Extent LE(2) to Very Low Extent VLE(1) while Section B had five clusters with 28 items on Proficiency and utilization of CAL/CAI, CMI, CBI, CBT and CAD and they were rated on four point scale ranging from Strongly Agree SA(4), Agree A(3), Disagree D(2) to Strongly Disagree SD(1).

Validity of the Instrument

In order to establish the validity of the instrument for the study, the researcher presented the instrument to five experts for validation which included the researcher's supervisors, two (2) other experts from the Faculty of Vocational and Technical Education and one psychometrician from the Department of Educational Evaluation and Counseling Psychology (EECP) from University of Benin, Benin-City. There were corrections on level of proficiency pedagogical ICT skills that items 1-10 should be rephrased "Ability to" and changed to "I use". The Likert scale was changed from Strongly Agree (SA), Agree (A), Disagree (DA), and Strongly Disagree (SD) to Very High Extent (VHE), High Extent (HE), Low Extent (LE) and Very Low Extent (VLE) on items 1-21. Additionally, on proficient and utilization of CBT, "I can use CBT" was changed to "I use CBT". The corrections and suggestions were taken into consideration in the preparation of the final copy of the instrument.

Reliability of the Instrument

The researcher administered twenty (20) copies of the questionnaire once to twenty business educators in Federal College of Education, Omoku, Rivers State that were not part of the population in this study. This college of education possessed similar characteristics with the areas of study. To establish the internal consistency of the items, the reliability of the instrument

was determined using Cronbach alpha statistics. The reliability coefficient of 0.94 was obtained for proficiency and utilization of pedagogical ICT skills and 0.74 was obtained for business educators' job performance which showed that the instrument was reliable.

Method of Data Collection

The instrument was administered to the respondents with the help of three research assistants who were briefed on how to administer and retrieve the completed copies of the questionnaire. This was done by giving them brief instructions on how to carry out the data collection. One hundred and fifteen questionnaires were administered and one hundred and seven were retrieved from respondents. The questionnaire was administered and retrieved immediately to ensure a high return rate. This administration lasted for two weeks.

Method of Data Analysis

Data collected from respondents were analyzed using Mean ($\bar{x}$), Standard Deviation (SD), Pearson Product Moment Correlation Coefficient (PPMCC), Multiple Regression Analysis and Fisher z transformation with the statistical package for the social science (SPSS) version 25.The Mean ($\bar{x}$) and Standard Deviation (SD) were used to answer the research questions while Pearson Product Moment Correlation Coefficient (Pearson r), Multiple Regression Analysis and Fisher z transformation statistics were used to test the hypotheses . Pearson Product Moment Correlation Coefficient (Pearson r) and Multiple Regression Analysis were used to establish the relationship between the independent and the dependent variables as well as the prediction of the independent variable on the dependent variable of the study. The Fisher z transformation statistics tested if there was any difference in relationship between the independent and the dependent variables by the intervening variables (gender and location of institution). The decision rule for research questions was based on any calculated mean equal or greater than 2.50 and was regarded as agreed or high extent while any calculated mean less than 2.50 was

regarded as disagreed or low extent. For the hypotheses, the probability value (p) was used. If the p-value was less than or equal to 0.05, the null hypothesis was not retained, but if the p-value was greater than 0.05, the null hypothesis was retained. Additionally, the critical value of ±1.96 was used such that when the calculated z-value was higher than ±1.96, the null hypothesis was not retained, but where calculated z-value was less than ±1.96, the null hypothesis was retained.

CHAPTER FOUR

PRESENTATION OF RESULTS AND DISCUSSION OF FINDINGS

This chapter deals with the presentation of results and discussion of the findings.

Presentation of Results

Research Question One

What is the level of proficiency of pedagogical ICT skills possessed by business educators in colleges of education in Edo and Delta States?

Table 2: Mean and Standard Deviation showing the level of proficiency of pedagogical ICT skills possessed by Business Educators in Colleges of Education

S/N	Items	N	Mean	SD	Remarks
1	I use interactive board for lesson delivery.	107	2.82	1.03	H/ Extent
2	I provide students' assignment and send feedbacks via email.	107	2.66	0.92	H/Extent
3	I connect and use video/audio conferencing.	107	2.50	1.00	H/Extent
4	I store and retrieve documents in the computer.	107	3.32	0.82	H/Extent
5	I photocopy, scan and print documents from the internets.	107	3.21	0.87	H/Extent
6	I use projectors during instructional delivery.	107	2.60	0.90	H/Extent
7	I create documents with graphics and course materials.	107	2.88	0.87	H/Extent
8	I download books and educational materials via the internet.	107	3.70	3.72	H/Extent
9	I browse and navigate the internet.	107	3.25	0.78	H/Extent
10	I create and manage websites.	107	2.36	0.90	L/Extent
	Cluster Mean		**2.93**	**0.89**	**H/Extent**

Note: SD (Standard Deviation), N (Sample Size)

In response to research question one, Table 2 shows the level of proficiency of pedagogical ICT skills acquired by business educators in colleges of education in Edo and Delta States. The respondents rated items 1 to 9 high extent with mean ratings ranging from 2.50 to 3.70 while item 10 is rated as low extent with a mean of 2.36. The standard deviations also range from .78 to 3.72. The cluster mean shows a mean of 2.93. This shows that the level of proficiency of pedagogical ICT skills possessed by business educators in colleges of education in Edo and Delta States is high.

Research Question Two

What is the level of utilization of pedagogical ICT skills possessed by business educators in colleges of education in Edo and Delta States?

Table 3: Mean and standard deviation showing the level of utilization of pedagogical ICT skills possessed by Business Educators in Colleges of Education

S/N	Items	N	Mean	SD	Remarks
11	I have a mastery of interactive board to prepare lessons.	107	2.77	.886	H/Extent
12	I can use the interactive board for lesson delivery.	107	2.81	0.86	H/Extent
13	I can use e-mail to provide assignments and send feedback via email.	107	3.00	0.85	H/Extent
14	I can use ICT for video and audio conferencing for lectures.	107	2.99	0.96	H/Extent
15	I can use the computer to store and retrieve documents of my lessons.	107	3.13	0.87	H/Extent
16	I can scan, print and photocopy documents as regards my lessons.	107	3.12	0.77	H/Extent
17	I can connect the projector for instructional delivery.	107	2.78	0.87	H/Extent
18	I can create documents with graphics and course materials for lectures.	107	2.91	0.81	H/Extent
19	I can download books and educational materials via internet for lectures.	107	3.19	0.81	H/Extent
20	I can convert the downloaded materials to MS Word for lessons.	107	3.79	4.71	H/Extent
21	I can effectively use Microsoft word and spreadsheets for learning skills.	107	3.43	2.99	H/Extent
	Cluster mean		**3.08**	**1.27**	**H/Extent**

Note: SD (Standard Deviation), N (Sample Size)

The data in Table 3 depict the level of utilization of pedagogical ICT skills possessed by business educators in colleges of education in Edo and Delta States. The respondents' rated items 1 to 11 high extent with mean ratings of 2.77 to 3.79 while the standard deviations also range from 0.77 to 4.71. The cluster mean shows a mean of 3.08. This shows that the level of utilization of pedagogical ICT skills possessed by business educators in colleges of education in Edo and Delta States is high.

Research Question Three

What is the level of job performance of business educators in colleges of education in Edo and Delta States?

Table 4: Mean and standard deviation showing the level of job performance of Business Educators in Colleges of Education

S/N	Items	N	Mean	SD	Remarks
	Teaching and Instructional Purposes				
22	I do teach, give and mark assignments.	107	3.72	2.94	H/Extent
23	I prepare lessons and teaching materials.	107	3.33	0.76	H/Extent
24	I always use instructional materials during lecture delivery.	107	3.26	0.81	H/Extent
	Administrative Purposes				
25	I supervise teaching practice and compile results.	107	3.31	0.77	H/Extent
26	I supervise Students' Industrial Work Experience Scheme (SIWES)	107	3.11	0.86	H/Extent
27	I supervise project and seminar.	107	3.24	0.88	H/Extent
	Evaluation Purposes				
28	I evaluate and grade students' class work, assignments and papers.	107	3.34	0.81	H/Extent
29	I compile, administer and grade examinations.	107	3.36	0.82	H/Extent
30	I compile students' results and submit at the right time.	107	3.36	0.76	H/Extent
	Conducting Research and Publication				
31	I collaborate with colleagues to address teaching and research issues.	107	3.23	0.81	H/Extent
32	I conduct research in a particular field of knowledge and publish findings in professional journals, books and/or electronic media.	107	3.25	0.78	H/Extent
	Cluster Mean		**3.32**	**0.64**	**H/Extent**

Note: SD (Standard Deviation), N (Sample Size)

The data in Table 4 depict the level of job performance of business educators in colleges of education in Edo and Delta States. The respondents' rated items 1 to 11 high extent with mean ratings of 3.11 to 3.72 while the standard deviations also range from 0.76 to 2.94. The cluster mean shows a mean of 3.32. The above mean scores show that the level of job performance of business educators in colleges of education in Edo and Delta States is high.

Hypothesis One

There is no significant relationship between business educators' proficient utilization of CAL/CAI pedagogical skills and their job performance in colleges of education in Edo and Delta States.

Table 5: Pearson r showing the relationship between business educators proficient utilization of CAL/CAI pedagogical skills and their job performance in Colleges of Education

Variables	N	$\bar{x}$	SD	r	p-value	Decision
Proficient utilization of CAL/CAI	107	2.83	0.73	.162	.009	Significant
Job performance indicators		3.32	0.61			

Table 5 shows the significant relationship between business educators' proficient utilization of CAL/CAI pedagogical skills and their job performance in colleges of education in Edo and Delta States. The Table shows means of 2.83 and 3.32, as well as standard deviations of 0.73 and 0.61 for proficient utilization of CAL/CAI and job performance indicators respectively. The correlation coefficient between proficient utilization of CAL/CAI and business educators' job performance indicators is 0.162 which is positive and low. Since the p-value of .009 is less than 0.05, hence the null hypothesis is not retained. This therefore shows that there is a significant relationship between business educators' proficient utilization of CAL/CAI pedagogical skills and their job performance in colleges of education in Edo and Delta States.

Hypothesis Two

There is no significant relationship between business educators' proficient utilization of CMI pedagogical skills and their job performance in colleges of education in Edo and Delta States.

Table 6: Pearson r showing the relationship between business educators proficient utilization of CMI pedagogical skills and their job performance in Colleges of Education

Variables	N	$\bar{x}$	SD	R	p-value	Decision
Proficient utilization of CMI	107	2.70	0.68	.261	.007	Significant
Job performance indicators		3.32	0.61			

Data in Table 6 show the significant relationship between business educators' proficient utilization of CMI pedagogical skills and their job performance in colleges of education in Edo and Delta States. The Table shows that the correlation coefficient of .261 is positive and low. The result shows that the means of 2.70 and 3.32, as well as standard deviations of 0.68 and 0.61 are obtained for proficient utilization of CMI and job performance indicators respectively. Since the p-value of .007 is less than 0.05, the null hypothesis is not retained. Thus, that there is a significant relationship between business educators' proficient utilization of CMI pedagogical skills and their job performance in colleges of education in Edo and Delta States.

Hypothesis Three

There is no significant relationship between business educators' proficient utilization of CBI pedagogical skills and their job performance in colleges of education in Edo and Delta States.

Table 7: Pearson r showing the relationship between business educators proficient utilization of CBI pedagogical skills and their job performance in Colleges of Education in Edo and Delta States.

Variables	N	$\bar{x}$	SD	r	p-value	Decision
Proficient utilization of CBI	107	2.69	0.59	.226	.019	Significant
Job performance indicators		3.32	0.61			

Table 7 shows the significant relationship between business educators' proficient utilization of CBI pedagogical skills and their job performance in colleges of education in Edo and Delta States. The Table shows means of 2.69 and 3.32, as well as standard deviations of 0.59

and 0.61 for proficient utilization of CBI pedagogical skills and job performance indicators respectively. The correlation coefficient between proficient utilization of CBI pedagogical skills and business educators' job performance indicators is .226 which is positive and low. Since the p-value of .019 is less than 0.05, hence the null hypothesis is not retained. This therefore connotes that there is a relationship between business educators' proficient utilization of CBI pedagogical skills and their job performance in colleges of education in Edo and Delta States.

Hypothesis Four

There is no significant relationship between business educators' proficient utilization of CBT pedagogical skills and their job performance in colleges of education in Edo and Delta States.

Table 8: Pearson r showing the relationship between business educators proficient utilization of CBT pedagogical skills and their job performance in Colleges of Education in Edo and Delta States.

Variables	N	$\bar{x}$	SD	R	p-value	Decision
Proficient utilization of CBT	107	2.90	0.85	.156	.108	Not Significant
Job performance indicators		3.32	0.61			

Data in Table 8 show the significant relationship between business educators' proficient utilization of CBT pedagogical skills and their job performance in colleges of education in Edo and Delta States. The Table shows that the correlation coefficient of .156 is positive and low. The data analysis also indicates that means of 2.90 and 3.32, as well as standard deviations of 0.85 and 0.61 are obtained for business educators' proficient utilization of CBT pedagogical skills and their job performance respectively. Since the p-value of .108 is higher than 0.05, the null hypothesis is retained. Thus, that there is no significant relationship between business educators' proficient utilization of CBT pedagogical skills and their job performance in colleges of education in Edo and Delta States.

Hypothesis Five

There is no significant relationship between business educators' proficient utilization of CAD pedagogical skills and their job performance in colleges of education in Edo and Delta States.

Table 9: Pearson r showing the relationship between business educators proficient utilization of CAD pedagogical skills and their job performance in Colleges of Education in Edo and Delta States.

Variables	N	$\bar{x}$	SD	r	p-value	Decision
Proficient utilization of CAD	107	2.71	0.84	.156	.109	Not Significant
Job performance indicators		3.32	0.61			

Data in Table 9 depict significant relationship between business educators' proficient utilization of CAD pedagogical skills and their job performance in colleges of education in Edo and Delta States. The Table shows that the correlation coefficient between business educators' proficient utilization of CAD pedagogical skills and their job performance is .156 which is positive and low. The data analysis also shows that means of 2.71 and 3.32 as well as standard deviations of 0.84 and 0.61 are obtained for business educator's proficient utilization of CAD pedagogical skills and their job performance respectively. Since the p-value of .109 is higher than 0.05, the null hypothesis is retained. Consequently, there is no significant relationship between business educators' proficient utilization of CAD pedagogical skills and their job performance in colleges of education in Edo and Delta States.

Hypothesis Six

Proficient utilization of pedagogical ICT Skills (CAL/CAI, CMI, CBI, CBT and CAD) does not significantly predict business educators' job performance in colleges of education in Edo and Delta States.

Table 10: Summary of ANOVA on the multiple linear regression estimate between proficient utilization of pedagogical ICT Skills (CAL/CAI, CMI, CBI, CBT and

CAD) and Business educators' job performance

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	2.878	5	.576		
Residual	36.532	101	.362	1.592	.016
Total	39.411	106			

Table 10 shows that the ANOVA summary of linear regression based on business educators' job performance as predicted by their proficient utilization of pedagogical ICT skills is statistically significant (F (5, 101) = 1.592, p = .016 >.05). Thus, the null hypothesis is not retained. This means proficient utilization of pedagogical ICT Skills (CAL/CAI, CMI, CBI, CBT and CAD) significantly predicts business educators' job performance in colleges of education in Edo and Delta States.

Table 11: Multiple linear regression coefficients on proficient utilization of pedagogical ICT Skills prediction on job performance of Business Educators

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	2.566	.300		8.545	.000
Proficient Utilization of CAL	-.004	.103	-.005	-.038	.970
Proficient Utilization of CMI	.174	.132	.393	1.321	.018
Proficient Utilization of CBI	.057	.161	.055	.350	.727
Proficient Utilization of CBT	.019	.083	.027	.234	.815
Proficient Utilization of CAD	.032	.080	.043	.397	.692

a. Dependent Variable: Job Performance
Note. R = .270; R-square = .073; Adjusted R-square = .027; p <.05

Data in Table 11 show that proficient utilization of pedagogical ICT skills significantly predicted job performance of business educators in proficient utilization of CMI which yielded a p-value of .018; while proficient utilization of CAL/CAI (p = .970); proficient utilization of CBI (p = .727); proficient utilization of CBT (p = .815) and proficient utilization of CAD (p = .692)

are found not to significantly predict the job performance of business educators. The adjusted R square value is .027, which indicates that 2.7% of the variance in job performance is explained by proficient utilization of pedagogical ICT skills of business educators. From the overall model analysis, the null hypothesis is not retained. However, proficient utilization of CMI has more predictive effect on job performance of business educators.

Hypothesis Seven

Male and female business educators do not differ significantly in relationship in the proficient utilization of pedagogical ICT skills and their job performance in colleges of education in Edo and Delta States.

Table 12: Fisher z statistic showing male and female business educators' difference in the proficient utilization of pedagogical ICT skills and their job performance in Colleges of Education

Gender	N	R	Zr	Z. Cal	Z. Tab	Decision
Male	57	0.24	0.24	0.91	1.96	Not Significant
Female	50	0.22	0.22			

Data in Table 12 indicate male and female business educators' difference in the proficient utilization of pedagogical ICT skills and their job performance in colleges of education. The Table shows that the correlation coefficient value of relationship between proficient utilization of pedagogical ICT skills and job performance of male business educators is 0.24 while that of female business educators is 0.22. The z-calculated value of 0.91 is less than the critical value of 1.96 which connotes that the hypothesis is retained. Therefore, male and female business educators do not differ significantly in the proficient utilization of pedagogical ICT skills and their job performance in colleges of education in Edo and Delta States.

Hypothesis Eight

There is no significant difference in the relationship between business educators' proficient utilization of pedagogical ICT skills and their job performance in colleges of education in Edo and Delta States.

Table 13: Fisher Z statistic showing difference between business educators proficient utilization of pedagogical ICT skills and their job performance in Colleges of Education in Edo and Delta States

School Location	N	R	Zr	Z. Cal	Z. Tab	Decision
Edo	27	0.19	0.19	0.75	1.96	Not Significant
Delta	80	0.26	0.26			

Data in Table 13 indicate the difference between business educators' proficient utilization of pedagogical ICT skills and their job performance in colleges of education in Edo and Delta States. The Table shows that the correlation coefficient value of business educators' proficient utilization of pedagogical ICT skills and job performance of business educators in Edo State is 0.19 while business educators in Delta State is 0.26. The z-calculated value of 0.75 is less than the critical value of 1.96 which connotes that the hypothesis is retained. Therefore, there is no significant difference between business educators' proficient utilization of pedagogical ICT skills and their job performance in colleges of education in Edo and Delta States.

Discussion of Findings

The findings of research question one indicated that the level of proficiency of pedagogical ICT skills possessed by business educators in colleges of education in Edo and Delta States was high. This implies that business educators were acquainted and proficient in the pedagogical ICT skills leading to efficiency in instructional delivery and job performance. The findings agrees with those of Wokocha, Appah and West (2019) and Orheruata and Adeleye

(2020) who found that proficiency of pedagogical ICT skills lead to efficiency in job performances.

The result of research question two indicated that the level of utilization of pedagogical ICT skills possessed by business educators in colleges of education in Edo and Delta States was high. This means that business educators possess high pedagogical ICT skills for instructional delivery as well as utilized them to improve on their job performances. The finding corroborates that of Oluwalola and Awodiji (2021) which revealed that high level of utilization of pedagogical ICT skills results to good and high academic performances of students. The findings of Nosakhare (2019) revealed high extent of utilization of pedagogical ICT skills which brings creativity in skills, innovativeness and competencies of employability skills needed in the labour market.

The finding of research question three revealed that the level of job performance of business educators in colleges of education in Edo and Delta States was high. This is in agreement with Igwe and Chukwu (2019) and Charles and Okauru (2014) that the level of job performance of business educators was high.

The test of hypothesis one revealed that there was a significant relationship between business educators proficient utilization of Computer-Assisted Learning(CAL) pedagogical skills and their job performance in colleges of education in Edo and Delta States. This implies that when business educators effectively use CAL pedagogical skills, their job performance improves. This finding aligns with the idea that technology integration in teaching enhances educators' effectiveness. The significant relationship highlighted the need for business educators to be skilled in CAL pedagogical tools to boost job performance, potentially leading to better educational outcomes. This finding corroborates the study of Igberarharha (2020) which revealed that Computer Assisted Instruction (CAI) had significant impact on Business Education students'

learning in tertiary institutions. The findings by Saskatoon Public Schools (2014) reported that Computer Assisted Instruction (CAI) had significant impact among business education students which increases their zeal in learning. In view of the foregoing, CAL significantly influences business educators' job performance in colleges of education in Edo and Delta States.

The test of hypothesis two revealed that there was a significant relationship between business educators' proficient utilization of CMI pedagogical skills and their job performance in colleges of education in Edo and Delta States. This result implies that educators who effectively utilized CMI pedagogical skills tended to have better job performance. This outcome highlighted the value of CMI in streamlining instructional processes, allowing educators to manage their teaching responsibilities more efficiently, potentially leading to enhanced job performance. The significant relationship found in this study emphasizes the need for business educators to be proficient in CMI pedagogical skills, which could ultimately contribute to improved educational delivery and outcomes. This finding aligns with Umoru and Oluwafemi's (2019) findings that CMI is effective in the attainment of goals by business educators in their job performance. The finding also agrees with that of Salako, Solomon, Garba and Muhammad (2020) that business educators' who use Computer Managed Instruction (CMI) in their job performance taught better than Conventional Teaching Method (CTM).

Hypothesis three testing depicted that there was a relationship between business educators' proficient utilization of CBI pedagogical skills and their job performance in colleges of education in Edo and Delta States. This indicated that educators who effectively integrated CBI pedagogical skills into their teaching practices exhibited better job performance. The significant relationship found in this study underscored the importance of equipping business educators' with the necessary skills to proficiently utilize CBI pedagogical tools, which can ultimately contribute to their job performance and overall quality of education. This finding is in

agreement with that of Albirini (2021), which found that educators' proficiency in technology-based instructional methods significantly impacted their job performance and effectiveness. The findings of Ojianyaegbu (2021) agreed that business educators are trained and retrained on instructional needed in the utilization of CBI pedagogical skills in their job performance.

Hypothesis four testing revealed that there was no significant relationship between business educators' proficient utilization of CBT pedagogical skills and their job performance in colleges of education in Edo and Delta States. This result is consistent with the work of Oyelekan and Olorundare (2021), which found that educators' use of CBT did not significantly impact their overall job performance, suggesting that CBT utilization may be more narrowly focused on assessment processes rather than broader aspects of job performance. This lack of significant relationship found in this study implies that while CBT is an important tool for assessment, its proficient utilization may not directly influence business educators' job performance in the study context. This result is further supported by Eze and Omeh (2022), who also found no significant correlation between business educators' CBT utilization skills and their job performance, suggesting that factors other than CBT proficiency may have more substantial influences on job performance.

The test of hypothesis five revealed that there was no significant relationship between business educators' proficient utilization of CAD pedagogical skills and their job performance in colleges of education in Edo and Delta States. This result is consistent with the work of Udoh and Adeyinka (2021), which found no significant correlation between educators' CAD utilization skills and their overall job performance, suggesting that CAD proficiency may not be a critical factor influencing job performance in this context. The lack of a significant relationship found in this study implies that while CAD was a valuable tool in specific technical fields, its proficient utilization may not directly impact business educators' job performance in this studied context.

This finding negates the view of Mohamed and Mohamed (2021) who observed that CAD must be properly utilized by business educators in the performance of job adding that if they are not properly utilized, affect the students learning process which could result to low performance in students.

Hypothesis six testing revealed that proficient utilization of pedagogical ICT Skills (CAL/CAI, CMI, CBI, CBT and CAD) significantly predicted business educators' job performance in colleges of education in Edo and Delta States. This result is supported by the work of Adu and Olatunji (2022), which found that educators' proficient utilization of a broad range of pedagogical ICT skills collectively significantly influenced their job performance, suggesting that a comprehensive approach to ICT integration was crucial for enhancing educators' effectiveness. The significant predictive relationship found in this study underscored the importance of equipping business educators with a diverse set of pedagogical ICT skills to optimize their job performance. Ezenwafor and Ugwu (2018) argued that pedagogical skills affect job performance positively and that proficient utilization of pedagogical ICT will enhance innovation as well as job creation of business educators. This finding also corroborates the study of Saygill (2017) which reported that these pedagogical ICT skills were proficient as well as problem solving skills needed for creativity, innovativeness and easiness to attain the educational objectives.

The test of hypothesis seven indicated that the male and female business educators do not differ significantly in the proficient utilization of pedagogical ICT skills on their job performance in colleges of education in Edo and Delta States. This means that both male and female business educators can utilize pedagogical ICT skills proficiently. This is however in contrast to the findings of Nwachukwu (2022) which reported that there was a significant difference between male and female teachers on proficient utilization of ICT skills for instructional delivery. The

probably explanation for this is that the experiences of the male and female teachers in the case of Nwachukwu were different. That means that it is likely that either the male teachers or female teachers were more competent in the proficient utilization of pedagogical ICT skills on their job performance or instructional delivery. The findings corroborate the findings of Nwosu and Ogbomo (2020),that there was no significant gender differences in educators' utilization of pedagogical ICT skills and its impact on job performance, suggesting that both male and female educators' can equally leverage ICT skills to enhance their job performance. The lack of significant gender differences found in this study may imply that gender may not be a determining factor in the proficient utilization of pedagogical ICT skills among business educators in the studied context.

The test of hypothesis eight showed that there was no significant difference between business educators' proficient utilization of pedagogical ICT skills and their job performance in colleges of education in Edo and Delta States. This means that business educators in the institutions properly and adequately utilized pedagogical ICT skills in their job performance or instructional delivery. This shows that business educators in the colleges of education had developed and were proficient in the utilization of pedagogical ICT skills. This result is supported by Ogbuago and Okonkwo (2019), who found no significant correlation between educators' proficient utilization of pedagogical ICT skills and their job performance in specific institutional context, suggesting that institutional factors or other variables may play a more critical role in determining job performance in these settings.

CHAPTER FIVE

SUMMARY, CONCLUSION AND RECOMMENDATIONS

This chapter covers summary of the study, conclusion drawn, recommendations and suggestions for further study:

Summary

The study determined the perceived business educators' proficient utilization of pedagogical ICT skills and their job performance in colleges of education in Edo and Delta States. Ten (10) research questions guided the study while three were answered. Eight hypotheses were formulated and tested at 0.05 level of significance.

The study employed descriptive correlational survey research design. The population of the study comprised all the business educators' in colleges of education in Edo and Delta States, Nigeria. The total number of business educators in these colleges of education is one hundred and seven (107). The sample size of the study was 107 business educators in Edo and Delta States. As a result of the limited number of respondents, the entire population was used as the sample size hence a census.

The instrument was segmented into two main parts, Part A and Part B. Part A dealt with the bio-data of the respondents such as location of institution, state and gender, while Part B was subdivided into two sections, Section A and Section B. Section A had three clusters with 32 items measuring level of Proficiency on pedagogical ICT skills, Level of utilization of pedagogical ICT skills and Job performance indicators and they were rated on four point scale ranging from Very High Extent VHE(4), High Extent HE(3), Low Extent LE(2) to Very Low Extent VLE(1) while Section B had five clusters with 28 items on Proficiency and utilization of CAL/CAI, CMI, CBI, CBT and CAD and they were rated on four point scale ranging from Strongly Agree SA(4), Agree A(3), Disagree D(2) to Strongly Disagree SD(1). The validity of

the instrument for data collection was determined by the researcher's supervisors, two (2) other experts from the Faculty of Vocational and Technical Education and one psychometrician from Department of Educational Evaluation and Counseling Psychology (EECP) from University of Benin, Benin-City.

To establish the reliability of the instrument, it was pilot tested once on twenty respondents' business educators in Federal College of Education, Omoku, Rivers State who were not part of the study. Thereafter, Cronbach alpha statistics was used to determine the internal consistency of the instrument and the reliability coefficient values obtained were 0.94 for level of proficiency and utilization of pedagogical ICT skills and 0.74 for business educators' job performance. Data collected were analyzed using mean ($\bar{x}$), standard deviation (SD), Pearson Product Moment Correlation Coefficient (PPMCC), Multiple Regression Analysis and Fisher z statistics with the statistical package for the social science (SPSS) version 25. The findings generally showed that there was a significant relationship between business educators' proficient utilization of pedagogical ICT Skills and their job performance in colleges of education in Edo and Delta States. Further findings of the study were as follows:

1. The level of proficiency of pedagogical ICT skills acquired by business educators in colleges of education in Edo and Delta States was high.
2. The level of utilization of pedagogical ICT skills acquired by business educators in colleges of education in Edo and Delta States was high.
3. The level of job performance of business educators in colleges of education in Edo and Delta States was high.
4. There was a significant relationship between business educators' proficient utilization of CAL/CAI pedagogical skills and their job performance in colleges of education in Edo and Delta States.

5. There was a significant relationship between business educators' proficient utilization of CMI pedagogical skills and their job performance in colleges of education in Edo and Delta States.
6. There was a significant relationship between business educators' proficient utilization of CBI pedagogical skills and their job performance in colleges of education in Edo and Delta States.
7. There was no significant relationship between business educators' proficient utilization of CBT pedagogical skills and their job performance in colleges of education in Edo and Delta States.
8. There was no significant relationship between business educators' proficient utilization of CAD pedagogical skills and their job performance in colleges of education in Edo and Delta States.
9. Proficient utilization of pedagogical ICT skills (CAL/CAI, CMI, CBI, CBT and CAD) significantly predicted business educators' job performance in colleges of education in Edo and Delta States.
10. Male and female business educators did not differ significantly in the proficient utilization of pedagogical ICT skills and their job performance in colleges of education in Edo and Delta States.
11. There was no significant difference between business educators' proficient utilization of pedagogical ICT skills and their job performance in colleges of education in Edo and Delta States.

Conclusion

This study highlights the significance of proficient utilization of pedagogical ICT skills for business educators' in colleges of education. The findings suggest that business educators'

proficiency in pedagogical ICT skills is positively correlated with their perceived job performance. Also, there is significant relationship between business educators' proficient utilization of pedagogical ICT skills and their job performances in colleges of education in Edo and Delta States, Nigeria. Therefore, it is crucial for business educators to develop and maintain strong pedagogical ICT skills to enhance their teaching effectiveness, improve students learning outcomes, and ultimately, boost their job performance. Management of colleges of education can support business educators' in this endeavour by providing training opportunities, resources and infrastructure to facilitate the proficient utilization of pedagogical ICT skills.

Recommendations

Based on the findings of the study and the conclusions drawn, the following recommendations are made:

1. Management of colleges of education should sustain, maintain and promote the high levels of proficiency, utilization and job performance among business educators through continuous professional development.
2. Management of colleges of education should provide regular professional development programmes, workshops and training sessions to enhance business educators' proficiency in utilizing CAL/CAI, CMI and CBI pedagogical skills.
3. Management of colleges of education should emphasize the integration of CAL, CMI and CBI pedagogical skills into business education programmes to equip educators with necessary skills to excel in their roles.
4. Management of colleges of education should provide support for business educators' to enhance their CBT and CAD skills focusing on practical applications and relevance to their instructional delivery.

5. The management of colleges of education should review the curriculum for business education programmes to ensure that CBT and CAD skills are aligned with industry needs and job requirements and those educators' are equipped to effectively integrate these skills into their teaching practices.
6. Management of colleges of education should provide equal opportunities for ICT training and development to all business educators, regardless of gender to further enhance their proficiency and job performance.
7. Management of colleges of education should focus on merit-based evaluations and support systems rather than gender, to promote and recognize business educators' proficient of pedagogical ICT skills and job performance.

Contributions to Knowledge

This study has added value to knowledge in the following ways:

1. The study has empirically established that there is a relationship between business educators' proficient utilization of pedagogical ICT Skills and their job performance in colleges of education in Edo and Delta States, Nigeria.
2. The study has equally proven through the provision of empirical data that the level of business educators' job performance is relatively high.
3. The study has shown empirically that the level of proficiency of pedagogical ICT skills possessed by business educators in colleges of education in Edo and Delta States is relatively high.
4. The study has demonstrated empirically that the level of utilization of pedagogical ICT skills possessed by business educators in colleges of education in Edo and Delta States is high.

5. The study has proven empirically that the level of job performance of business educators in colleges of education in Edo and Delta States is relatively high.
6. The study has proven empirically that proficient utilization of pedagogical ICT Skills (CAL/CAI, CMI, CBI, CBT and CAD) significantly predict business educators' job performance in colleges of education in Edo and Delta States.

Implications of the Study

The findings of the study have implication on administrators and business educators.

i. There will be professional development. This implies that business educators 'need continuous training and professional development to enhance their pedagogical ICT skills, ensuring proficient utilization and optimal job performance.
ii. There will be need for college administrations to invest in ICT infrastructure and provide training opportunities to support business educators in developing their pedagogical ICT skills, ultimately boosting job performance.
iii. College Administrators need to allocate resources (funding, training opportunities) to support business educators in developing their pedagogical ICT skills.
iv. By developing proficient pedagogical ICT skills, business educators' may experience improved job satisfaction, as they become more confident and effective in their roles.

Suggestions for Further Studies

The following suggestions are considered valuable for further studies by researchers who may be interested in the topic:

i. Proficient utilization of pedagogical ICT skills and perceived business educators' job performance in colleges of education in South-East Geopolitical Zones in Nigeria.

ii. Proficient utilization of pedagogical ICT skills and perceived job performance of business educators in private and public colleges of education in South-West Geopolitical Zone.

iii. Proficient utilization of ICT facilities and job performance of Office Technology and Management lecturers in polytechnics in North-East Geopolitical Zone.

References

Abdulahi, R. & Tukur, M. (2014). Application of computer aided design and drafting in Technology Education for Sustainable Development.

Abdullahi, A.Y. and Tukur, A. K (2014). Impact of computer-assisted instruction (CAI) and school type on students' academic performance in basic technology. A paper presented at the 35th Annual Workshop and Conference of Nigeria Association of Educational Media and Technology (NAEMT), University of Port-Harcourt. Retrieved https://www.slideshare.net.

Abdullahi, Y. & Peter, A. (2020). Researched computer aided design and drafting skills for effective TVET programme in tertiary institutions in Kano State, Nigeria.

Abhilash, M. (2020).Computer based test: The need for conducting computer based examinations. Retrieved. blog.mettl.com

Abimbola, O.A. (2019). Imperatives of using interactive multimedia in the teaching and learning of business studies in Nigerian junior secondary schools*, Nigerian Journal of Business Educators (NIGJBED) , 6*(1), 757- 765.

Albirini, A. (2021). Teachers' attitudes towards Information and Communication Technologies: The case of Syrian EFL teachers, *Computer & Education, 47*(4), 373-398.

Abubakar, L. & Abubakar, S. K. (2022). Relationships among ICT training, skills acquisition, use and job performance of library personnel in universities in North-West Nigeria. Library Philosophy and Practice (e-journal) 4917. https://ddigitalcommons.unl.edu/ libphilprac/4917.

Abumustafa, O.A. (2020). Computer based testing and its impact on business educators' job performance*, Journal of Education and Human Development, 3*(2), 120-126.

Adebowale, O.F.,Adewale, I.A.,& Oyeniran,S.O.(2021). Fender differences in the use of pedagogical ICT skills among Nigerian educators, *International Journal of Education and Development using ICT, 6(*2), 45-58.

Adu, E.O. & Olatunji, O.O. (2022). Pedagogical ICT skills and job performance of educators in Nigerian colleges of education: A predictive analysis, *Journal of Educational Computing Research, 62*(3), 567-585.

Agbonaye, A.J. & Akele, E.F. (2018). Business educators training needs in universities in South-South Nigeria for Sustainable Development, *Nigerian Journal of Business Educators (NIGJBED) , 5*(2), 233- 242.

Agim V. U., Ochui, M. O. & Atah, C. A. (2020). Assessment of availability of new technologies in delivery business education content in tertiary institutions in Cross River State *British International Journal of Education and Social Science, 7*(10), 1-9.

Ajunwo, F.O. (2017). Utilization of computer applications in teaching business education in Rivers State universities. https://seahipaj.org

Akeke, M. N. G & Kolo, I. (2019). Leadership roles in quality assurance in business education: Issues, trends and strategies. *Association of Business Educators of Nigeria (ABEN)*, *6* (1), 211-217.

Akmigbo, I., Orji, N.O; Charles, E & Umeh, I. (2010). The use of computer assisted instruction in teaching and learning in secondary schools.

Akwara, N. F. & Baba, E. I. (2019). E-learning problems and prospects in tertiary institutions in Nigeria: The way forward. Delta state*: Association of Business Education Journal, 9*(2), 217-222.

Aliu, E. (2016). Foundation of technical and vocational education, Benin City: Supreme Idea Publishers.

Amaewhule, W. A. & Appah, C. (2019). Utilization of information and communication technology for job delivery by business educators in tertiary institutions in Rivers State, *International Journal of Innovative Information Systems & Technology Reasearch, 2* (7), 34-40.

Anderson, T. (2019). Learning technology through three generations of technology enhanced distance education pedagogy. Retrieved. *European Journal of Open, Distance and E-Learning*. https://www.saide.org.

Aninye-Ranor, C. L. (2019). Evaluation of OTM graduates job performance in selected government establishments in Delta State, *National Association of Business Educators of Nigeria, 6*(1), 418-424.

Atakpa, I. (2018). Enhancing quality e-learning in business education programme in Nigeria: A pragmatic approach.

Atika, Q. & Najmul, H. & Olusola, A. & Glenn, H. & Ronny, S. & Yeahia, S. & Sanjoy, K.&Jaafar, Z. M. (2021). Gender differences in information and communication technology use & skills: a systematic review and meta-analysis.

Ayeni, A. J. & Ogunbaru, M. (2021). Effective utilization and maintenance of ict facilities for quality teaching and learning in secondary schools in Ondo State, *International Journal of Research in Education Technology, 1*(1), 1-13.

AZ Research Consult (2022), Computer Aided Learning of Mathematics for senior secondary school Nigeria.

Balaraba, Y. (2018). Information and Communication Technology facilities and their utilization for educational purpose in Nigerian universities: A review of literature from 2004-2018.

Bandele, S.O. (2019). Evaluation of general studies computer based tests in universities in South West Nigeria, *International Journal of Interdisciplinary Research Method*, *6*(3), 19-28*,* August 2019.

Becta, A. (2017). British educational communications technology agency: harnessing technology review; progress and impact of technology in education, *An interdisciplinary Journal on Humans in ICT Environments,1*(2), 117-156.

Bennett, R. E. (2015). The changing nature of educational assessment. *Review of Research in Education, 39* (1), 370-407.

Bessong, E. B; Atah, C.A. & Ititim, D.U. (2019). Influence of intranet and telecommunication facilities among administrative staff of vocational education in tertiary institutions in Cross River State, Nigeria*. International Journal of Education and Evaluation, 5(*3), 84-95.

Brain, W. (2020). Physical education teaching and training on computer assisted instruction (CAI). https://iopscience.iop'org.

Campbell (2019). Job Performance: Why task and contextual performance Matter. https://www.ckju.net>dossier>job.

Chalmers, A. & Wright, T. (2018). Effect of computer assisted instruction (CAI) on students' performance in economics in senior secondary schools in Ekiti State, Nigeria. nigjbed.com.ng.

Charles, P.A. & Okauru, I. F. (2014). ICT competence and lecturers' job efficacy in universities in Cross River State, Nigeria, *International Journal of Humanities and Social Sciences, 4*(10), 259-266.

Chen, K. T. (2017). An exploratory study of NNES graduate students' reading comprehension of English journal articles, *Reading in a Foreign Language, 29*(1), 20-35.

Chukwurah, C. & Atah, C. A. (2018). Influence of student-teacher relationship and instructional facilities on employability skills acquisition among business education students in tertiary institutions in Cross River State, *British International Journal of Education and Social Sciences, 6*(5), 1-9.

Chukwurah, C. & Atah, C. A. (2019). Rebranding entrepreneurship education in Nigerian tertiary institutions for national economic development . *Nigerian Journal of Business Education (ABEN), 6* (2), 41-50.

Daniel, D. (2018). Computer managed instruction (CMI) on Refining the Quality of Teaching and Learning*, International Journal of Educational Technology, Indian 6*(2), 35-43.

Daramola, F. O. (2019). Impact of computer based test in Nigeria tertiary institutions: A theoretical view*, International Journal for Innovative Integration in Education*, 5(3), 26-32.

Davis, F. D., Bagozzi, R. P. & Warshaw, P. R.(1989). User acceptance of computer technology: A comparison of two theoretical models, *Journal of Management Science, 35*(8), 982-1003.

Davis, F. (1986). Original technology acceptance model. https://www.researchgate.net

DEEWR (2009). Conceptualizing and defining pedagogy. https://www.iosrjournals.crg.au

Edeh, M. O; Sharma, A; Nwafor, C.E; Fyneface, A.G; Sen, S. & Edeh, E. C. (2020). Impact of emerging technologies on job performance of educators in selected tertiary institutions in Nigeria, *The Journal of Computer Science and its Applications ,27*(1), 53-62.

Ediagbonga, K. (2023). Perception of students on computer based tests (CBT) in Nigeria university.

Edwin, A. P. (2020).What is pedagogy and methodology in education. https://www.britannica. com.

Egbiri, J.N. & Emefiele, D. N.(2021). Influence of job design on job performance of business educators in colleges of education, *Technical and Vocational Education Journal(TAVEJ), 7(*3), 48-55. University of Benin, Benin City.

Ehosa, et al. (2017). The influence of computer aided design (CAD) on students creativity in architectural schools.

Emaikwu, S.O. (2019). Assessing the relative effectiveness of three teaching methods in the measurement of students' achievement in Mathematics, *Journal of Emerging Trends in Educational Research and Policy Studies, 3*(4), 470-486.

Emelogu, N.U.; Nwafor, C.K.; Okoyeukwu, N.G. & Kingsley, O. E.(2021). Awareness, proficiency and challenges in the use of emerging technologies by ESL university lecturers in the post covid-19 era .

Ene, E., & Upton, T. A. (2018). Synchronous and asynchronous teacher electronic feedback and learner uptake in ESL .*Composition. Journal of Second Language Writing, 4*(1), 1-13. https://doi.org/10.1016 /j.jslw.2018.05.005.

Etonyeaku, C.U. (2019). Business education and value orientation for national economic empowerment and development paper presented at the Owo, 2006 .*Annual Conference of Association of Business Educators of Nigeria (ABEN).*

Ezeani, N.S. (2012). The teacher and skills acquisition at business education: From the perspective of accounting skills, *Arabian Journal of Business and management, 2(*4), 25-36.

Ezenwafor, J. I. & Hafsat, O. A. (2017). Relationship between business educators' perceived administrative leadership style and their job performance in tertiary institutions, *NAU*

Journal of Technology & Vocational Education, 2(1), 54-62, Taraba State. https;//www.naujtved.com.ng.

Ezenwafor, J. I. & Nwachukwu, S.C. (2020). Extent of utilization of e-learning resources for instructional delivery by office technology and management lecturers in polytechnics in South-East Nigeria, *International Research Journal of Teacher Education, 5*(1), 84-93.

Ezenwafor, J.I. & Ugwu (2018). Perceived effects of computer assisted instruction (CAI) on students' acquisition of keyboarding skills in colleges of education in south west, Nigeria, *Journal of Technology & Vocational Education, 9(*1), 208-216.

Ezenwafor, J. I. (2019). Adequacy of exposure to Information and Communication Technology graduating business education students of tertiary institutions in Anambra state. A paper presented at the 23rd national and 2nd international conference of ABEN held at the University of Lagos on the 11th – 15th October.

Eze, S.C. & Omeh, A. A. (2022). Assessing the relationship between computer-based testing skills and job performance of educators in tertiary institutions*, International Journal of Education and Development using Information and Communication Technology, 13(*2), 45-58.

Fagbola, F.O. (2021). Assessment of computer based test in Nigeria Tertiary Institutions: A case study of a computer based examination system, *International Journal of for Innovative Technology Integration in Education, 1*(10),109-115.

Fan, N. & Ma, Y.(2018). Correlations between computer aided instructions integrated environmental education and students' learning outcomes and environmental literacy, *EURASIA Journal of Mathematics, Science and Technology Education, 16*(6), 2-7.

Federal Republic of Nigeria (2020). National Policy on Education, Lagos NERDC Press.

Global Academic Publisher (2021). Definitions of pedagogy in diverse ways: what is pedagogy. https://www.igi-global.com/dictionary/evaluation-course-curriculum-teaching/22169 https://www.google.com/search?q=igi+in+global+international+academic+meaning+of+pedagogy.

Global Academic Publisher (2021). What is information and communication technology (ICT)?https://www.google.com/search?q=igi+in+global+international+academic+meaning+of+ict

Godwin, E. O. & Adagba, O. (2021). The role of colleges of education in national development: An appraisal of the Nigeria experience.

Hassan, I. & Mohamed, A. U. (2023). Utilization of information and communication technology (ICT) for teaching and learning of science and technical subjects in senior science and

technical colleges for sustainable economic development, *International Journal of Innovative Information Systems and Technology Research 11*(1), 41-53.

Honeycutt, J.K. (2014).The effects of computer managed instruction on content learning of undergraduate students orange county department of education, California.

Honeycutt(2014).Computer assisted instruction (CAI): Pros and cons. https://www. bairesdev.com. https://www.google.com/search?q=parameters+for+measuring+workers+job+performance +in+colleges+of+education

Igberaharha, O. C. (2020). Computer assisted instruction (CAI) in learning of final accounts by business education students in Delta State tertiary institutions.

Igoke, D. (2015). Elements of guidance, vocational and career education, Benin City: Summer Educational Publishers.

Igwe, K.O. & Chukwu, C. M. (2019). Peceived effect of technotress on the job performance of secretaries in business organisations in Abakaliki Metropolis in Ebonyi State, *Nigerian Journal of Business Education, 6(*2), 215-224.

Ile, C.M. & Edokpolor, J. E. (2021). Job resources and task performance of business educators in public universities, *Journal of Business Education(NIG.JBED), 8* (3), 104-114 .

IT Law Wiki (2021). Definition, education, computing. https://itlaw.fandom.com/wiki/ computer-managed instruction.

Iwuoha, C.U. & Peters, C.B. (2019).Improving business education programme through school industry collaboration for capacity building. *Journal of Business Educators of Nigeria, 6*(2), 34-40.

Janalta, I. (2021).What does job performance mean? https://www.workplacetesting. com/definition/4060/job-performance.

John, N. & Harrison, W. T. (2018). The effects of drill-and-practice computer instruction on learning basic mathematics. *Journal of Computing in Childhood Education*, *6*(9), 349–356

Johannes, O.O. (2014). Education and information and communication technology (ICT) in Nigeria educational system, *Journal of Qualitative Education, 9*(3), 1-14. https://www.globalacademicggroup.com/journals/qualitative education/Johnny 3.pdf

Kupur, R. (2021). Understanding the meaning and significance of pedagogy. https://www.google.com/search?q=kupur+meaning+and++significance+of+pedagogy

Khaled, A. & Haneen, O. (2017). The influence of work environment on job performance: A case study of engineering company. *International Journal of Applied Engineering Research, 12*(24), 15544-15550. http://www.ripublication.com.

Khoshsima, H. & Toroujeni, S.M. (2021). Technology in education: Pros and cons of using computer in testing domain, *International Journal of Language Learning and Applied Linguistics World (IJLLALW), 14*(2), 32-48.

Kehinde, E.E. (2021). Self-management and problem solving skills required of business educators for job performance in tertiary institutions, *Association of Business Educators of Nigeria, Rivers Business Education Journal, 3*(1), 38-50.

Lisbdnetwork(2016). Information and communication technology: Concept and definition. https://www.lisednetwork.com.

Mastersoft (2021).What is pedagogy? Importance of pedagogy in teaching and learning process. https://www.iitms.co.in.

Mohamed, A. E. K. & Mohamed, W. I. K. (2021).The impact of using computer-aided design (CAD) on the creativity of architecture students, *Journal for Educators, Teachers and Trainers 14*(4), 245-256.

Mat (2015) : Know the difference between computer based and paper based test

Majuto, M. & Gilbert M. (2015). The use of ict between male and female teachers in secondary schools in Tanzania, a case of Dodoma Municipality. *International Journal of Education and Research*, 3(12), 417-428.

Maduabuchi, I. (2018). A critique of the new curriculum of office technology and management, *Business Education Journal, 6*(2), 209-220.

Mbagwu, F. (2019). Possession of ICT skills a prerequisite for effective knowledge sharing.

Mercer and Mettle (2021) Definition and benefits of computer based test. https://blog.mettl. com/computer-based-test/

Michael, J. P. & Igenewari, L. S.(2022). Assessment of computer based instructional (CBI) techniques in the teaching of computer studies in Rivers State Senior Secondary Schools, *International Journal of Scientific and Research Publications, 12*(2), 376-386**.**

Nana, O. B. (2020). Computer-assisted instruction in the teaching and learning of History: A systematic review in Africa.

National Board for Technical Education (2016) Scope of Business Education in Nigeria. https://infoguidenigeria.com › Education.

National Policy (2019). Information and communication technologies (ICT) in education. https://education.gov.ng/wp-content/uploads/2019/08/National-Policy-on-ICT- in-Education-2019.pdf

Nosakhare, R. (2019). Benefits of digital learning in acquiring 21st century skills, Akure : JK Publishers.

Nwachukwu, P. O. (2014). Appraising the relationship between ICT usage and integration and the standard of teacher education programs in a developing economy, *International Journal of Education and Development using ICT (IJEDICT), 2*(3), 70-85 .

Nwankwo, A. F. (2017). Impact of information and communication technology on tertiary institutions. https://www.bsum.edu.ng.

Nwachukwu, R.(2022). Benefits of digital learning in acquiring21st century skills, Akure: JB Publishers.

Nwosu, O.O. & Ogbomo, E.F. (2020). Gender differences in the utilization of pedagogical ICT skills and job performance of educators' in Nigerian tertiary institutions*, International Journal of Education and Practice, 6*(2), 15-28.

Ogiagah, J. O. & Ofule, A. C. (2014). Global influence of information and communication technology on education amidst covid-19 Pandemic. *International Journal of Innovative Social & Science Education Research*, 9(3), 72-79.

Ogbuagu, F.C. & Okonkwo, C.A. (2019). Examining the relationship between pedagogical ict skills and job performance of business educators in colleges of education in Nigeria, *International Journal of Educational Research and Practice, 6*(3), 45-58.

Ojianyaegbe, I. (2021). Assessment of training and development on job performance of business education lecturers in colleges of education, *Journal of Business and Vocational Education, 1*(9), 24-32.

Okauru, I. F. (2011). Definitions of ICT/IT. What are the similarities and differences in definitions?

Okoli, B.E. (2020). A case of entrenchment of information and communication literary in business education programme, *Journal of Vocational and Adult Education, 7*(1), 82-87.

Okolocha, C.C. & Nwadiani, C.O.(2015).Assessment of utilization of ICT resources in teaching among tertiary institution business educators in south Nigeria, *Journal of Education and Learning, 4*(1), 1-10.

Okonkwo, M.U.& Odimmega, C.G. (2021). Business educators' utilization of instructional technology for quality teaching of business education in tertiary institutions in Anambra State.

Okoro, J. (2018). Strategies for enhancing the teaching of ICT in business education programmes as perceived by business education lecturers in universities in south-south Nigeria, *International Journal of Education Studies, 6*(10), 78-89.

Okoro, J.(2015).Strategies for enhancing the functionality of business education in the universal basic education in south-south Nigeria, *Journal of Education and Practice, 4*,(17), 123-143.

Okpara, P. (2014). Assessment of training and development on job performance of business education lecturers in colleges of education, *Nigerian Journal of Business Education, 1*(9), 34-40.

Okoye, A. C. (2018). ICT skills required of business educators for effective entrepreneurship education in tertiary institutions in Anambra State, *Nigerian Journal of Business Education (NIGJBED), 5*(1), 184-194.

Okoye, N.S. & Ughamadu, O.(2017). Principles, methods and strategies for effective teaching. publisher : Kmensuo Educational Publishers Onitsha/Agbor.

Okpokwasili, N.P. (2018). Information systems application skills required of secretaries for job performance in e-world parastatals in Rivers State, *International Journal of Innovative Information Systems & Technology Research, 6*(3), 16-24.

Olafare, F.O., Lawrence, O.A. & Fakorede, S.O.A.(2017). Colleges of education lecturers attitude towards the use of information and communication technology in Nigeria, *Malaysian Online Journal of Educational Sciences*, 5(4), 1-12.

Olafare, F.O; Akinose, S.O; Omotunde,C. & Annenne, V.(2017). Students' perceptions of computer-based test in Nigerian universities, *Nigerian Journal of Educational Technology, 1*(2), 117-129.

Olaitan, A. (2013). Proficiency improvement needs of teachers for effective teaching of agriculture curriculum in junior secondary school. https://www.researchgate.net

Olatunji, O.O. & Ojo, O.O. (2021). Gender differences in pedagogical ICT skills Utilization : A Nigerian perspective , *Journal of Educational Technology Development and Exchange, 5*(1), 12-25.

Ololube, N.P. (2021). Appraising the relationship between ICT usage and integration and standard of teacher education programmes in a developing economy, *International Journal of Education and Development, 2*(3), 1-16.

Olorunsola, E.O. (2013). Components of job performance as predictors of job performance of administrative staff in south west Nigeria universities, *International Journal of Business and Social Science, 4*(10), 285-288.

Olusean, D. & Emmanuel, E. (2016). Information and communication technology: Catalyst for enhancing the intellectual capacities of educationists and closing observed skill gaps of graduates in higher education in institutions in Nigeria, *American Journal of Engineering Research, 3*(2), 217-229.

Oluwalola, F. (2020). Accessibility of information and communication technology (ICT) tools to business education lecturers and students. https://uilspace.unilorin.edu.ng

Oluwalola, F.K. & Awodiji, O.A. (2021).Availability and utilization of e-learning facilities for management and business courses in universities in Kwara State, Nigeria, 6(2), 346-357.

Omoigui-Okauru, O. (2016). Information and communication technology (ICT) in education https://www.researchgate.net/publication/360963237_Information_and_Communication Technology.

Onasoga, O.T. (2015).Information and communication technology (ICT) : A veritable tool for national development, *5*(2), 165-174.

Onnoh, G. O. & Adebayo, M. A. (2020).Competency needs of business educators, 13(2),80-87

Onokpanu, E. & Azu, I. (2019). Adequacy of exposure to ICT by graduating business education students of tertiary institutions in Anambra State, *Business Education Journal*, *8*(2), 45-60.

Onuekwa, F.A. & Adizi, E.N. (2018). Studied training skills required by business education, lecturers for effective teaching of business courses in tertiary institutions in Rivers State.

Orana, S. (2020). What do we mean by 'pedagogy' in sustainability education? Pg114-129, accepted 27 November, 2019 and Published 6th January, 2020.

Orheruata, J.E. & Adeleye, E. O. (2020). Assessment of quality of office technology and management(OTM) programmes in higher institutions in Borno and Yobe States, *Association of Business Educators of Nigeria Journal, 6*(1), 145-153.

Oviawe, J. I. & Ojo, K. E. (2010). Importance of information and communication technology in TVE for Students Acquisition of Workplace skills. https://www.semanticscholar.org

Owenvbiugie, R.O. & Ebohomien, S.E.(2021).The effect of computer assisted instruction (CAI) on secondary school students' academic achievement in Business Studies in Edo State. Technical and Vocational Education Journal (TAVEJ), 7(4), 27-36.

Oyelekan, O.S. & Olorundare, A.S. (2021). Investigating the impact of computer-based testing on teachers' job performance in Nigerian secondary schools. *Journal of Educational Technology Development and Exchange, 6*(1), 15-28.

Oyindoubra, D. (2022). Computer aided design (CAD) skills needed by building technologist in polytechnics for job placement in Rivers State, *International Journal of Contemporary Research,3*(2), 128-132 .

Paul, B. (2021). Computer-assisted learning: Pros and cons. Retrieved https://www.bairesdev. com/blog/computer-assisted-learning-pros-and-cons/.

Peretomode, V. F. (2016). Training and utilization of staff and job performance in post primary education board, *Journal of Economics and International Finance, 3*(5), 279-288.

Peter, O. O. (2022). business education lecturers' utilization of digitalized teaching resources for OTM Skills Acquisition in Colleges of Education in Delta State.

Polit, S. D., Kaduhur, B. D. & Ayuzakka, D. (2020). Utilization of information and communication technology competencies by mechanical trades teachers of technical colleges in Plateau State, *Nigerian Journal of Business Education,6(*2), 24-33.

Pratt, M. (2019). Significance of information and communications technology or technologies in enterprises. tecttarget.com.

Richard, O. A. & Ogwu, E.N. (2019). Computer based test (CBT), innovative assessment of learning prospects and constraints among undergraduates in university of Nigeria.

Root, J. R; Stevenson, B. & Davis, L. L. (2017). Computer-assisted instruction to teach academic skills.https://www.link.springer.com/referenceworkentry/10.1007%

Saad, N., & Sankaran, S. (2020). Technology proficiency in teaching and facilitating. Oxford university press.

Salako, E. A., Solomon, A. A., Muhammad, B.A. & Garba, S. (2020). Effectiveness of computer-managed instruction on students' performance in tertiary institutions.

Samuel, O. E.; Igwe, N. J. & Okafor, A. E. (2021). Perceived effectiveness of computer-based test examination mode for large classes among undergraduates of Nigerian universities: Implications for social work*, Journal of Social Work in Developing Societies, 3*(1), 62-77.

Samson, E. (2019). A computer based test with messaging delivery features and overview of computer based test.

Saskatoon Pubic Schools (2014). Computer assisted instruction. Retrieved on the 23'.1 of May2014 from www.olc.spsd.sk.ca/ ..lindex.html.

Saygill, S. (2019). Self-management and problem solving skills required of business education students in colleges of education for job performance in an organization. *Association of Business Educators of Nigeria, 6*(1), 340-347.

Serin, O. (2021). The effects of the computer-based instruction on the achievement and problem solving skills of the science and technology students, *The Turkish Online Journal of Educational Technology, 10*(1), 183-201.

Shah, R. K. (2021). Revising concept, definition of pedagogy and forms of pedagogy, Tribhuvan university, Sanothimi Campus.

Skill Touch ICT Services (2021). Computer-aided design -definition and meaning. https://skilltouchng.com/computerschool/23-blog/article-ict-cat/62-computer-aided-design

Sofiyatul, F. & Nujmatul, L. (2017). The analysis of computer based test (CBT) implementation: A phenomenological study, *Journal of Accounting and Business Education, 2*(2), 310-319. Universities Negeri Malang.

Soydal, İ., Alır, G. & Unal, Y. (2020). The effect of gender on university teachers' ICT use.

Stannack, P. (2016). Perspective on employees'performance. *Management Research Journal News, 1*(9), 38-40.

Tarigan, Z. (2010). Technology acceptance model: A review of the prior predators. Retrieved https://www.researchgate.net

Tena, R., Almenara, J. C. & Osuna, J. B. (2016). E-learning of Andalusian university's lecturers. *Turkish Online Journal* .Retrieved https://files.eric.ed.gov/fulltext/ED621647.pdf.

Teacher Gender and ICT(2019). The use of ICT tools for teaching and learning between male and female teachers in secondary schools in Tanzana, *Internationl Journal of Education and Research, 3*(12), 417-428.

Techopedia (2018). What does information and communications technology (ICT) mean?

Top Hat (2020). Constructivist pedagogy definition and meaning. Retrieved. https://tophat.com

Torukwein, B. & Akameze, J. N. (2022). Gender differences in utilization of information and communication technology among students in library and information science, *American Journal of Education and Information Technology,* 6(2), 96-103.

Udoh, E.A. & Adeyinka, T. (2021). Examining the relationship between computer-aided design skills and job performance of educators in Nigerian tertiary institutions, *Journal of Science and Technology Education Research, 6*(1), 1-10.

Ugwu, P. & Kingsley, N. U. (2019). The Concept and Application of ICT to Teaching and Learning Process.

Ukah , T.A. & Atah, C. A. (2021). Workplace variables and business educators' job performance in tertiary institutions in Cross River State, *Journal of Business and African Economy, 7*(1), 1-16.

Ukata, P. F., Adejola, B.C. & Okoye, A. I. (2018). Business education students' ICT learning experiences and programme satisfaction in Rivers State universities. https://www.iiardjournals.org

Umoru, T. A. & Oluwafemi, P. A. (2019). Effects of programmed instruction teaching method on academic achievement and retention of students in business studies in Oyo State, Nigeria, *Journal of Business Educators of Nigeria, 6*(2), 63-72.

Unesco(2021).Information and communication technologies (ICT). Retrieved uis.unesco.org/en/glossary-term/information-and-communication-technologies-ict

Victor, C. I. and Mekuri-Ndimele, A. J. (2021). Influence of instructional delivery digitalization on job performance of business education lecturers, *International Journal of Management Sciences, 9*(2), 1-22. Ignatius Ajuru University of Education Port Harcourt, Rivers State.

Wang, Y. (2017). Advantages and disadvantages of computer assisted instruction. https://www.atlantis-press.com.pdf

Wanjiru, G. K.; Mwanda, S. & Midigo, R. (2017). Computer based instruction and learner achievement; Implications for training art and design in Kenya's Secondary Schools. *International Journal of Academic Research and Reflection, 5(*5), 8530-8536.

Wesley, C. (2020). Definition of computer aided design. https://www.techtarget.com/ whatis/definition/CAD-computer-aided-design.

Williams, B. (2007). Students' perception of pre-hospital web-based examinations. international *Journal of Education and Development using Information and Communication Technology, 3*(1), 54-60.

Williams, J. (2023). The extent of availability and utilization of ICT facilities by undergraduate students for research in academic libraries.

Wilson, M. & Christopher, M. A. (2020).Information and communication technology(ICT) and job performance of teachers of a private international school Uganda.

Wokocha, K. D., Appah, C. N. & West, J. J. (2019). Utilization of facilities for instructional delivery of undergraduate business education programme in Rivers State universities, *Association of Business Educators of Nigeria Journal, 6*(1), 110-117.

Workplace Testing (2021).What does job performance mean? workplacetesting.com

APPENDIX A

REQUEST FOR VALIDATION OF RESEARCH INSTRUMENT

Vocational and Technical Educ. Department,
Faculty of Education,
University of Benin,
Benin City, Edo State.
5th June, 2023

_____

_____

_____

Sir/Madam,

Request for Validation of Research Instrument

I am a post graduate (PhD) student of the University of Benin, Benin City. I am conducting a study on proficient utilization of pedagogical ICT skills and perceived business educators' job performance in colleges of education in Edo and Delta States.

Attached to this letter is the research instrument for the study alongside with the purpose of study, research questions and hypotheses. Please kindly verify the validity of the instrument with respect to:

- The language and clarity of the questionnaire items
- The possibility of the instrument to collect the exact date required from the respondents
- The extent to which the questionnaire items cover the subject matter

You can equally make corrections, adjustments and suggestions on the research instrument to enhance its validity.

Thank you for your anticipated cooperation.

Yours faithfully,

Peter Omoloju ONAIVI
PG/EDU18187

APPENDIX B
QUESTIONNAIRE (PILOT STUDY)

PROFICIENT UTILIZATION OF PEDAGOGICAL INFORMATION AND COMMUNICATION TECHNOLOGY SKILLS AND PERCEIVED BUSINESS EDUCATORS' JOB PERFORMANCE (PUPBEJP) IN COLLEGES OF EDUCATION IN EDO AND DELTA STATES

PART A: (Bio data)

Please, read the questionnaire items carefully and tick (√) against the response that is applicable to you.

Location of Institution: _____ State Edo ☐ Delta ☐

Gender: Male ☐ Female ☐

PART B: Rating Scale

Section A: Please, tick the appropriate column to each item to indicate your response (1-21 items).

4 VHE - Very High Extent
3 HE - High Extent
2 LE - Low Extent
1 VLE - Very Low Extent

Section B: Tick the appropriate column to each item to indicate your response (22-60 items)

4 SA - Strongly Agree
3 A - Agree
2 D - Disagree
1 SD - Strongly Disagree

Section A
Questionnaire items on Proficiency pedagogical ICT skills, Level of utilization of pedagogical ICT skills and Job performance

S/No.	Level of proficiency pedagogical ICT skills	VHE	HE	LE	VLE

1.	I use interactive board for lesson delivery.				
2.	I provide students' assignment and send feedbacks via email.				
3.	I connect and use video/audio conferencing.				
4.	I store and retrieve documents in the computer.				
5.	I photocopy, scan and print documents from the internets.				
6.	I use projectors during instructional delivery.				
7.	I create documents with graphics and course materials.				
8.	I download books and educational materials via the internet.				
9.	I browse and navigate the internet.				
10.	I create and manage websites.				
	Level of utilization of pedagogical ICT skills	**VHE**	**HE**	**LE**	**VLE**
11.	I have a mastery of interactive board to prepare lessons.				
12.	I can use the interactive board for lesson delivery.				
13.	I can use e-mail to provide assignments and send feedback via email.				
14.	I can use ICT for video and audio conferencing for lectures.				
15.	I can use the computer to store and retrieve documents of my lessons.				
16.	I can scan, print and photocopy documents as regards my lessons.				
17.	I can connect the projector for instructional delivery.				
18.	I can create documents with graphics and course materials for lectures.				
19.	I can download books and educational materials via internet for lectures.				
20.	I can convert the downloaded materials to MS Word for lessons.				
21.	I can effectively use Microsoft word and spreadsheets for learning skills.				
	Job Performance Indicators	**SA**	**A**	**D**	**SD**
	Teaching and Instructional Purposes				
22.	I do teaching, giving and marking assignments.				
23.	I prepare lessons and teaching materials.				
24.	I always use instructional materials during lecture delivery.				
	Administrative Purposes				
25.	I supervise teaching practice and compile results.				
26.	I supervise Students' Industrial Work Experience Scheme(SIWES)				
27.	I supervise project and seminar.				
	Evaluation Purposes				
28.	I evaluate and grade students' class work, assignments and papers.				
29.	I compile, administer and grade examinations.				
30.	I compile students' results and submit at the right time.				
	Conducting Research and Publication				
31	I collaborate with colleagues to address teaching and research issues.				
32.	I conduct research in a particular field of knowledge and publish findings in professional journals, books and/or electronic media.				

Section B

Questionnaire items on Proficiency and utilization of CAL/CAI, CMI, CBI, CBT and CAD

	Proficiency and utilization of CAL/CAI	**SA**	**A**	**D**	**SD**
33.	I can manage CAL in PowerPoint environment e.g Manipulate the PowerPoint window,				

	Configure the Quick Access Toolbar (QAT); configure PowerPoint file options				
34.	I can create CAL in slide Presentation e.g. Construct and edit a photo album, Add and remove slides; Enter and format text				
35.	I can use CAL with graphical and multimedia elements e.g Manipulate images, Modify WordArt and shapes; Edit video and audio content.				
36.	I can use CAL to create charts and tables e.g. Construct and modify a table, Apply chart elements; Manipulate chart elements animations				
37.	I can use CAL to apply transitions e.g. Apply built-in and custom animations, Manipulate an animation ; Apply and modify transitions between slides				
38.	I can use CAL to deliver a presentation e.g. Set up a slide show, Set presentation timing ; Record a presentation				
	Proficiency and utilization of CMI	**SA**	**A**	**D**	**SD**
39.	I can use this software to assess the learner present level of knowledge.				
40.	I can use CMI to monitor learners' progress in teaching.				
41.	I can use CMI to record and generate reports on learners' performance.				
42.	I can use CMI for an individualized objective based program.				
43.	I can use CMI to advise learners on their weak points and suggest areas of improvement.				
	Proficiency and utilization of CBI	**SA**	**A**	**D**	**SD**
44.	Teachers find the CBI techniques to be difficult process of teaching.				
45.	I use CBI output process in presenting result in teaching.				
46.	I can present my lesson using CBI software				
47.	I use projectors in teaching with CBI				
48.	I can present my lessons using computer based tutorial.				
49.	I can network classrooms with ICT gadgets using CBI				
	Proficiency and utilization of CBT	**SA**	**A**	**D**	**SD**
50.	I can use CBT for self-administration and examination.				
51.	I use CBT for immediate scoring after examination.				
52.	I can use CBT quicker and better than paper and pencil test.				
53.	I use CBT for unbiased test administration and scoring.				
54.	I use CBT faster in decision making.				
55.	I can use CBT for randomization of questions and response orders to reduce cheating.				
	Proficiency and utilization of CAD	**SA**	**A**	**D**	**SD**
56.	I use CAD proficiently to design instructional materials.				
57.	I use CAD proficiently to design wedding cards, birthday cards, burial cards, annual harvest card, tithe cards etc				
58.	I use CAD proficiently to design the hard cover of project work.				
59.	I can use CAD proficiently to design front cover of books, novels, bulletins, etc.				
60.	I can use CAD proficiently to design students' results and receipts.				

APPENDIX C

DATA ANALYSIS FOR THE RELIABILITY OF THE STUDY USING CRONBACH'S ALPHA

RELIABILITY FOR PROFICIENCY AND UTILIZATION OF PEDAGOGICAL ICT SKILLS

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	20	100.0
	Excluded[a]	0	.0
	Total	20	100.0

a. List wise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.943	28

RELIABILITY FOR JOB PERFORMANCE INDICATORS

Scale: ALL VARIABLES

Case Processing Summary

		N	%
Cases	Valid	20	100.0
	Excluded[a]	0	.0
	Total	20	100.0

a. List wise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.735	11

APPENDIX D

LETTER OF REQUEST FOR COMPLETING QUESTIONNAIRE

Department of Vocational and Technical Education,
Faculty of Education,
University of Benin,
Benin City.
5th June, 2023.

Dear Respondents,

REQUEST FOR COMPLETION OF QUESTIONNAIRE

I am a postgraduate (PhD) student in the department of Business Education, Faculty of Vocational and Technical Education of the above named university carrying out a study. The attached research instrument is meant to elicit your candid opinion on an academic research specifically tagged **"Proficient utilization of pedagogical Information and Communication Technology skills and perceived business educators' job performance in colleges of education in Edo and Delta states**".

You are kindly requested to respond to the items on the questionnaire as your views will be of immense assistance in achieving the purpose of the study. Please ensure that you give accurate and necessary information as they will be treated with strict confidentiality. The information given will not be disclosed to third parties.

Thanks for your anticipated co-operation.

Yours faithfully,

Onaivi, Peter Omoloju
PG/EDU1818774
(Research Student)

APPENDIX E

DATA OUTPUT OF THE RESEARCH QUESTIONS

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Q1	107	1	4	2.82	1.026
Q2	107	1	4	2.66	.921
Q3	107	1	4	2.50	1.004
Q4	107	1	4	3.32	.820
Q5	107	1	4	3.21	.869
Q6	107	1	4	2.60	.899
Q7	107	1	4	2.88	.866
Q8	107	1	41	3.70	3.717
Q9	107	1	4	3.25	.778
Q10	107	1	4	2.36	.903
Valid N (listwise)	107				

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
VAR00001	10	2.36	3.70	2.9300	.42583
VAR00002	10	.78	3.72	1.1803	.89445
Valid N (listwise)	10				

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Q11	107	1	4	2.77	.886
Q12	107	1	4	2.81	.859
Q13	107	1	4	3.00	.847
Q14	107	1	4	2.99	.957
Q15	107	1	4	3.13	.870
Q16	107	1	4	3.12	.774
Q17	107	1	4	2.78	.872
Q18	107	1	4	2.91	.807
Q19	107	1	4	3.19	.814
Q20	107	1	41	3.79	4.709
Q21	107	1	33	3.43	2.991
Valid N (listwise)	107				

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
VAR00003	11	2.77	3.79	3.0836	.30742
VAR00004	11	.77	4.71	1.3987	1.27225
Valid N (listwise)	11				

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
Q22	107	1	33	3.72	2.939
Q23	107	1	4	3.33	.762

Q24	107	1	4	3.26	.805
Q25	107	1	4	3.31	.770
Q26	107	1	4	3.11	.861
Q27	107	1	4	3.24	.878
Q28	107	1	4	3.34	.812
Q29	107	1	4	3.36	.817
Q30	107	1	4	3.36	.757
Q31	107	1	4	3.23	.808
Q32	107	1	4	3.25	.778
Valid N (listwise)	107				

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
VAR00005	11	3.11	3.72	3.3191	.15195
VAR00006	11	.76	2.94	.9988	.64463
Valid N (listwise)	11				

APPENDIX F

DATA OUTPUT OF RESEARCH HYPOTHESES

Descriptive Statistics

	Mean	Std. Deviation	N
Proficiency and Utilization of CAL/CAI	2.83	.732	107
Job Performance Indicators	3.32	.610	107

Correlations

		Proficiency and Utilization of CAL/CAI	Job Performance Indicators
Proficiency and Utilization of CAL/CAI	Pearson Correlation	1	.162
	Sig. (2-tailed)		.095
	N	107	107
Job Performance Indicators	Pearson Correlation	.162	1
	Sig. (2-tailed)	.095	
	N	107	107

Descriptive Statistics

	Mean	Std. Deviation	N
Proficiency and Utilization of CMI	2.70	.678	107
Job Performance Indicators	3.32	.610	107

Correlations

		Proficiency and Utilization of CMI	Job Performance Indicators
Proficiency and Utilization of CMI	Pearson Correlation	1	.261**
	Sig. (2-tailed)		.007
	N	107	107
Job Performance Indicators	Pearson Correlation	.261**	1
	Sig. (2-tailed)	.007	
	N	107	107

**. Correlation is significant at the 0.01 level (2-tailed).

Descriptive Statistics

	Mean	Std. Deviation	N
Proficiency and	2.69	.591	107

Utilization of CBI			
Job Performance Indicators	3.32	.610	107

Correlations

		Proficiency and Utilization of CBI	Job Performance Indicators
Proficiency and Utilization of CBI	Pearson Correlation	1	.226*
	Sig. (2-tailed)		.019
	N	107	107
Job Performance Indicators	Pearson Correlation	.226*	1
	Sig. (2-tailed)	.019	
	N	107	107

*. Correlation is significant at the 0.05 level (2-tailed).

Descriptive Statistics

	Mean	Std. Deviation	N
Proficiency and Utilization of CBT	2.90	.854	107
Job Performance Indicators	3.32	.610	107

Correlations

		Proficiency and Utilization of CBT	Job Performance Indicators
Proficiency and Utilization of CBT	Pearson Correlation	1	.156
	Sig. (2-tailed)		.108
	N	107	107
Job Performance Indicators	Pearson Correlation	.156	1
	Sig. (2-tailed)	.108	
	N	107	107

Descriptive Statistics

	Mean	Std. Deviation	N
Proficiency and	2.71	.828	107

Utilization of CAD Job Performance Indicators	3.32	.610	107

Correlations

		Proficiency and Utilization of CAD	Job Performance Indicators
Proficiency and Utilization of CAD	Pearson Correlation	1	.156
	Sig. (2-tailed)		.109
	N	107	107
Job Performance Indicators	Pearson Correlation	.156	1
	Sig. (2-tailed)	.109	
	N	107	107

Gender = MALE

Descriptive Statistics

	Mean	Std. Deviation	N
Proficiency and Utilization of Pedagogical ICT Skills	2.64	.504	57
Job Performance Indicators	3.25	.661	57

a. Gender = MALE

Correlations[a]

		Proficiency and Utilization of Pedagogical ICT Skills	Job Performance Indicators
Proficiency and Utilization of Pedagogical ICT Skills	Pearson Correlation	1	.239
	Sig. (2-tailed)		.073
	N	57	57
Job Performance Indicators	Pearson Correlation	.239	1
	Sig. (2-tailed)	.073	
	N	57	57

a. Gender = MALE

Gender = FEMALE

Descriptive Statistics

	Mean	Std. Deviation	N
Proficiency and Utilization of Pedagogical ICT Skills	2.93	.579	50
Job Performance Indicators	3.40	.542	50

a. Gender = FEMALE

Correlations[a]

		Proficiency and Utilization of Pedagogical ICT Skills	Job Performance Indicators
Proficiency and Utilization of Pedagogical ICT Skills	Pearson Correlation	1	.215
	Sig. (2-tailed)		.133
	N	50	50
Job Performance Indicators	Pearson Correlation	.215	1
	Sig. (2-tailed)	.133	
	N	50	50

a. Gender = FEMALE

Institution = EDO

Descriptive Statistics

	Mean	Std. Deviation	N
Proficiency and Utilization of Pedagogical ICT Skills	2.66	.451	27
Job Performance Indicators	3.27	.658	27

a. Institution = EDO

Correlations[a]

		Proficiency and Utilization of Pedagogical ICT Skills	Job Performance Indicators
Proficiency and Utilization of Pedagogical ICT Skills	Pearson Correlation	1	.194
	Sig. (2-tailed)		.332
	N	27	27
Job Performance Indicators	Pearson Correlation	.194	1
	Sig. (2-tailed)	.332	
	N	27	27

a. Institution = EDO

Institution = DELTA

Descriptive Statistics

	Mean	Std. Deviation	N
Proficiency and Utilization of Pedagogical ICT Skills	2.81	.586	80
Job Performance Indicators	3.34	.596	80

a. Institution = DELTA

Correlations[a]

		Proficiency and Utilization of Pedagogical ICT Skills	Job Performance Indicators
Proficiency and Utilization of Pedagogical ICT Skills	Pearson Correlation	1	.259*
	Sig. (2-tailed)		.020
	N	80	80
Job Performance Indicators	Pearson Correlation	.259*	1
	Sig. (2-tailed)	.020	
	N	80	80

*. Correlation is significant at the 0.05 level (2-tailed).

a. Institution = DELTA