



EKITI STATE UNIVERSITY

TVET-IJORAD

Vol. 7, No. 1, April, 2024

International Journal



**Research and Design in Technical,
Vocational Education and Training**



**INTERNATIONAL JOURNAL OF RESEARCH
AND DESIGN IN TECHNICAL, VOCATIONAL
EDUCATION AND TRAINING (TVET-IJORAD)**

**2024 SPECIAL EDITION IN HONOUR OF
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FACULTY OF EDUCATION
EKITI STATE UNIVERSITY, ADO-EKITI**

ISSN: 26353431

VOL. 7 NO 1, APRIL, 2024

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TVET International Journal of Research and Design (TVET IJORAD) is an annual international, peer reviewed and open access Journal aimed at promoting original scholarly research, designs, innovations, creativity and information on various aspects of Technical, Vocational Education and Training.

Original Research and Designs in Agricultural Education, Business Education, Home Economics, Creative Arts, Technical Education i.e. (Woodwork, Building, Mechanical Automobile, Electrical/Electronics), Educational Technology, Library, Music, Information Science and other related disciplines.

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EDITORIAL COMMENT

Bridging the gap that exists between educational theory and practice is a major challenge for researchers in education, the world over. There is also no doubt that globalization and knowledge explosion make it imperative that change is continuous. Change in curricular content, teaching and learning methodologies and, the evaluation of learning outcomes has thus become a major focus of education researches in the bid to address modern challenges facing teaching and application of technical and vocational education in societal development. In spite of the globalised nature of these challenges, researchers still have to also pay specific attention to peculiar articles as regards technical and vocational education which is of much relevant to the issue in discuss.

International Journal of research and design in technical, vocational education and training(TVET IJORAD) as peer-reviewed journal published by the Department of Vocational and Technical Education of the Faculty of Education, Ekiti State University, Ado Ekiti, welcomes research papers in Technical Education in all of its areas, Business Education in all of its areas ,Educational Technology, Library and Information Science, and all other areas that are practical oriented and can engender community and national development particularly in teaching and learning.

All articles in this special edition of TVET IJORAD is hinged on the modern issues in the field of Technical, Business and Educational Technology proffering solutions on the way forward. Some of the articles examined the perception of lecturers and students on Internet and artificial intelligence as a medium for effective teaching and learning, and Web-based tool for teaching all technical and vocational studies.

Therefore, I recommend this copy of TVET IJORAD for researchers, policy-makers, teachers and student at all levels. And with this, I extend profound appreciation to all the contributors and researchers whose work were cited here in.

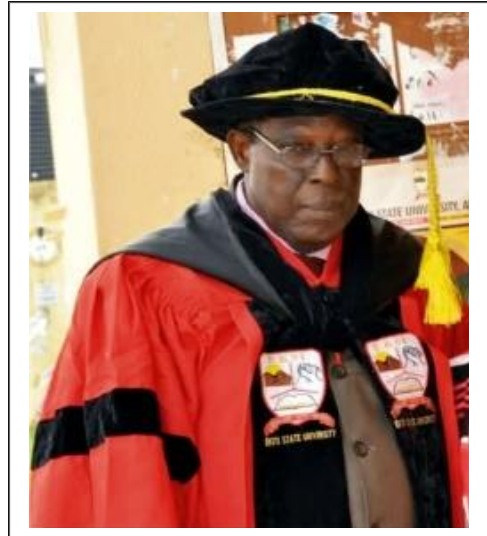
In the over all, TVET IJORAD is a professional journal devoted to publishing scholarly information of major educational innovations and original research on various aspects of vocational and technical education in all ramifications.

Professor G. B. Olowoyeye.

Editor In Chief.

PROFILE OF PROFESSOR ANTHONY ADEKUNLE OWOJORI, *Dip. Sec (Ibadan) B.Sc (Hons) (Nsukka), M.A. (Chio State, USA), Ph.D (Zaria), ACTI, FCA*

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He also attended The Polytechnic, Ibadan, where he got a Diploma in Commerce (Secretarial Studies option) in 1975 from where he proceeded to The University of Nigeria, Nsukka (Enugu Campus) to read Business Education) and graduated with a BSc (Hons) in 1979.

He served his National Youth Service at the Federal Polytechnic, Idah from 1979 to 1980. He was retained as a Lecturer III and was sent to The Ohio State University, Columbus, Ohio, USA, on Federal Government scholarship (Technical Teachers' Training Program) where he got his MA in Business Education in 1983. He later attended the Ahmadu Bello University, Zaria, where he got his PhD in Business Education, in 1990.

He attended the Accountancy Tutors, Kaduna where he enrolled and passed the Foundation and Professional Examinations of the Institute of Chartered Accountants of Nigeria and became a fellow in 2000.

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4. The Polytechnic, Kaura-Namoda, 1984 to 1988
5. The Ahmadu Bello University, Zaria 1988 to 1995
6. Adeyemi College of Education, Ondo, 1995 to 1998 and
7. Ondo State University (now Ekiti State University) Ado-Ekiti from 1998 September till 1st October 2023 when he retired as a Professor.

In EKSU, he served as an Acting Head, Department of Accounting (2002), having been initially employed as a Senior Lecturer in the Department before he was officially deployed to the Faculty of Education in 2003. He also served as the Head of Department of Educational Foundations & Management and the pioneer Head of the Department of Vocational & Technical Education.

He is presently the CEO of TonyGay Investment, Akure and Ado-Ekiti

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POWER DISTRIBUTION NETWORK AND PRODUCTION CHAIN ANALYSIS IN AN INDUSTRIAL COMPANY

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Abstract

The efficiency of an industrial company's power distribution network and production chain is crucial for optimizing operational performance and minimizing costs. This study analyzes the intricacies of power distribution networks and the production chain within an industrial setting focusing on identifying key factors affecting energy efficiency, reliability and system resilience. Using a combination of data analytics, network modeling and process flow evaluation, the research investigates how power distribution impacts production throughout and operational stability. Furthermore, it explores potential improvement to energy management and highlights the importance of real time monitoring and predictive maintenance in minimizing downtime and ensuring continuous, reliable operations. The findings after actionable insight to enhance decision making, reduce energy cost and support sustainable industrial growth. Research methodology included a combination of secondary research with a literature review and analysis of primary data collected through surveys. The findings of the study revealed that power distribution is essential to the company operations, and the current power infrastructure requires attention. This project offers a comprehensive analysis of the power distribution network, unearths the problems that this company faces, and provides recommendations that can enhance the reliability of electricity distribution and, in turn, the production chain. The research recommends investments in modern power infrastructure and the adoption of energy-efficient practices to enhance production chains and ultimately reduce energy costs.

Keywords: Power distribution, Production chain, Industry, Network, Operational performance

Introduction

The power distribution network and production chain are critical components of any industrial company. Stable power supply ensures a smooth running of operational processes and limits the occurrence of operational delays and frequent

damage to either the machines or finished products. The power distribution network provides the electrical power that is needed to run the production chain, while the production chain converts raw materials into finished products.

Power distribution is the vital infrastructure in modern economies that powers various industries, including manufacturing, transport, and healthcare. In Nigeria, power distribution challenges are among the major hindrances to economic development, with widespread power cuts and inadequate power supply. Research conducted in Nigeria shows that power cuts remain a hindrance to business growth, reduce productivity, and increase operational costs. A study conducted by Oyelade and Oludele (2018) on the effects of power outages on manufacturing output in Nigeria found that power outages reduced the number of workers in the industry by up to 60%. As a result, the reduction leads to a decline in manufacturing output. Moreover, power outages have a significant negative impact on small and medium-sized enterprises whose operations rely largely on electricity. Therefore, it is essential to address the challenges associated with power distribution systems for efficient and sustainable business operations.

Previous studies have identified technical problems such as inadequate maintenance, outdated infrastructure, and lack of investment as causing the frequent power outages in the country. Other literature explored alternative energy sources such as solar and wind energy and their potential to address Nigeria's electricity crisis. Further research recommended that the Nigerian government should prioritize investment in power infrastructure and alternate energy sources to enhance the country's power distribution

This report aims to analyze the power distribution network within Superflux International Limited, a printing and Production Company and the impact of this on the company production chain. The report will examine the key elements of the power distribution

network, the company's infrastructure and recommendations for improvement.

Superflux International Limited is a leading printing and production company located in Ojodu, Lagos State, Nigeria. The company has a printing factory where sensitive materials like degree certificates, bank cheques, tickets, etc. are printed using high-end printing machines under strict security regulations. The company also carries out commercial prints, variable data prints, envelope production, thermal/POS roll production and others. Due to the sensitivity of the company's production, steady power supply for smooth machine operation and proper personnel management are areas of high priority in the day to day running of the company.

The company commenced operations in 1998 in the marketing of security prints products and has since grown from a 2-man trading company at inception to about 300 employees in a purpose built ultra-modern manufacturing facility.

Over the years, Superflux International Limited has become the leading cheque provider in Nigeria, accredited by the Central Bank of Nigeria, Central Bank of Zambia and West Africa Monetary Zone. They produce a wide range of cheques incorporating leading edge security features which gives documents maximum protection against fraud. The cheques are produced in different sizes and can be finished as cut sheet, flow line or multi-part variants.

With expertise and experience garnered over the years in security printing, they are able to create vibrant designs to meet specific clients' security and creative requirements. The cheque printing and finishing activities conform to established quality standards to guarantee

integrity in their processes and procedures. Superflux International Limited has also become a conglomerate with interests in courier and logistics services in Nigeria and Kenya with a subsidiary operating as an agro-allied business. The sensitive nature of its operations means visits into the factory are limited to only approved personnel and members of staff are diligently searched when going in and out of the factory premises. A well robust CCTV coverage of the entire company premises exists to aid proper surveillance and monitoring.

Power Distribution Network and Production Chain

One of the primary functions of industrial power distribution is to efficiently and reliably power the equipment and machinery essential for manufacturing and production processes. Industrial facilities rely on a vast array of equipment, ranging from motors and pumps to conveyor systems and robotic arms, all of which require a steady and uninterrupted supply of electricity to operate effectively.

Industrial power distribution systems ensure that each piece of equipment receives the appropriate voltage and current required for optimal performance. This involves managing power quality to minimize fluctuations and disturbances that could affect equipment operation. By maintaining stable voltage levels and mitigating issues such as voltage sags, surges, and harmonics, power distribution systems safeguard equipment from damage and ensure consistent production output.

Furthermore, industrial power distribution systems play a crucial role in load management, balancing the electrical load across different circuits and phases within the facility. By

distributing the load evenly, these systems prevent overloading and voltage imbalances that could lead to equipment failures or disruptions in production. Effective load management optimizes energy usage and maximizes the efficiency of electrical infrastructure, ultimately reducing operating costs and improving the overall performance of industrial operations.

In essence, industrial power distribution systems serve as the lifeline of manufacturing and production facilities, powering the equipment and machinery that drive productivity and profitability. By providing reliable and efficient electrical energy to support industrial processes, these systems enable businesses to meet production targets, maintain competitiveness, and adapt to changing market demands effectively.

The power distribution network in this printing company comprises various components, including transformers, switchgears, distribution panels, diesel generator and electrical cables. The network is responsible for transmitting and distributing electrical power from the main power source to different sections and equipment within the factory facility.

Transformers: Transformers step up or step down the voltage to ensure efficient power distribution. They help match the voltage requirements of different equipment and sections within the factory. A 500kVA transformer steps down the incoming 33kV line from the National Grid to 400V for use in this factory. This transformer is the primary link between the factory and the National Grid.

Switchgears: Switchgears are used to control and protect the power distribution network. They isolate faulty equipment and prevent

electrical failures from affecting the entire production chain. Switchgears also facilitate maintenance and repairs. Every section in the factory has switch gears to either isolate a series of similar machines or similar equipment.

Distribution Panels: Distribution panels receive power from the switchgears and distribute it to various sections or production lines within the factory. They contain circuit breakers and fuses for overload protection and to ensure the safe operation of equipment.

Electrical Cables: Electrical cables connect the distribution panels to the equipment and machinery in the production chain. They carry the electrical power required for the operation of the different processes, ensuring a smooth and uninterrupted flow.

Diesel Generator: A diesel generator is a mechanical-electrical machine that produces electrical energy (electricity) from diesel fuel. It is a combination of a diesel engine with an electric generator to generate electrical energy. A diesel compression-ignition engine is usually designed to run on diesel fuel, but some types are adapted for other liquid fuels or natural gas. Due to the epileptic supply of power from the National Grid, the diesel generator serves an alternate source of power for this company. More often than none, the diesel generator runs nonstop even when there is power supply from the Grid. This is to prevent disruptions in the printing of sensitive materials due to the unstable nature of electricity from the National Grid.

Production and printing operations are done round the clock, therefore, employees in the operations section operate in shifts to maximize output and efficiency. The company operates over 30 industrial standard printing and production machines and

equipment. These include intaglio printers, flexographic printers, offset printers, packaging machines, die cutters, check cutting/encoding machines, forklifts, pallet jack and others.

The typical flow of activities includes marketing and advertisement of services to prospective clients. Upon job or contract acquisition, design samples and prototype prints are sent to the client for verification and confirmation. After due consultations with the client on modifications, the printing process eventually begins. Sample structure and specification is loaded onto the systems for onward production. Depending on the nature of the job, each machine has its own configuration based on expected outputs. After completion of expected orders, output is packaged and either picked up or sent to the client.

The company's pricing policy is dependent on the job type, volume of output and cost of production.

The production chain for this printing company can be broken down into the following primary activities:

Inbound logistics: This includes activities such as purchasing raw materials, storing them, and transporting them to the production facility. All materials are safely kept in the factory storage unit and is only accessible by specified members of staff.

Operations: This includes the actual printing process, as well as any post-printing operations such as cutting, folding, and binding. Jobs are classified and scheduled to various machines based on type, specifications and expected delivery dates.

Outbound logistics: This includes activities such as storing finished products, packaging them, and shipping them to customers.

Marketing and sales: This includes activities such as generating leads,

developing marketing materials, and closing sales.

Service: This includes activities such as providing customer support, reprinting damaged products, and recycling waste.

In addition to these primary activities, there are also a number of secondary activities that are important to the success of this printing company. These secondary activities include:

Procurement: This includes activities such as finding and negotiating with suppliers, as well as managing the supply chain.

Technology development: This includes activities such as researching new printing technologies, developing new printing processes, and training employees on new technologies.

Human resource management: This includes activities such as recruiting and hiring employees, training and developing employees, and compensating and rewarding employees.

Infrastructure management: This includes activities such as maintaining the printing facility, managing the printing equipment, and ensuring the safety of employees.

The production chain for this printing company can be complex and challenging to manage. However, by understanding the different activities involved in the production chain, the company can further improve their efficiency and profitability.

Here are some of the key factors that can affect the efficiency of the company's production chain:

The quality of the raw materials:

The quality of the raw materials used in the printing process can have a significant impact on the quality of the finished product. High quality papers can affect the appearance and resolution of prints, security tags and watermarks are highly sensitive and can be best implemented when the

quality of ink and paper being used is of good standard.

The efficiency of the printing equipment:

The efficiency of the printing equipment can also have a significant impact on the production time and cost. Lags and incessant jams in the rollers of the printing machines can lead to an increase in damaged outputs and delay in job completion. The company has engineers who operate round the clock in the maintenance and repair of all factory machines. This sustains smooth operation and quick troubleshooting of issues that may occur during the production process.

The skill level of the employees:

The skill level of the employees who operate the printing equipment can also have a significant impact on the quality and production time of the finished product. Every employee in the operations department undergoes a supervised training process before to assess their responsiveness and ability to operate the machines without hindrance.

The layout of the production facility:

The layout of the production facility can also have a significant impact on the efficiency of the production chain. Security printing jobs like bank cheques and ballot papers are done in a section separate from commercial prints and envelope productions. The factory basically has three layers; The lowest layer is for envelop and Thermal roll productions, Middle layer is for commercial prints and the top layer is for sensitive printing jobs.

The use of automation: The use of automation can help to improve the efficiency of the production chain by reducing the amount of manual labor required. All machines require minimal human interference, print schedules, design and other adjustments are made on the system

therefore, the machines print, cut and produce to set specifications. Security watermarks and numberings are all automated on the machines.

Methodology

This study employs a mixed methods approach to analyze the power distribution network and production chain in an industrial company focusing on data collection, system modeling, and performance assessment.

Data Collection

Data on power consumption, production rates, maintenance records, and downtime events will be gathered from historical records, SCADA (Supervisory control and Data Acquisition) systems, and energy management software used within the company. Survey and interviews with technical staff and operators will provide additional insights into challenges and inefficiencies.

Power Distribution Network Analysis

A comprehensive evaluation of the power distribution network will be conducted using network modeling tools such as ETAP (Electrical Transient and Analysis Program) or similar software. This step includes:

Load Flow Analysis: Evaluates power distribution at each node to determine areas of overload or inefficiency.

Fault Analysis: Identifies potential fault locations and assesses network resilience in case of component failure.

Reliability Analysis: Analyzes historical fault data to calculate metrics like SAIDI (System Average Interruption Duration Index) and SAIFI (System Average Interruption Frequency Index) to assess reliability and plan for improvements.

Production Chain Analysis: The production process will be mapped

and time-motion studies will be conducted to identify bottlenecks and production inefficiencies, key methodologies include:

Process Mapping: Detailed mapping of the production chain from raw materials to final product, identifying key stages and energy intensive processes.

Value Stream Mapping: Analyzes flow efficiency by focusing on material flow, cycle time, and lead time.

Simulation Modeling: Using software like Arena or Any logic, a simulation of the production chain will be developed to test potential improvements in throughput and efficiency.

Energy Efficiency and Loss Analysis

Using collected data, the study will evaluate energy losses within the power distribution network and production chain. Specific areas of include:

Power Quality Assessment: Voltage fluctuation, harmonics, and power factor issues will be analyzed to determine impact on equipment performance and energy use.

Thermal Imaging: Infrared thermal imaging will be used to identify overheating components within the distribution system.

Energy Balance Analysis: An assessment of energy input versus output at each production stage to identify waste and inefficiencies.

Predictive Maintenance Model

A predictive maintenance model will be created using historical data on equipment failure and operating conditions. Techniques such as machine learning algorithms (e.g., decision trees or neural networks) will be employed to predict the likelihood of failure and optimize maintenance

schedules, reducing unplanned downtime

identify recurring patterns in employee insights.

Cost-Benefit Analysis

Finally, a cost-benefit analysis will be conducted to quantify the potential saving from implementing the recommended improvement. This will include consideration for reduces energy cost, improved production efficiency, and reduced downtime.

Data Analysis Techniques

Quantitative data will be used statistical software such as SPSS or R, with a focus on regression analysis to understand the impact of power reliability on production. For qualitative data from interview, thematic analysis will be used to

Electrical System Analysis

A complete analysis of the electrical system in the company was carried out to assess the various components and determine its reliability and efficiency.

Load Analysis: The Company is basically sectioned into two - Administrative Building and Factory Building. All electrical loads such as machinery, lighting, HVAC systems and office equipment within both buildings was identified. The usage patterns of these electrical loads were also captured. The table below shows a summary of the energy demand in the company.

	Lighting	Office Equipment	Machinery	HVAC System	Total Load
Administrative Building	2.2kW	5.8kW	-	12.5kW	20.5kW
Factory Building	1.6kW	0.5kW	250kW	20kW	272.1kW
					292.6kW

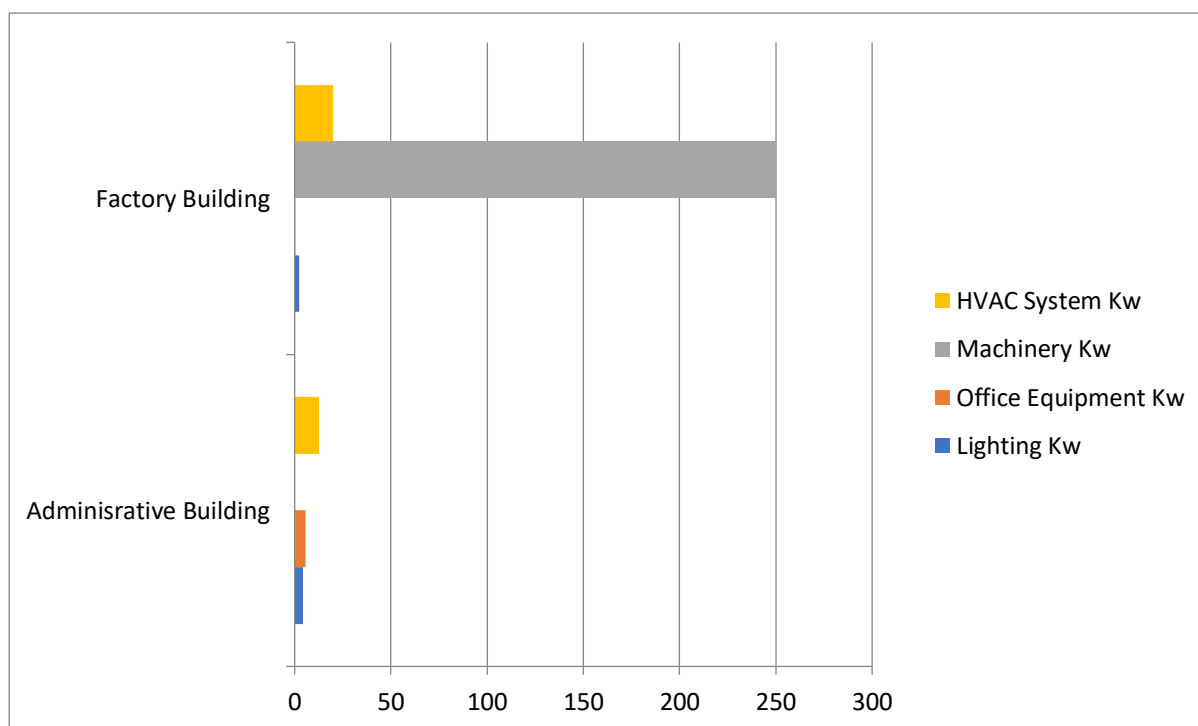


Figure 1: Bar chart on the Load Analysis of the Company**Category-wise load Comparison****Lighting Load**

Administrative Building: 2.2kw (10.7% of total load)

Factory Building: 1.6kw (0.6% of total load)

Lighting usage is relatively higher in the Administrative Building compared to its total load

Office Equipment Load:

Administrative Building: 5.8kw (28.3% of total load)

Factory Building: 0.5kw (0.2% of total load)

Office equipment usage is significantly higher in the Administrative Building.

Machinery Load:

Administrative Building: 0kw (0% of total load)

The factory has a much larger machinery load, which is expected due to its primary function.

HVAC System Load:

Administrative Building: 12.5kw (61% of total load)

Factory Building: 20kw (7.4% of total load in the Administrative Building but a smaller portion in the factory.

Total Load Comparison

Administrative Building: 20.5kw

Factory Building: 272.1kw

The total load in Factory Building is considerably higher, driven primarily by machinery

Proportion of Usage by Category

Administrative Building has a more balanced distribution, with lighting, office equipment and HVAC contributing significant portion to the load.

Factory Building's load is heavily concentrated in machinery, with other categories contributing very small portions.

Efficiency Improvements:

The administrative building could consider energy saving measures for

HVAC and office equipment as they contribute the most to its total load.

In the factory, machinery dominates the load, so optimizing machinery energy use could lead to significant reductions.

Usage Patterns:

The administrative building primarily consumes energy in office related categories (office equipment and HVAC)

The factory's high machinery usage suggests it's dedicated to industrial processes, with less emphasis on lighting and office equipment.

Voltage Levels: This varies as some machines in the factory are three-phase systems while some are single-phase power systems. A multimeter was used to ascertain this to correlate with installations setups and schematic diagrams of every equipment. Every component in the administrative block runs on a single-phase power system.

Earthing/Ground System: An analysis of the earthing system in the factory was conducted and it was discovered that overtime the earthing system of the factory has depreciated and this could result in harm to operators and damage to machinery.

Power Quality: Volage stability, harmonics and transient voltage surges analysis was carried out to establish power quality as this is crucial to equipment functioning. During the study, no voltage instability was discovered as the factory runs on diesel powered generators round the clock.

Electrical Wiring: The general condition of cables and wires in the factory was satisfactory.

During analysis, some issues were identified in the company's production chain and power distribution network. These issues include:

Lack of monitoring and control:

The absence of real-time monitoring and control systems makes it challenging to detect and address power distribution issues promptly. This can result in delays in identifying faults and increased downtime.

Aging Infrastructure: Aging components and infrastructure in the company's power distribution network resulted in power interruptions and posed safety risks. Some factory machines are outdated and consistently develop faults during operations which in turn affects product delivery schedules.

Cost of production: Due to the company's reliance on diesel generators for consistent power supply, there is an increase in operations and maintenance costs. This subsequently increases pricing and reduces the company's yearly revenue.

Staffing: Finding and keeping qualified staff is a challenge for this printing company. This is due to the high turnover rate in the industry and the demanding nature of the work.

Technology: The printing industry is constantly evolving, with new technologies being developed all the time. This can make it difficult for printing companies to keep up with the latest trends, which can lead to business losses.

Energy Efficiency: The energy efficiency of the company can be greatly improved due to the type of lighting systems and old machinery currently in use.

Recommendations

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

- The company should consider alternative sources of renewable energy, such as solar or biomass to

supplement electricity from the National Grid and reduce dependence on diesel gensets.

- The company should consider adopting energy-efficient practices like upgrading lighting systems to LED fixtures and optimizing or replacing older machines with new energy efficient alternatives. This will help lower electricity consumption and reduce operational costs.
- Improve the management of employees by building their entrepreneurial capacity to shape the organization's productive chain.
- Develop a regular maintenance plan for existing power infrastructure
- Conduct a comprehensive assessment of the power distribution and production infrastructure thereby prioritizing upgrades or replacements for aging components and machines. This may involve replacing old machines, upgrading distribution cables, and installing modern electrical panels.
- The company should conduct regular assessments of power demand and ensure that the power distribution network has sufficient capacity to handle current and future requirements. Consider factors such as expanding production capacity, introducing new equipment, or incorporating renewable energy sources.
- A centralized monitoring and control system that provides real-time data on power distribution parameters should be implemented. This will enable proactive identification of faults, prompt response to outages, and better management of the overall power distribution network.

- Training programs for staff members responsible for power distribution to enhance their understanding of the network and equip them with troubleshooting skills. Additionally, establish a robust preventive maintenance schedule to ensure regular inspections, repairs, and replacements of critical components.

Conclusion

This report captures the important sectors and activities in Superflux International Limited. The power distribution network plays a vital role in the production chain of this company, ensuring its reliability and efficiency is crucial for uninterrupted operations. By addressing some of the issues captured and recommendations offered, the company can enhance its productivity and improve the resilience of its power distribution network.

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INFLUENCE OF ENVIRONMENT ON THE PERFORMANCE OF BUSINESS ENTERPRISES IN STATE OWNED TERTIARY INSTITUTIONS IN OSUN STATE, NIGERIA

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Abstract

The study investigated influence of environment on the performance of business enterprises owned by state tertiary institutions in Osun State, Nigeria. The study identified the prevalent business environment as major factors that determine the performance of business enterprises with respect to sales volume, asset acquisition and employee's satisfaction. Four research questions were raised and four hypotheses were formulated to guide the study at 0.05 level of significance. The study adopted descriptive research design of the survey type. The population of the study was 26 business enterprises in Osun state owned tertiary institutions. The sample for this study comprised of 145 respondents using proportional sampling technique. The instrument used was a self-structured questionnaire titled "Influence of Environment on the Performance of Business Enterprises (IEPBEQ)". The instrument was validated using face and content validity by experts from Business Education and Test and Measurement Departments, Faculty of Education, Ekiti State University, Ado Ekiti. The instrument was pilot tested in order to determine its reliability index which was 0.78 using Cronbach Alpha. The data collected were analyzed using correlation analysis to test the formulated null hypotheses at 0.05 level of significance. Findings of the study revealed that there is a positive relationship between economic factors, legal-political factors, socio-cultural factors and competition on the performance of business enterprises in state owned tertiary institutions in Osun State. The study concluded that prevailing factors like taxation, inflation, high lending rate, lack of credit facility, culture of outsourcing job to contractors, people's lifestyle, societal belief, competition among others affect the performance of business enterprises,. The study therefore recommended among others, that Government should revisit some of her policies that are unfriendly to business performance. Institution's management should also make fund available in form of grant or loan to business enterprises for expansion and purchase of necessary equipment, for an enhanced good performance.

Keywords: Environment, Business Enterprises, performance, State owned Institutions.

Introduction

The nation's educational sector is designed to produce entrepreneurial graduates for national development, especially at the tertiary institutions where there are academia's whose knowledge and skills transcend their national shores to produce quality manpower for sustainable development. Tertiary institutions are the educational institutions such as Universities, Colleges of Education, Polytechnics and other specialized institutions that produce responsible graduates for economic and human capital development. The performance of every higher institution seems to be a function of adequate funding. This portends that tertiary institutions need to renew their drive for internally generated revenue, as a supplement to government subvention. Internally generated revenue (IGR) are funds not constituting the proceeds of any loan, insurance recovery or indebtedness, nor funds that are borrowed or realized through any external means but the creation of either tangible or intangible resources within the confines of a given entity (Oyetakin & Yahaya, 2017).

It appeared that government subvention to these institutions has been inadequate leading to irregular payment of salaries and wages, poor infrastructural facilities, strike and industrial unrest among others. In a bid to proffer solution to this inadequacies on the part of Government, management of institutions have looked inward by establishing business enterprises that can be operated to generate more revenue to supplement Government subventions. Business enterprises are ventures that are owned and managed by state owned tertiary institutions which are purposely set up to make profit through the production of goods and services. The activities of these

enterprises are expected to be regulated by a board as stated in the Article of Association. The formulation of the board according to the Articles of Association comprises of Governing Council Chairman, Vice chancellor, Provost or Rector as the case may apply as the chairman, Registrar as the Secretary, Bursar as the Director of Finance, Venture Managing Director as a member, and any other person or persons as may be stipulated in the Articles of Association. Preliminary study conducted by the researcher indicated that virtually all state owned tertiary institutions in Osun state, Nigeria have some forms of business enterprises through which they generate revenue to meet their expenditure. These business enterprises include block industries, printing press, water factory, crop production, animal production, poultry, fish pond, conference centers, petroleum filling station, guest house, bakery, securities services, financial services, establishment of primary and secondary schools, to mention but a few. Ukpong (2019), reported that revenue generated from these enterprises, though not satisfying, but are instrumental to successful operational activities of institutions. It then follows that the nitty-gritty of the performance level of these business enterprises should be accorded great importance. In recent times, the rate at which business enterprises owned by state tertiary institutions are folding up is alarming and those that are not yet folding up are either on rotational production or operating on a low output level which is worrisome to the stakeholders.

Observation of the researchers showed that customers often times complain of high price, low quality, low production and poor service delivery by these enterprises leading to low performance in area of

sales volume, assets acquisition, employees' satisfaction, among others leading to rational production, collapse of some of the business enterprises. Thus, it appears that the business enterprise that was meant to support the institution internal generated revenue is dwindling. For any business enterprise to attain higher performance and remain relevant in the industry, Olakunle, Timothy and Yusau (2018) submitted that business enterprises must pay attention to the environment within which they operate. This is because business enterprise is an integral part of its environment on the ground that they are mutually interdependent and exclusive in dictating the success or failure of any enterprise (Babalola & Abel, 2013). This implies that business enterprises and the environment where they operate are inseparable duo.

Literature revealed that poor performance of these business enterprises could be attributed to various environmental factors. Performances of business enterprises depend on the policies of the government, institutions other competitors in the same industry. Aborade (2005), reported that all business decisions are found to be contingent upon a good analysis of the environment which is often the bane of all the constraints as this environment tends to create the opportunities and threats for the business enterprise. Azika (2001) was of the opinion that failure to proactively analyze the nature of business environment might deter the attainment of the expected performance in terms of sales volume, market share asset and employees satisfaction among others. Business environment may be described as the total surrounding factors which have a direct or indirect influence on the functionality of a business enterprise.

Oginni and Adesanya (2013) described business environment as the combination of many factors both tangible and non tangible elements that provide support for the organizational success through provision of market for its product and services.

The environment of business can be likened to the pattern of all internal and external conditions or influences that affect the existence, growth and development of business enterprise. The internal factors of business environments are those factors that directly influence the regular operation of enterprise activities. Examples of internal factors are company vision, mission, management competence, financial strength, information among others (Ogunleye, 2016). External business environment which is the focus of this study include factors that are outside the business enterprise that a business typically has no control over. The success of the enterprise depends on its ability to adapt and to respond to them in a way that is appropriate to the business. Adeoye and Elegunde (2012) classified external business environment into two categories which are direct and indirect factors. Every business is confronted with a set of direct and indirect factors. Direct factors are usually regarded to as controllable factors because business enterprise has a fair amount of control over it such as employees, customers, suppliers, investors, marketing intermediaries, labour union, competition, raw materials, and public perception among others. On the other hand, indirect factors are beyond the control of a company's management, its success depend on the ability of business enterprise to purposely design and adjust internal variables to take advantage of the opportunities and combat the threat in the

environment. These comprised of the interacting systems of physical, biological and cultural elements which are interlinked both individually and collectively.

Agbolade (2014) affirmed business environment as a set of factors, include as economic factors, socio-cultural factors, political factors, technological factors, and competition factors, which are overpowering and affecting the operational decisions of a firm. Economic environment as one of the external business environment is expected to be a great concern for a business enterprise whose aim is to remain in business. Adeoye and Elegunde (2012) observed that where a growing economy provides a plain ground for businesses to thrive, a period of recession may bring failures and probably liquidation of such businesses. This is in line with Nwekpa and Ewans (2015) who noted that high inflation rate, exchange rate, multiple tax, finances and interest rate as economic indices have a significant effect on the performance of small scale businesses in Nigeria. An upward review of tax policies and inflation have caused additional burden to the business enterprises leading to high cost of production which also affects sales volume

Another environmental factor that may influence business activities of business enterprise managed by state tertiary institutions is legal-political factor. Stemming from this, legal-political environment are laws, decree, regulations, government agencies, government policies and pressure groups that guide the operations of businesses within a definite jurisdiction. Arowomole (2018) opined that business activities are affected by the development in the legal-political environment. This is because in the appointment of governing council by the government

and manager of the venture by the institution who are part of the management team is based on party loyalist, not minding the credibility and qualification of the appointees. Undue control and interference of the management of the institution in the running of the affairs of the enterprise especially on profit sharing formula may impede performance of the business enterprise owned by state tertiary institutions. The effect of internal crisis like strike, riot, government policies, institutional policies and financial indiscipline known as fraud among some members of the staff of the enterprise who are entrusted to hold one sensitive position tells on the overall performance of the business enterprises. Bassey and Faith (2018) also reported that the category of financial fraud committed in organization especially tertiary institutions are management and employees' fraud.

In addition, any business environment is a competitive one. Business enterprises owned by state tertiary institutions in Osun state are surrounded by a host of competitors with the same products and services aimed at the same target audience. Eniola and Entebang (2014) affirmed that rivalry arises when one or more business contenders are in a grasp or see an advantage to improve their position to satisfy the needs and want of the consumers. This was supported by Onikoyi (2017) who indicated that the impact of product innovation and pricing on organizational performance was higher in the company when consumers perceive product innovation as stronger, more favorable and more unique. The activities of the competitors to outsmart sale poses challenges to the performance level of the business enterprise. Apart, some policies of the association of

competitors restricting sales of some product outside the campus also affects sales volume, room for expansion and workers satisfaction.

In the same vein, Abdullahi and Zainol, (2016) noted socio-cultural environment as one of external factor that deals with the way of life of the people in terms of the lifestyle, norms, belief, custom, attitude and religion among others that are exhibited in the society. It has been observed that the socio-cultural values of the society toward business enterprise determine their performance rate. Joseph, Peter and Charles (2014) in their study, noted that there is positive effect of socio-cultural factors on the performance of business enterprise. In a related work by Richie (2007) affirmed that cultural-orientated products have many contents that reflect users' lifestyles as well as providing them with symbolic personal, social and cultural values that facilitate business performance. The socio-cultural practices by the customers and institutional management seems to hinder performance of business enterprises in state owned tertiary institutions. For instance, if there is low patronage for a particular product due to belief, life style or norms, the lifespan of the enterprise offering such product or service may be easily short-lived. In view of the influence that the observed environmental factors may likely have on the business enterprises owned by state tertiary institutions in Osun State, The researcher noted that some of the managers seems not to accord great importance to the environment where they operate. It appeared that they are too confident of conquering the prevailing circumstances around the business that customers will always appreciate their product and services ahead of other competitors in the market. This unprofessional act might

be the cause of their seemingly low sales, poor staff welfare and asset acquisition. Based on this premise, the study examined influence of business environment on the performance of business enterprises in state owned tertiary institutions in the Osun state, Nigeria.

Statement of the Problem

Business enterprises owned by state tertiary institutions in Osun state in the last one decade appeared to be experiencing unsatisfactory rate of progress cumulating into downward performance; retrenchment of employees, rotational production, low industrial output, due to low sales volume, poor patronage, loss of customers, low morale and poor motivation of staff leading to staggered and collapse of these business enterprises. This might be as a result of different factors, one of which may be unfavourable business environment.

The sustainability and growth of business enterprises has been observed to be a function of availability of certain elements within the environment, such as economic factors, legal-political factors, socio-cultural factors and competitive factors. Despite the effort of the managements of state owned tertiary institutions in Osun state to generate revenues from established business enterprises, it has been observed that these enterprises seem not to achieve desire goal of profit making. A pertinent question that arises is; Will environmental factors influence performance of business enterprises in state owned tertiary institutions in Osun state? It is on this background, the researchers is interested in carrying out this study in order to investigate the influence of business environment on the performance of business enterprises owned by state

tertiary institutions in Osun state, Nigeria.

Purpose of the Study

The study examined the influence of business environment on the performance of business enterprises owned by state tertiary institutions in Osun state. Specifically the study:

1. investigated the influence of economic factors on the performance of business enterprises owned by state tertiary institutions in Osun state;
2. assessed the influence of legal political factors on the performance of business enterprises owned by state tertiary institutions in Osun state;
3. determined the influence of socio-cultural factors on the performance of business enterprises owned by state tertiary institutions in Osun state;
4. examined the influence of competition factors on the performance of business enterprises owned by state tertiary institutions in Osun state.

Research Questions

The following research questions were raised to pilot this study:

1. What is the influence of economic environment on the performance of business enterprises owned by state tertiary institutions?
2. What is the influence of legal-political environment on the performance of business enterprises owned by state tertiary institutions?
3. What is the influence of socio-cultural environment on the performance of business enterprises owned by state tertiary institutions?

4. What is the influence of competition environment on the performance of business enterprises owned by state tertiary institutions?

Research Hypotheses

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

1. There is no significant influence of economic factors on the performance of business enterprises owned by state tertiary institutions ;
2. There is no significant influence of legal-political factors on the performance of business enterprises owned by state tertiary institutions ;
3. There is no significant influence of socio-cultural factors on the performance of business enterprises owned by state tertiary institutions ;
4. There is no significant influence of competition factors on the performance of business enterprises owned by state tertiary institution.

Methodology

The study adopted descriptive research design of a survey type. This design was considered appropriate because this study describes situations concerning the influence of business environment on the performance of business enterprises owned by state tertiary institutions in their normal settings as they occur without any manipulation, while survey design allows every segment of the population to be represented through which inferences were drawn.

The population for this study comprises of 555 members of staff from 26 business enterprises owned and managed by state tertiary institutions in Osun State, Nigeria.

According to tertiary institutions' venture directorate as at the time of this study. The sample for this study consisted of 145 respondents. The selection process was through proportional sampling technique in all the five (5) state owned tertiary institutions in Osun State.

The research instrument used for this study was a set of questionnaire designed by the researcher titled "Influence of Environment on the Performance of Business Enterprises Owned by State Tertiary Institutions in Osun State (IEPBEOSTIO)". The questionnaire was divided into two sections; section A and B. Section A was used to seek information on bio-data of the respondents on years of working experience while Section B was further broken down to 4 parts, made up of items that measured environmental factors (economic factors, political factors, socio-cultural factors and competition factor). The response scale of the instrument was rated on 4-point Likert scale of Strongly Agreed (4-points), Agreed (3-points), Disagree (2-points), and Strongly Disagree (1-point).

The instrument was subjected to face and content validity, which were carried out by two experts in Business Education, Tests and Measurement, Faculty of Education,

Ekiti State University, Ado-Ekiti. The observations of these experts were considered and effected to ensure that the instrument measured what it purported to measure. The reliability of the instrument was conducted at Obafemi Awolowo University, Osun state that was not part of the sample. For the pilot study, a total number of 20 respondents were used. The data obtained from the pilot study were then subjected to Cronbach Alpha reliability. The reliability coefficient of 0.78 was obtained. This was considered high enough to be reliable for the study. The questionnaires were administered to the respondents by the researchers, collected and analyzed. Statistical Packages for Social Science were used to analyse data (SPSS). Descriptive statistics such as mean, percentage, frequency count and standard deviation were used to answer the research questions raised while correlation analysis was used to test the null hypotheses at 0.05 level of significance

Results

Testing of Hypotheses

Hypothesis 1: There is no significant influence of economics factors on the performance of business enterprises owned by state tertiary institutions in Osun state

Table 1: Correlation Analysis showing Influence of Economics Factors on Performance of Business Enterprises Owned by State Tertiary Institutions

Variables	N	Mean	S.D	r _{cal}	r _{tab}	decision
Business Performance	120	2.85	0.31	0.247*	0.178	Sig
Economics Factor	120	1.81	0.81			

Source; Field survey, 2023
0.05

p>

Table 1 revealed that r_{cal} (0.247*) is greater than r_{tab} (0.178) at 0.05 level of significance. The null hypothesis is not accepted, this implies

that there is a significant influence of economic factors on performance of business enterprises owned by public tertiary Institutions

Hypothesis 2: There is no significant influence of legal-political factors on the performance of business

enterprises owned by state tertiary institutions in Osun state

Table 2: Correlation Analysis Showing influence of Legal-Political Factors on Performance of Business Enterprises Owned by Public Tertiary Institutions

Variables	N	Mean	S.D	r _{cal}	r _{tab}	decision
Business Performance	120	2.85	0.31	0.295*	0.178	Sig
Legal-Political Factors	120	1.66	0.81			

Source; Field survey, 2023
0.05

p>

Table 2 revealed that r_{cal} (0.295*) is greater than r_{tab} (0.178) at 0.05 level of significance. The null hypothesis is not accepted, this implies that there is a significant influence of legal-political factors on performance

of business enterprises owned by public tertiary institutions

Hypothesis 3: There is no significant influence of Socio-cultural factors on the performance of business enterprises owned by state tertiary institutions in Osun state

Table 3: Correlation Analysis on Influence of Socio-cultural Factors on Performance of Business Enterprises Owned by State Tertiary Institutions

Variables	N	Mean	S.D	r _{cal}	r _{tab}	decision
Business Performance	120	2.85	0.31	0.420*	0.178	Sig
Socio-cultural Factors	120	1.83	0.78			

Source; Field survey, 2023
0.05

p>

Table 3 revealed that r_{cal} (0.420*) is greater than r_{tab} (0.178) at 0.05 level of significance. The null hypothesis is not accepted, this implies that there is a significant Influence of socio-cultural factors on Performance

of Business Enterprises Owned by Public Tertiary Institutions

Hypothesis 4: There is no significant influence of competition factors on the performance of business enterprises owned by state tertiary institutions in Osun state

Table 4: Correlation Analysis Showing influence of on Competition Factors Performance of Business Enterprises Owned by State Tertiary Institutions

Variables	N	Mean	S.D	r _{cal}	r _{tab}	decision
Business Performance	120	2.85	0.31	0.283*	0.178	Sig
Competition Factors	120	1.94	0.72			

Source; Field survey, 2023
0.05

p>

Table 4 revealed that r_{cal} (0.283*) is greater than r_{tab} (0.178) at 0.05 level of significance. The null

hypothesis is not accepted, this implies that there is a significant influence of competition factors on performance of

business enterprises owned by state tertiary institutions

Discussion of Findings

Table 1 revealed that r_{cal} (0.247*) is greater than r_{tab} (0.178) at 0.05 level of significance. The null hypothesis is not accepted, this implies that there is a significant Influence of economic factors on Performance of Business Enterprises Owned by Public Tertiary Institutions. This is in line with the findings of Nwekpa and Ewans (2015) in their work on the effect of economic environmental factors on small scale business performance in Nigeria when they noted that high inflation rate, exchange rate, multiple tax, finances and interest rate as economic indices have a significant effect on the performance of small scale businesses in Nigeria.

Table 2 revealed that r_{cal} (0.295*) is greater than r_{tab} (0.178) at 0.05 level of significance. The null hypothesis is not accepted, this implies that there is a significant Influence of legal-political factors on Performance of Business Enterprises Owned by Public Tertiary Institutions. This is in support of the findings of Mark and Nwaiwu (2015) research work which showed that political environment has a negative impact on business performance of multinational companies in Nigeria).

Table 3 revealed that r_{cal} (0.420*) is greater than r_{tab} (0.178) at 0.05 level of significance. The null hypothesis is not accepted. This implies that there is a significant Influence of socio-cultural factors on Performance of Business Enterprises Owned by Public Tertiary Institutions. Joseph, Peter and Charles (2014) in their study, observed that there is positive effect of socio-cultural factors on the performance of business enterprise. Richie (2007) affirmed that

cultural-orientated products have many contents that reflect users' lifestyles as well as providing them with symbolic personal, social and cultural values that facilitate business performance.

Table 4 revealed that r_{cal} (0.283*) is greater than r_{tab} (0.178) at 0.05 level of significance. The null hypothesis is not accepted. This implies that there is a significant Influence of Competition factors on Performance of Business Enterprises Owned by state Tertiary Institutions. This is in line with the submission of Onikoyi (2017) who indicated that, the impact of product innovation and pricing on organizational performance was higher in the company when consumers perceive product innovation as stronger, more favorable and more unique.

Conclusion

Based on the findings of the study, it has been established that all the identified environmental factors (Economic, Legal-political factor, Socio-cultural factor and competition have great influence on the performance of Business Enterprises Owned by State Tertiary Institutions in Osun state. It was also concluded that in order to sustain good performance of Business Enterprises Owned by State Tertiary Institutions in terms of sales volume, assets acquisition, employees' satisfaction among others, factors like financial indiscipline among staff, management interference, culture of outsourcing job to contractors, undue appointment of members to sensitive position and internal crisis are major factor influencing performance of the enterprises. It was further concluded that other prevailing environmental factors like inflation, high lending rate, border closure policy, culture, competition. The study also concluded

that unavailability of credit facility were found to be challenges to the performance of business enterprise and where adequate attention are not paid to these factors, it would definitely impede the performance of the enterprise. Study further concluded that the performance of business enterprises is moderate.

Recommendations

In view of the findings from the study, the following recommendations were made:

- Institution's management should make fund available in form of grant and accord full support to the enterprise by awarding contract to these business enterprises for an enhanced good performance. Through this, they could make more money.
- Some of the government policies on tax that are unfriendly to business should be revisited and appointment of members of the ventures' management board to sensitive position should be based on credibility and qualification in order to avoid fraudulent practices..
- To beat the challenges of low sales during strike period, business enterprise should extend their market outside the campus area.
- The activities of the competitors to outsmart sales should be monitored regularly by the management of the enterprise so as to design appropriate mechanism to tackle them and Government should create an enabling flat legal requirement to all business enterprises to negate restriction impose by association of competitors

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OFFICE COMPETENCIES REQUIRED OF OTM GRADUATES FOR EFFECTIVE PERFORMANCE IN MODERN OFFICES IN TERTIARY INSTITUTIONS IN OSUN STATE

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Abstract

This study was carried out to identify the office competencies required of OTM graduates for effective performance in modern offices in tertiary institutions. Descriptive survey research design was adopted for the study. The population of the study consisted of 101 OTM graduates of four state owned tertiary institutions in Osun State. No sample was drawn as the population was manageable. A structured questionnaire containing 18 items was used for data collection. The study revealed that Word Processing and Power Point presentation competencies are required of Office Technology and Management graduates for effective performance in modern offices in tertiary institutions. The study concluded that equipping Office Technology and Management graduates with these competencies will help them to perform office tasks effectively when employed in business organizations upon graduation. The study recommended that Office Technology and Management administrators should periodically organize ICT training and re-training programmes for lecturers to up-date their ICT competencies so as to equip students with these competencies needed to perform job effectively after graduation.

Key Words: Office competencies, OTM graduates, Modern office.

Introduction

Higher education in Nigeria is the education given to students after secondary education in universities, colleges of education and polytechnics. The aim of tertiary education is to develop students with relevant competencies and skills needed to contribute to the development of the society and the nation.

Office Technology and Management which is offered at the Universities, Polytechnic and Colleges

of Education is concerned with the development of office skills to enable an individual to function effectively in the world of work (Onojeta, 2012). Abuokwen (2010) asserted that Office Technology and Management is an education for office and business skills required for use in business offices, clerical occupation and business policy analysis. Office Technology and Management programme, according to Amoor (2009), is a group of courses designed to prepare an individual to

acquire specific skills and competencies for efficient office services.

The dynamism of the 21st century has propelled Office Technology and Management programme in tertiary institutions to emphasize more on preparing students in the current practices shaping today's modern offices. Modern offices are gazette with information and communication technologies devoid of the manual way of performing office tasks. Nwazor and Onokpaunu (2016) stated that modern offices are automated offices that provide new ways of performing daily business activities. In modern offices, tasks are performed electronically rather than manually. Office Technology and Management programmes in Nigeria, however, are often criticized for deficiencies in producing competent students needed for optimum performance in technologically-oriented offices (Jackson, 2013). The outcome is graduates' poor performance in organizations, increase in graduate unemployment rate as well as global economy.

Azike (2012) observed that Office Technology and Management programme has continued to produce incompetent graduates who cannot adapt to the technological changes. Despite higher institutions efforts in equipping Office Technology and Management students with competencies and knowledge, it appears that the complaints are still prevalent that Office Technology and Management graduates possess little or no competencies for effective job performance in modern offices. So there is need to identify areas of competencies industries mostly required from graduates and incorporate them in the Office Technology and Management curriculum.

According to Olaitan (2013), to be competent means that the individual has acquired the knowledge, skills, attitude and judgment which he requires in order to perform successfully at a specified proficiency level in any given work. In the context of this paper, competency means the ability of students most especially Office Technology and Management graduates to put into practice the competencies and skills acquired by them to improve the office work/responsibilities for effective performance in modern office.

Competencies are abilities, knowledge, attitudes and facts necessary for accomplishing tasks (Okoro, 2012). The success of Office Technology and Management programmes can be measured by the official duty performance level of graduates of the programme in the world of work. Office competencies of Office Technology and Management for effective performance in modern offices include Word Processing, Microsoft Presentation, Desktop Publishing and Database Management.

Word processing competencies enable OTM graduates to work through a document and delete, insert and replace text, and also perform additional features such as creating, formatting, printing and saving of document without much stress (Brain & Stacey, 2010). Office Technology and Management competencies are in evitable in the activities of modern offices because they enable OTM graduates to utilize modern office machines for producing office correspondence, printing of textbooks, journals, articles and newspapers etc.

Microsoft Presentation (PowerPoint) competencies on the other hand enable OTM graduates to communicate without necessarily seeing one another. These competencies enable OTM graduates

to understand the benefits of teamwork, collaboration and information sharing features of the modern office.

Akpomi and Ordu (2009) reported that many tertiary institutions have computers and other modern office technological gadgets. Some however do not have and this affect the productivity of Office Technology and Management graduates in such organizations. In support, Aliata and Hawa (2014) disclosed among others that the availability and use of modern office equipment will inevitably affect the activities and output of Office Technology and Management graduates in offices and business organizations. Currently, the fact that Office Technology and Management graduates are roaming the streets instead of being employed in business offices intensified the need for this study which sought to determine the office competencies required of business education graduates for effective performance in modern offices.

Statement of the Problem

Before the advent of ICT in offices, Office Technology and Management graduates mainly required basic office competencies such as ability to read, write and communicate, keyboarding with speed and accuracy and ability to follow instructions to perform office functions. However, the invasion of ICT in offices demands that Office Technology and Management graduates need other competencies in order to fit into the era of technologically induced modern offices. Poor acquisition of these competencies by Office Technology and Management graduates would likely render them unfit for modern office functions. The problem of this study, therefore, is that there seem to

be a wide gap between competencies required by Office Technology and Management graduates for effective performance in modern business organizations and what they are being taught in the programme. This could be the reason why many Nigerian Office Technology and Management graduates are roaming the streets instead of being employed in business offices (Azike, 2012). If this trend is not addressed, it could worsen the already existing graduate unemployment rates. It could also lead to non-achievement of objectives of Office Technology and Management programme in tertiary institutions in Nigeria. Based on the foregoing, this study sought to determine the office competencies required of Office Technology and Management graduates for effective performance in modern offices in tertiary institutions.

Purpose of the Study

The main purpose of the study was to identify office competencies required of Office Technology and Management graduates for effective performance in modern offices in tertiary institutions. Specifically, the study sought to:

1. determine the Word Processing competencies required of Office Technology and Management graduates for effective performance in modern offices in tertiary institutions;
2. determine the PowerPoint presentation competencies required of Office Technology and Management graduates for effective performance in modern offices in tertiary institutions.

Research Questions

The following research questions guided the study:

1. What are the Word Processing competencies required of Office Technology and Management graduates for effective performance in modern offices in tertiary institutions?
2. What are the PowerPoint Presentation competencies required of Office Technology and Management graduates for effective performance in modern offices in tertiary institutions?

Literature Review

Concept of Competency

Competency in the view of Robenson (2010) is the ability to do something to a level that is acceptable. According to Olaitan (2013), to be competent means that the individual has acquired the knowledge, skills, attitude and judgment which he requires in order to perform successfully at a specified proficiency level in any given work.

Competency has two dimensions: knowledge and skill. Knowledge may be seen as our understanding of how our everyday world is constituted. Skills involve the ability to pragmatically apply, consciously or unconsciously our knowledge in practical settings (Spitzberg & Cupach, 2014). If such practical setting includes business organizations, then as pointed out by Ezeana (2014) in Ojukwu & Ojukwu (2016), competencies are the knowledge, skills and behaviours that will enable an employee to meet established performance criteria.

According to Buxton (2013), competency is the state of having the necessary skills or knowledge. European Commission Cedefop Glossary (2014) saw competency as the state or quality of being adequately or well qualified, having the ability to perform a specific role. It is the ability to do something well. Judy and Chris

in James (2014) contended that competency is the combination of knowledge, attitude, values and skills required to perform tasks in determined situations.

Competencies needed of Office Technology and Management Graduates

Competencies are a group of skills or attributes that employees need to carry out their work effectively. Competencies are the measurable or observable knowledge, skills, abilities, and behaviors (KSABs) critical to successful job performance. The following competencies are needed by OTM graduates for effective job performance:

1. **Writing Competencies:** Being able to communicate clearly and concisely is an important skill for a number of reasons. You may be required to draft reports or prepare correspondence. Even communicating with fellow colleagues and partners is often achieved through email, so it is important to be able to convey what you need to succinctly and effectively.
2. **Speaking and Listening Competencies:** Professionals must be able to communicate effectively when speaking to people. Demonstrating that you can communicate complex information to a non-technical audience is also valued by employers. In any verbal communication, you should always ensure that you speak carefully and clearly so that you are easily understood.
3. **Data Management Competencies:** This is important for collecting, managing and reporting data. It involves the capacity to use data

to improve processes and operations while analysing results and presenting findings to others.

4. **Modern Technology Competencies:**

Modern technology skills required by secretaries include: ability to use computer to create spreadsheets with packages like Microsoft excel, compose correspondences using packages like Microsoft words, word star, word perfect; manage data bases using software like Microsoft access, create presentations with Microsoft power point, publish reports and documents using desktop publishing software like Microsoft office publisher etc. OTM graduates are to acquire these technological skills so as to be technologically acquainted with innovations in the modern offices.

5. **Communication**

Competencies: Communication competencies refer to the knowledge of effective and appropriate communication patterns and the ability to use and adapt that knowledge in various contexts (Cooley & Roach, 2014). NCA (2011) has explained the following communication competencies as:

1. State ideas clearly.
2. Communicate ethically.
3. Recognize when it is appropriate to communicate.
4. Identify their communication goals.
5. Select the most appropriate and effective medium for communicating.
6. Demonstrate credibility.
7. Identify and manage misunderstandings.

6. **Technological**

Competencies: Professional and pedagogical knowledge, conics, mastering of advanced technologies that enrich skills, use of modern tools, techniques and technologies.

7. **Information Competencies:**

Is searching the necessary, important, useful information in an information environment, collection, sorting, processing and their targeted, reasonable, effective use.

Methodology

The design adopted for this study was the descriptive survey design. The population for the study consisted of 101 OTM graduates of four state owned tertiary institutions in Osun State. The population was not too large and therefore there was no sampling. The researcher distributed copies of the questionnaire to the respondents in their offices. Section 'A' of the questionnaire sought the demographic data of the respondents, while section 'B' contained Eighteen (18) items questionnaire which the respondents were requested to indicate their views and opinions on a 4-points scale of 'Strongly Agree' = 4 points, 'Agree' = 3 points, 'Disagree' = 2 points, 'Strongly Disagree' = 1 point. All copies of the questionnaire distributed were returned and considered valid. Simple mean measure of central tendency was used to analyse the data collected. Mean score of 2.50 and above were accepted as positive responses while below 2.50 were rejected.

Results

Research Question 1: What are the Word processing skills required by OTM graduates in modern office in tertiary institutions?

Table 1: Word processing skills required by OTM graduates in modern office

S/N	ITEMS	Mean	Remarks
The following are Word processing skills required by OTM graduates in modern office in tertiary institutions:			
1.	Ability to use different word processing packages/software	2.7	Positive
2.	Ability to type accurately and with speed	2.5	Positive
3.	Ability to change line spacing, margin and tabs	3.0	Positive
4.	Ability to emphasizes text by the use of underline, embold and italics	2.8	Positive
5.	Ability to move cursor round the active document	2.5	Positive
6.	Ability to select/highlight text	2.5	Positive
7.	Ability to understand the use of Tab to indent and paragraph	2.8	Positive
8.	Ability to add table to a document and edits rows and columns	2.9	Positive
9.	Ability to understands cut, copy, paste, bold, justify, centered and undo	3.0	Positive
10.	Ability to check and correcting spelling/grammatical errors	2.6	Positive
Grand mean		2.8	

Table 1 revealed a grand mean of 2.8 which is rated as “positive”. This shows that respondents agreed that ability to use different word processing packages/software, type accurately and with speed, change line spacing, margin and tabs, emphasize text by the use of underline, embold and italics, move cursor round the active document and check correct spelling/grammatical errors are Word

processing skills required by Office Technology and Management graduates in modern office in tertiary institutions.

Research Question 2: What are the Power Point presentation competencies required of Office Technology and Management graduates for effective performance in modern offices in tertiary institution?

Table 2: PowerPoint presentation skills required by OTM graduates in modern office

S/N	ITEMS	Mean	Remarks
The following are PowerPoint presentation skills required by OTM graduates in modern office in tertiary institutions:			
1.	Ability to creates project templates	3.0	Positive
2.	Ability to create effects and animations	2.8	Positive
3.	Ability to create tables, charts and graphs	2.5	Positive
4.	Ability to insert clickers	2.5	Positive
5.	Ability to use slides and motion graphics	2.8	Positive
6.	Ability to insert audio, sound and video	2.9	Positive
7.	Ability to insert music to time with slides	3.0	Positive
8.	Ability to set up projector for presentations	2.6	Positive
Grand mean		2.7	

Table 2 revealed a grand mean of 2.7 which is rated as “positive”. This shows that respondents agreed that ability to creates project templates and effects, animations and motion graphics, tables, charts, and graphs,

insert clicker, use slides, insert audio, sound and video, and insert music to time with slides are Power Point presentation skills required by Office Technology and Management

graduates in modern office in tertiary institutions.

Discussion of Findings

Findings of the study indicated that respondents agreed that Word Processing competencies are required of Office Technology and Management graduates for effective performance in modern offices in tertiary institutions. The findings of the study is in line with Olayanju and Asogwa (2010) who revealed that just as the business offices have changed as a result of the introduction of ICT in offices, so do Office Technology and Management graduates need to possess electronic document processing competencies such as word processing, data processing and reprographics in order to perform effectively in the offices.

In support, Brain and Stacey (2010) posited that electronic document processing competencies are required of graduates of tertiary institutions so as to perform job tasks effectively. Brain and Stacey (2010) further stated that these competencies enable Office Technology and Management graduates to work through a document and delete, insert and replace text, and also perform additional features such as creating, formatting, printing and saving of document without much stress.

Findings of the study also revealed that respondents agreed that PowerPoint presentation competencies are required of Office Technology and Management graduates for effective performance in modern offices. The findings of this study concurs with that of Roy (2012) which revealed that since electronic collaboration technologies are used to accomplish organizational goals in modern offices, Office Technology and Management graduates require such electronic collaboration competencies as relationship building, communication,

collaboration, and internet skills, in order to succeed.

Conclusion

The findings have shown that employers want 'well-rounded' graduates with a broad range of competencies for performance in modern offices. The researchers conclude that equipping Office Technology and Management graduates with these competencies will help them to performance office tasks effectively when employed in business organizations upon graduation.

Recommendations

Based on the findings of this study, the following recommendations were made.

1. Office Technology and Management lecturers should lay more emphasis on equipping their students with Word processing and PowerPoint presentation competencies identified in this study. This will help them to gain employment in modern business organizations upon graduation and perform office functions effectively.
2. Office Technology and Management administrators should periodically organize ICT re-training programmes for lecturers to up-date their ICT competencies so as to equip students with these competencies needed to perform job functions effectively on graduation.
3. Curriculum planners should review the curriculum of Office Technology and Management graduates to incorporate ICT competencies as required by the graduates for effective performance in business organizations.

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IMPACT OF SUBSIDY REMOVAL ON CONSUMERS' ECONOMY AND MARKETING OF CONSUMER GOODS IN ADO-EKITI, EKITI STATE

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Abstract

The study examined the impact of subsidy removal on consumers' economy and marketing of consumer goods in Ekiti State. Specifically, the study investigated the impacts of subsidy removal on the economy of consumers, assessed the impact of subsidy removal on the marketing of consumers' goods and the impact of subsidy removal on consumer purchasing power in Ekiti State. The descriptive research design of the survey type was used in this study. The population for the study consisted of 4,106 consumers of groceries and related commodities in Ado-Ekiti. The sample for the study consisted of 200 consumers of goods selected from Ado-Ekiti, using simple random sampling technique. A self-designed questionnaire titled "Subsidy Removal and Consumer Goods Questionnaire" (SRCGQ) was used for the study. The data collected through the instrument were analyzed using descriptive and inferential statistics. The findings indicated a significant relationship between subsidy removal and the economy of consumers in Ekiti State, a significant relationship between subsidy removal and the marketing of consumer goods in Ekiti State and finally, there is a significant relationship between subsidy removal and consumer purchasing power in Ekiti State. The study therefore recommended that there should be development and implementation of comprehensive financial literacy programs to help consumers better manage their reduced disposable income and the government should formulate job creation initiatives and support small businesses to help offset the reduction in consumer purchasing power.

Keywords: Subsidy, Consumer's Economy, Marketing, Consumer goods

Introduction

Prices of goods and services have a significant impact on consumer behaviour in Nigeria and are closely related to the nation's current economic state. The populace in Nigeria have greatly been affected in terms of purchasing power and decision-making processes by unemployment and economic woes. The elimination of subsidies, a policy choice frequently made to alleviate budgetary constraints, encourage

market efficiency, and reallocate resources, seems to have a big impact on a nation's economy and consumer product marketing. In Nigeria, where subsidies have historically been given for necessities such as food and petroleum products, the removal of which may have repercussions across a number of industries, including consumer behaviour, market strategy and economic dynamics.

Over time, Nigeria has been conditioned to rely on fuel that is

subsidized. Fuel is the second most popular product in the nation used as an energy source, behind food (Ani, Onoja & Humbe, 2021). For instance, electricity frequently has epilepsy. For home use, the majority of families either use kerosene or premium motor spirit (PMS), sometimes known as gasoline. Low cost of fuel is essential to effective operations of many small enterprises, including farmers, barbershops, lodging facilities, welders, hair salons and more. Both private and commercial cars rely on fuel, specifically diesel and gasoline, for their energy needs. Consequently, the recent policy of the federal government of Nigeria on the removal of fuel subsidy may likely have direct and indirect repercussions on the economy and pricing of consumer goods. The government may not fully understand the short- and long-term effects of the policy on the entire economy, despite their concerns about the enormous amount of money spent on subsidies each year and their belief that such resources would be better used to provide essential infrastructure (Muktar, 2023).

The term "fuel subsidy" refers to the practice of the government giving financial support to lower the cost of petroleum products, especially gasoline (petrol) and kerosene, for the Nigerian populace. The ultimate goal of the fuel subsidy is to make fuel more affordable for consumers by maintaining artificially low prices. However, because of the substantial economic and fiscal implications of the fuel subsidy, fuel subsidies has generated a great deal of controversy and debate in Nigeria. Nigeria spends more than any other oil-exporting nation in Africa on fuel subsidies, with an estimated 1.7% of GDP going toward these costs, according to an International Monetary Fund (IMF) analysis from 2019.

Nigeria first instituted fuel subsidies in the 1970s. In response to the 1973 oil price shock, part of the gasoline subsidy program was eliminated in 1986. Ever since, fuel subsidies have been in place. The government however, stopped paying for fuel subsidies in 2012. The withdrawal was met with massive protests aimed at compelling the government to reinstate the fuel subsidy that it had slashed. The government then reinstated fuel subsidies in 2012 in response to the large-scale protests. Since then, Nigeria has paid out a significant amount on petroleum subsidies. The government budget for 2022 was ₦17.126 trillion (US\$25.87 billion), of which ₦4 trillion (US\$6.088 billion) was allocated to fuel subsidies. As a result, Nigeria's government announced that fuel subsidy would be removed in June, 2023 (Ozilli & Obiora, 2023).

The recently sworn-in administration, headed by Chief Bola Ahmed Tinubu, has promised to eliminate all gasoline subsidies in the nation or fully liberalize the downstream oil sector. Not only do fuel prices automatically increase within 30 minutes of the president's speech, but transportation, food, and production costs also rise automatically. The withdrawal of fuel subsidies also affected small firms, employees, and students in numerous ways. Regardless of location, the effect was felt in all economic sectors, and how well people are able to adjust to the shifting economic conditions will determine how much of an influence they had. Nigeria's economic policies seem to have changed significantly with the removal of petroleum subsidies. The effects on inflation, transportation costs, and people's ability to support themselves cannot be disregarded, even while the goal may

be to alleviate budgetary constraints and promote market-driven pricing (Ogunode, Ahmed & Olugbenga, 2023). The elimination of subsidies seems to have harmed both public and private entities. Affected institutions include the judiciary, educational institutions, financial institutions, health institutions, religious institutions, political institutions, and the tourism industry.

Removal of subsidies may likely have a wide range of repercussions on the economy and consumer products marketing, including reduced demand, price rises, inflation, budget deficits, market efficiency, and competitive landscape. Prices for consumer goods that were previously subsidized typically rise when such subsidies are eliminated. This may affect consumer cost of living and result in general inflationary pressures. Energy subsidies were removed, which showed that they increased energy prices and fuelled inflation in several nations (Bournay, 2020). Customers may find it more difficult to spend money on other products and services as a result, which could negatively impact their purchasing power.

Government finances were burdened by subsidies, which led to budget deficits. Eliminating them can lessen this load and result in fiscal measures that are more long-term. The removal of energy subsidies enabled governments to lower their budget deficits and reallocate funds to other priority areas, such healthcare and education, according to research on the effects of energy subsidy reforms on government budgets (Baena-Grande et al. 2021). Based on the fact that subsidies change the dynamics of supply and demand, they frequently result in market inefficiencies. In the event that subsidies are eliminated, prices will be free to adjust in accordance with real supply and

demand. It was discovered that the elimination of agricultural subsidies increased market efficiency and raised the competitiveness of the agricultural sectors across a number of nations. This can encourage producers to innovate and invest in more efficient production methods (Navajas-Gallego *et al.*, 2019).

Prices of previously subsidized consumer items will rise when subsidy is removed. This may have effect on marketing plans. In order to reflect the new price points, business owners might need to reposition their products and modify their pricing strategy. Since fuel subsidies were removed in Nigeria, business owners have had to invest in significant marketing campaigns to notify customers of price hikes. This highlights the need of effective communication in informing customers about price changes (Nair et al., 2020). The withdrawal of subsidies may result in higher pricing, which could reduce demand for consumer goods. In response, customers might cut back on their consumption or look for less expensive alternatives. Marketers need to review their target market, identify price-sensitive segments, and maybe present lower-cost options to sustain consumer interest and involvement. Furthermore, when prices become more indicative of market dynamics, the elimination of subsidies may foster a more competitive marketplace. Businesses that can effectively sell high-quality goods at reduced costs might have an advantage over rivals. Marketers need to re-assess their marketing mix, reposition products, and establish strong value propositions to differentiate themselves in the new competitive landscape (Nair et al., 2020).

The economy and the marketing of consumer goods may be

significantly impacted by the withdrawal of subsidies. It has an impact on pricing, demand, market efficiency, inflation, budget deficits, and the competitive environment. Companies need to alter their marketing tactics to cater for the shifting dynamics of subsidy elimination. Effective communication and well-designed regulations are essential for minimizing negative impacts and facilitating a seamless transition for customers and the economy.

Statement of the Problem

Subsidy has been a policy employed by governments all over the world to promote different sectors of the economy, including the consumer goods sector. Subsidies may also have unforeseen repercussions that put a heavy load on government finances, cause inefficient resource allocation, and distort the market. In view of this, several nations have been considering the prospect of eliminating or lowering subsidies, especially when it comes to consumer products, in an effort to strengthen budgetary restraint, foster market competition, and encourage more environmentally friendly consumption habits. The economy as a whole may be significantly impacted by the elimination of subsidies. On the one hand, it may result in more effective resource allocation, less market distortions, and more budgetary restraint, all of which may encourage increased competitiveness and innovation. Higher pricing for customers, especially those in low-income households, may have a detrimental effect on their standard of living and purchasing power. Additionally, the removal of subsidies may have distributional impacts, harming some groups more than others.

The marketing of consumer goods may be significantly impacted by the elimination of subsidies. In order to cover the higher expenses brought about by the removal of subsidies, producers and retailers might need to modify their price plans, tactics for differentiating their products, and approaches to promotions. In order to effectively reach and keep their client base, marketers may also need to review their market segmentation and focused marketing techniques in light of changes in consumer behaviour, such as a trend towards more reasonably priced alternatives or substitute items. It is on this note that the study seek to examine the impact of subsidy removal on the economy and marketing of consumer goods in Ekiti State.

Purpose of the Study

The purpose of this study is to examine the impact of subsidy removal on consumers' economy and marketing of consumer goods in Ekiti State. Specifically, the study:

- i. examined the impact of subsidy removal on the economy of consumers' in Ekiti State;
- ii. assessed the impact of subsidy removal on the marketing of consumers goods in Ekiti State;
- iii. examined the impact of subsidy removal on consumer purchasing power in Ekiti State.

Research Questions

This study is guided by the following research questions:

- i. What are the impacts of subsidy removal on the consumers' economy in Ekiti State?
- ii. What the impacts of subsidy removal on the marketing of consumer's goods in Ekiti State?
- iii. What are the impact of subsidy removal on consumer purchasing power in Ekiti State?

Research Hypotheses

The following null hypotheses were formulated to guide the study

- i. There is no significant relationship between subsidy removal and consumers' economy in Ekiti State;
- ii. There is no significant relationship between subsidy removal and the marketing of consumers goods in Ekiti State;
- iii. There is no significant relationship between subsidy removal and consumer purchasing power in Ekiti State.

Methodology

The study adopted descriptive research design of the survey type. The population for the study consisted of 4,106 consumers of groceries and related commodities in Ado-Ekiti, as provided by the Ekiti Chamber of Commerce, Industry, Mines and Agriculture (EKICCIMA) (<https://www.ekitchamber.com.ng/>). The sample for the study consisted of 200 consumers of goods selected from

Ado-Ekiti, Ekiti State using simple random sampling technique. An instrument titled "Subsidy Removal and Consumer Goods Questionnaire" (SRCGQ) was used for the collection of data for the study. The reliability of the instrument was determined through test re-test method to obtain a reliability coefficient of 0.83 which was adjudged reliable. The instrument was administered by the researcher to the respondents with the help of a research assistant through self-distribution which ensured proper monitoring and self-supervision. The data collected were analyzed using descriptive and inferential statistics. The research questions were answered using descriptive statistics of mean count and standard deviation while the hypotheses were tested using inferential statistics of Pearson Product Moment Correlation at 0.05 level of significance.

Results

Research Question 1: What are the impacts of subsidy removal on the economy of consumers in Ekiti State?

Table 1: Descriptive analysis showing the impacts of subsidy removal on the economy of consumers

S/N	ITEMS	Mean	SD	Remarks
1	The removal of subsidies has significantly reduced my disposable income.	3.27	0.85	Agree
2	I have noticed an increase in the overall cost of living since the subsidy removal.	3.41	0.75	Agree
3	My purchasing power for essential goods and services has decreased.	3.36	0.57	Agree
4	I have had to seek additional sources of income to maintain my standard of living.	3.35	0.74	Agree
5	I have had to reduce my savings or investments due to increased expenses.	3.30	0.85	Agree
6	The removal of subsidies has affected my ability to pay for healthcare services.	3.43	0.60	Agree
7	I have experienced difficulty in affording educational expenses since the subsidy removal.	3.47	0.50	Agree
N=200		Mean cut off = 2.50		

The impacts of subsidy removal on the economy of consumers in Ekiti State was presented in table 1. Using the criterion mean score of 2.50 as cut-off to determine the impacts, it was indicated that respondents agreed to all statement in table 1. It implies that the removal of subsidies has reduced disposable income and there is an increase in the overall cost of living. Since the subsidy removal, purchasing power for essential goods and services

has decreased. The removal of subsidies has affected the ability to pay for healthcare services and respondents have experienced difficulty in affording educational expenses since the subsidy removal.

Research Question 2: What are the impacts of subsidy removal on the marketing of consumers' goods in Ekiti State?

Table 2: Descriptive analysis showing the impacts of subsidy removal on the marketing of consumers' goods

S/N	ITEMS	Mean	SD	Remarks
1	I have noticed an increase in promotional offers and discounts since the subsidy removal.	2.84	1.11	Agree
2	Companies seem to be emphasizing value for money more in their marketing messages.	3.03	0.94	Agree
3	There has been a shift towards marketing more affordable product variants or sizes.	2.82	1.21	Agree
4	Brands appear to be focusing more on essential features rather than luxury aspects in their marketing.	3.13	0.87	Agree
5	Marketing messages increasingly emphasize cost-saving benefits of products.	3.27	0.44	Agree
6	I have noticed more bundled offers or package deals in product marketing.	3.09	0.97	Agree
7	Marketing campaigns seem to be more targeted towards budget-conscious consumers.	3.01	0.86	Agree

N = 200 Mean Cut Off = 2.50

The impacts of subsidy removal on the marketing of consumers goods in Ekiti State is presented in table 2. Using the criterion mean score of 2.50 as cut-off to determine the impacts, it

was indicated that respondents agreed to all statement in table 2.

Research Question 3: What are the impact of subsidy removal on consumer purchasing power in Ekiti State?

Table 3: Descriptive analysis showing the impact of subsidy removal on consumer purchasing power

S/N	ITEMS	Mean	SD	Remarks
1	My ability to purchase the same quantity of goods has decreased since the subsidy removal.	3.29	0.82	Agree
2	I find myself buying lower-quality products to maintain my budget after the subsidy removal.	3.13	0.98	Agree
3	My discretionary spending on leisure activities has decreased due to reduced purchasing power.	3.11	0.91	Agree
4	I am more likely to postpone major purchases due to budget constraints.	3.00	0.61	Agree
5	The variety of products I can afford has diminished since the subsidy removal.	3.44	0.84	Agree
6	I find myself more frequently looking for sales or discounts to maintain my purchasing habits.	3.41	0.87	Agree
7	My ability to save money has been negatively impacted by the reduction in purchasing power.	3.30	0.81	Agree
8	I have had to switch to cheaper brands for many products to stay within my budget.	3.55	0.79	Agree
N=200		Mean cut off = 2.50		

Table 3 revealed the impact of subsidy removal on consumer purchasing power in Ekiti State. Using the criterion mean score of 2.50 as cut-off to determine the affirmation of each statement, it was indicated that

respondents agreed to all statement in table 3.

Testing of Hypotheses

Hypothesis One: There is no significant relationship between subsidy removal and the economy of consumers in Ekiti State.

Table 4: Pearson's Product Moment Correlation showing the Relationship between subsidy removal and the economy of consumers

Variables	N	Mean	Standard Deviation	r-cal	P-value
Subsidy Removal	200	22.80	4.68	0.657	0.000
Economy of consumer	200	23.59	2.77		

* $P < 0.05$

Table 4 showed a significance relationship between subsidy removal and the economy of consumers ($p < 0.05$), with a correlation coefficient (r-cal) of 0.657, p-value = 0.000. Therefore, the hypothesis formulated which states there is no significant

relationship between subsidy removal and economy of consumers is thereby rejected.

Hypothesis Two: There is no significant relationship between subsidy removal and the marketing of consumers' goods in Ekiti State

Table 5: Pearson's Product Moment Correlation showing the Relationship between subsidy removal and the marketing of consumers' goods

Variables	N	Mean	Standard Deviation	r-cal	P-value
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Subsidy Removal	200	22.80	4.68		
Marketing of Consumer Goods	200	21.21	4.96	0.363	0.000

*P < 0.05

Table 5 found a significance relationship between subsidy removal and the marketing of consumers goods, with correlation coefficient (r-cal) of 0.363, p-value = 0.000 ($p < 0.05$). Therefore, the hypothesis formulated which states that there is no significant relationship between the

between subsidy removal and the marketing of consumers goods of courses in tertiary institutions is therefore rejected.

Hypothesis Three: There is no significant relationship between subsidy removal and consumer purchasing power in Ekiti State

Table 6: Pearson's Product Moment Correlation showing the Relationship between the subsidy removal and consumer purchasing power

Variables	N	Mean	Standard Deviation	r-cal	P-value
Subsidy Removal	200	22.80	4.68		
Purchasing Power	200	26.24	4.60	0.378	0.000

*P < 0.05

Table 6 revealed a significance relationship between subsidy removal and consumer purchasing power of goods, with correlation coefficient (r-cal) of 0.378, p-value = 0.000 ($p < 0.05$). Therefore, the hypothesis formulated which states that there is no significant relationship between the subsidy removal and consumer purchasing power of goods in tertiary institutions is therefore rejected.

Discussion

Findings of the study reported reduced disposable income, increased cost of living, and decreased purchasing power for essentials. Notably, the ability to afford healthcare and education was negatively impacted. This finding support other studies demonstrating how fuel subsidy removals can exacerbate poverty and inequality (Rentschler & Bazilian, 2017).

In terms of marketing impacts, the study found that consumers have adapted their strategies in response to reduced consumer purchasing power. There was an increase in promotional

offers, emphasis on value for money, and marketing of more affordable product variants. This shift in marketing approach reflects businesses' need to retain price-sensitive customers in a challenging economic environment (Kotler & Armstrong, 2018).

The findings also revealed significant negative impacts on consumer purchasing power. Respondents reported decreased ability to purchase the same quantity of goods, switching to lower-quality products, and postponing major purchases. This reduction in purchasing power can have ripple effects throughout the economy, potentially slowing economic growth (Coady *et al.*, 2019).

The findings revealed from the first hypothesis that there is a significant relationship between subsidy removal and the economy of consumers in Ekiti State. The statistical analysis revealed a significant positive correlation ($r = 0.657$, $p < 0.05$) between subsidy removal and changes in consumer economy. This positive relationship indicates that the removal of fuel subsidies has had substantial

and measurable effects on the economic well-being of consumers in the region. This finding aligns with previous research on the impacts of subsidy reforms carried out by, Soile and Mu (2015) who found that fuel subsidy removals in Nigeria disproportionately affected lower-income households, reducing their purchasing power for essential goods. Similarly, Rentschler and Bazilian (2017) demonstrated how such policy changes can exacerbate poverty and inequality, particularly in developing economies.

The second hypothesis stated that there is a significant relationship between subsidy removal and the marketing of consumer goods in Ekiti State. This relationship, indicates a notable shift in marketing approaches in response to the changing economic landscape. The findings suggest that businesses have adapted their marketing strategies to address the reduced purchasing power of consumers following the subsidy removal. These results are consistent with contemporary marketing literature. Kotler and Armstrong (2018) emphasize the need for businesses to adapt their marketing strategies in response to significant economic changes. The observed shift towards emphasizing value for money, promoting more affordable product variants, and increasing promotional offers aligns with strategies for retaining price-sensitive customers in challenging economic environments (Kotler & Keller, 2016).

The third hypothesis revealed there is a significant relationship between subsidy removal and consumer purchasing power in Ekiti State. This finding indicates that the removal of fuel subsidies has had a measurable impact on the ability of consumers to purchase goods and services. The moderate strength of this

correlation suggests that while the impact is significant, other factors may also be influencing purchasing power. These results are in line with broader economic research on the effects of subsidy reforms. Coady *et al.* (2019) note that reductions in fuel subsidies can lead to decreased purchasing power, particularly for lower-income households. This can have ripple effects throughout the economy, potentially slowing economic growth and affecting consumption patterns.

Conclusion

Based on the findings of this study, it was concluded that the removal of subsidies has led to increased expenditure on goods, reduced disposable income, and a shift towards more affordable alternatives, often at the cost of quality. These changes have rippled through the economy, affecting not only daily purchases but also essential services like healthcare and education. The research also highlighted how businesses have adapted their marketing strategies in response to these economic shifts, focusing more on value propositions and budget-conscious consumers. These relationships underscore the far-reaching consequences of such policy decisions on both individual consumers and the broader market dynamics.

Recommendations

Based on the findings of this study, the following recommendations were made.

1. Government should implement a gradual subsidy removal process to allow consumers time to adjust their budgets and consumption patterns.
2. Government should develop and implement comprehensive financial literacy programs to help consumers better manage their reduced disposable income.

3. Government should formulate job creation initiatives and support small businesses to help offset the reduction in consumer purchasing power.
4. Encourage businesses to focus on value-based marketing strategies that emphasize cost-effectiveness and essential features of products.
5. Implementation of policies to stimulate economic growth and job creation to help offset the reduction in purchasing power.
6. Conduct regular economic impact assessments to monitor the ongoing effects of subsidy removal and adjust policies accordingly.

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THE ROLE OF ARTIFICIAL INTELLIGENCE IN MODERNIZING OFFICE WORKFLOWS: IMPLICATIONS FOR ECONOMIC DEVELOPMENT

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Abstract

Artificial Intelligence (AI) is rapidly transforming traditional office workflows, leading to significant advancements in economic progress. This paper explores the role of AI in modernizing office workflows, focusing on its ability to enhance productivity, modernize operations, and foster innovation. By automating routine tasks, AI enables employees to focus on higher-value activities, thus improving overall efficiency and decision-making processes. The integration of AI into office environments not only reduces operational costs but also creates new opportunities for economic growth through the development of innovative business models and services. However, the adoption of AI also presents challenges, including workforce displacement and the need for upskilling. This paper discusses these implications, emphasizing the importance of a balanced approach to AI implementation that maximizes economic benefits while addressing potential risks. The paper therefore recommends among others that governments and organizations should establish robust policies that support AI adoption while addressing its societal impacts. Continuous investment in education and training programme essential to prepare the workforce for the changes brought about by Artificial Intelligence (AI).

Keywords: Artificial Intelligence, Office Workflows and Economic Development

Introduction

Traditional office workflows have long been the backbone of business operations, heavily

dependent on manual processes, paper-based documentation, and face-to-face communication. These methods, while effective in their time,

often resulted in inefficiencies and a lack of flexibility in responding to the rapidly changing business environment (Ogunniyi, 2020). However, the advent of Artificial Intelligence (AI) is revolutionizing these traditional workflows, ushering in an era of more efficient, data-driven, and automated office environments. Artificial Intelligence is a multidisciplinary field focused on creating machines or software capable of intelligence behaviour. It aims to develop systems that can perform tasks requiring human like cognition (Russel & Norvig 2016). Notably, AI also plays a significant role in transforming office routines by automating repetitive tasks, enhancing productivity and improving decision-making processes.

AI technologies, including machine learning, natural language processing, and robotic process automation, are increasingly becoming integral components of modern offices. These technologies have the potential to optimize a wide range of tasks, from routine administrative duties to complex decision-making processes, leading to significant improvements in productivity and operational efficiency (Ajibola & Oluwafemi, 2022). For instance, AI-powered systems can automate repetitive tasks such as data entry, scheduling, and customer support, in term of inquiries or enhancing communication that freeing up human resources for more complex interaction thereby make employees to focus on higher-value activities that require creativity and critical thinking (Musa & Adebisi, 2021). According to Olutokun, (2010) office workflows describe the method, and approaches and duties employed in the day-to-day administration of an office. It includes a board variety or actions meant to guarantee the productive and successful operation of the workplace.

Furthermore, AI's role extends beyond task automation to enhancing decision-making processes through advanced data analytics. By leveraging large data sets and sophisticated algorithms, AI systems can provide insights that help businesses make more informed and timely decisions. This capability is particularly valuable in today's data-rich business environment, where the ability to quickly analyze and respond to market trends can provide a significant competitive advantage (Zhou & Gao, 2021).

The integration of AI into office environments not only drives operational efficiency but also fosters innovation, enabling businesses to develop new models and services that contribute to economic development. As organizations continue to adopt AI technologies, it is crucial to examine the broader implications of this transformation, particularly in terms of economic impact and workforce dynamics (Bello, 2020 & World Economic Forum, 2021). Therefore, this paper explores the role of AI in modernizing office workflows and discusses its implications for economic development, highlighting both the opportunities and challenges presented by this technological shift.

Concept of Artificial Intelligence (AI)

Artificial Intelligence is the imitation of human intelligence in machines that are programmed to think, learn and adapt like people do or to mimicking human thought processes or by creating entire new forms of intelligence that can perform humans in specific areas. A system that is intended to accomplish tasks that normally involve human cognitive functions such as thinking, learning, problem solving, perception, language comprehension, and decision making

(Bostrom, 2014). Artificial intelligence makes decisions and completes tasks independently by utilizing algorithms, machine learning approaches. Machine learning is a subtype of AI that allows computers to learn from data and improve performance over time without being explicitly programmed, an algorithm that sees patterns, generate predictions, and learn from experience. Also, AI has the ability to comprehend, interpret, and generate human language. It allows machines to comprehend and respond to written or spoken language in a way that is meaningful with computer vision that enable machines to interpret and understand visual data from the world, such as images or video, allowing for facial recognition, object detection and more. AI is also referred to as a robotics that enhances machines' ability to perceive their environment and perform physical tasks in parallel without depending on human being, making them useful for industries, business, office environment, healthcare and logistics.

Artificial Intelligence (AI) has emerged as a transformative force in the workplace, significantly altering traditional office workflows. By automating routine tasks, enhancing decision-making processes, and fostering innovation, AI has the potential to modernize office environments in ways that drive substantial economic development. This technological shift promises increased productivity, cost efficiency, and the creation of new economic opportunities across various sectors. However, the rapid adoption of AI also raises critical concerns that must be addressed to fully realize its benefits. As AI technologies increasingly permeate the workplace, they bring about significant changes in how tasks are performed, decisions are made, and innovation is fostered.

The Evolution of Office Workflows

Traditional Office Workflows

Historically, office workflows have been characterized by manual processes that were integral to the daily operations of businesses. These processes included tasks such as data entry, filing, and communication, all of which relied heavily on physical documentation and human intervention. These methods were once considered sufficient for managing business activities, however, they often led to various inefficiencies, errors, and delays that ultimately hindered productivity. As businesses grew and the pace of operations increased, these traditional practices became increasingly inadequate for meeting the demands of a fast-paced business environment, especially now that technology has engulfed every business arena.

Manual Data Entry and Filing Systems

One of the most significant aspects of traditional office workflows was the reliance on manual data entry and filing systems. Employees were tasked with entering data by hand, whether it was for accounting, inventory management, or customer records. This manual process was not only time-consuming but also prone to human error. Even a small mistake in data entry could lead to significant issues down the line, such as incorrect financial reporting or miscommunication with clients (Ogunniyi, 2020). Moreover, the physical filing systems used to store documents required substantial space and resources to manage. Files were often stored in cabinets, and locating specific documents could be a labor-intensive task, further slowing down office processes.

Communication and Coordination Challenges

Communication within traditional office environments also relied heavily on face-to-face interactions, memos, and telephone calls. While these methods facilitated direct communication, they were often inefficient, particularly in large organizations or those with multiple locations. The lack of centralized communication systems meant that information could easily be lost, misinterpreted, or delayed, leading to coordination challenges across departments (Ajayi, 2021). Additionally, the reliance on physical memos and documents for communication often resulted in bottlenecks, as the distribution and acknowledgment of these communications could take time.

Impact on Productivity and Efficiency

The limitations of traditional office workflows were particularly evident in their impact on productivity and efficiency. Manual processes were inherently slow, and the potential for errors meant that additional time was often required to review and correct mistakes. Adebajo & Olawale, (2023) asserted that manual accounting processes required meticulous checks and balances, which could delay financial reporting and decision-making. Similarly, the reliance on physical documentation meant that employees spent considerable time managing paperwork rather than focusing on more value-added activities.

These inefficiencies were further compounded by the lack of technology to automate routine tasks. Without automation, employees were burdened with repetitive tasks that could have been completed more quickly and accurately by machines. The absence of digital tools also

limited the ability to analyze data in real-time, making it challenging for businesses to respond swiftly to market changes or operational issues (Ifeoma & Ayodeji, 2022).

Need for Modernization

The growing recognition of these inefficiencies highlighted the need for more efficient, accurate, and faster methods of handling routine tasks. As businesses faced increasing competition and the need for rapid decision-making, the limitations of traditional office workflows became more apparent. This need for modernization laid the groundwork for the adoption of new technologies, such as computers and, eventually, artificial intelligence (AI), which have since revolutionized office environments (Nwogu, 2021).

The Introduction of Technology and the Shift towards AI-Driven Workflows

Introduction of Technology in the Office

The integration of technology into traditional office practices began with the widespread adoption of computers and the internet, marking the first major revolution in how businesses operated. Egbunike & Onyekwena, (2019) stated that the advent of computers brought about significant improvements, particularly in communication, data management, and document handling. For instance, the introduction of email replaced physical memos and letters, allowing for faster and more reliable communication within and between organizations.

Data management also saw considerable enhancements with the use of computers. Where once physical filing systems were the norm, requiring extensive space and time to manage, digital storage solutions

allowed for more efficient data organization and retrieval. Documents could be stored electronically, making them easier to access, share, and secure. This shift reduced the time and resources needed for data management and helped mitigate the risks associated with physical document storage, such as loss or damage (Ajayi, 2021).

Moreover, the automation of basic tasks became possible with the development of software applications tailored to specific business needs. Spreadsheets, word processors, and database management systems simplified operations, allowing employees to perform tasks more quickly and with greater accuracy. These technological advancements significantly improved overall productivity and laid the groundwork for further innovations in office practices. However, the true paradigm shift in office workflows came with the advent of Artificial Intelligence (AI). While the initial technological advancements focused on improving existing processes, AI introduced a new level of efficiency by enabling smarter, more automated workflows that could handle complex tasks with minimal human intervention. This shift marked the beginning of a new era in office management, where AI-driven tools began to replace traditional methods, leading to transformative changes in how businesses operated (Nwogu & Chikezie, 2023).

The Shift towards AI-Driven Workflows

The introduction of AI into office environments has fundamentally transformed how businesses manage their operations. AI-driven workflows have revolutionized office practices by

automating routine tasks, improving accuracy, and enhancing decision-making processes. These advancements have made office environments more productive and responsive to the needs of the modern economy.

One of the most significant impacts of AI has been the automation of routine tasks. Tasks such as data entry, scheduling, and even customer service can now be handled by AI systems, reducing the need for human intervention. For example, AI-powered chatbots are commonly used to manage customer inquiries, providing quick and accurate responses without the need for a human representative (Musa & Adebisi, 2022). This automation not only increases efficiency but also allows employees to focus on more strategic tasks that require critical thinking and creativity.

Furthermore, AI technologies such as machine learning have enhanced decision-making processes within organizations. Machine learning algorithms can analyze vast amounts of data to uncover patterns and provide insights that inform strategic decisions. This capability is particularly valuable in industries that rely on data-driven decision-making, such as finance, healthcare, and marketing (Smith & Anderson, 2020). By leveraging AI, businesses can make more informed decisions, reduce the risk of human error, and respond more quickly to market changes.

Natural Language Processing (NLP) is another AI technology that has significantly improved office practices. NLP enables AI systems to understand and generate human language, facilitating more effective communication. For instance, AI-driven tools can automatically transcribe meetings, analyze customer feedback, or even generate content, thereby streamlining communication

processes within organizations (Zhou & Gao, 2021). These tools not only enhance productivity but also improve the quality of communication, ensuring that important information is accurately captured and disseminated.

The integration of AI into office workflows has also contributed to more personalized and efficient customer service. AI systems can analyze customer data to provide tailored recommendations, predict customer needs, and offer proactive support. This level of personalization helps businesses build stronger relationships with their customers, ultimately leading to increased satisfaction and loyalty (Adeyemi & Samuel, 2023).

Impact of AI on Office Efficiency and Productivity

- (i) **Automation of Routine Tasks:** One of the most significant impacts of AI on office workflows is the automation of routine tasks. AI-driven systems can now handle tasks such as data entry, scheduling, and customer inquiries with greater speed and accuracy than humans. For instance, AI-powered chatbots are increasingly used to manage customer service queries, allowing human employees to focus on more strategic activities that require higher-level thinking and creativity (Musa and Adebisi, 2021). This shift not only reduces the workload for employees but also enhances the overall efficiency of business operations.
- (ii) **Enhanced Decision-Making:** AI's ability to process large data sets quickly and accurately has revolutionized decision-making in the workplace. Businesses can now

leverage AI for predictive analytics, which helps them make informed decisions based on real-time data. This capability is particularly valuable in sectors such as finance and healthcare, where timely and accurate decisions are crucial (Zhou & Gao, 2021). By providing deeper insights and identifying trends that may not be immediately apparent to human analysts, AI enhances the quality of decisions made within organizations.

- (iii) **Simplified Communication and Collaboration:** AI tools have also improved communication and collaboration within the workplace. Virtual assistants and collaborative platforms powered by AI facilitate seamless interaction among team members, even in remote work settings. These tools enable better project management and coordination, allowing teams to work together more effectively and efficiently, regardless of their physical locations (Adeyemi & Samuel, 2022). This has become increasingly important as remote and hybrid work models become more common, driven by the need for flexibility in the modern workforce.

Economic Benefit of AI-Driven of Office

- (i) **Increased Economic Productivity:** The adoption of AI in office workflows has a direct correlation with increased economic productivity. By simplifying office operations and reducing the time required to complete tasks, AI enables businesses to

operate more efficiently, leading to higher output. This increase in productivity contributes to economic growth, as businesses can deliver more value with fewer resources (Bello, 2020). The positive impact of AI on productivity is evident across various sectors, including finance, healthcare, and legal services, where automation and enhanced decision-making have become critical to success.

(ii) **Cost Efficiency and Resource Allocation:** AI-driven efficiencies also result in significant cost savings for organizations. By automating routine and repetitive tasks, businesses can reduce labor costs and reallocate resources to more strategic initiatives. This allows companies to invest in innovation and growth-oriented activities, further driving economic development (Onyema & Oladipo, 2021). For example, in the manufacturing sector, AI-powered systems can optimize production processes, reducing waste and improving overall efficiency.

(iii) **Creation of New Economic Opportunities:** Beyond enhancing existing business models, AI is also creating new economic opportunities. The rise of AI-related industries, such as AI consulting, development, and maintenance, is generating new markets and contributing to economic diversification. According to World Economic Forum, (2021) AI-driven innovation is leading to the development of new products and services, further expanding the economic impact of AI technologies. This creation

of new markets and industries underscores the transformative potential of AI in driving economic growth.

Challenges and Risks Associated with AI in the Workplace **Workforce Displacement**

The adoption of AI also presents significant challenges despite its benefits, particularly in terms of workforce displacement. As AI systems take over tasks traditionally performed by humans, there is a potential for job losses, especially in roles that involve repetitive and routine work. This displacement highlights the need for reskilling and upskilling programs to prepare the workforce for an AI-driven future. Workers must be equipped with new skills that enable them to take on more complex and value-added roles in the workplace (Nwogu & Chikezie, 2023).

Ethical Considerations and Bias

AI systems are not without their ethical challenges. Since AI algorithms are trained on historical data, they can perpetuate existing biases, leading to unfair or discriminatory outcomes in decision-making processes. Addressing these biases is crucial to ensuring that AI applications are fair and equitable in the workplace. Moreover, ethical considerations around Adekunle & Ibrahim, (2020) asserted that AI use must be at the forefront of AI development and deployment to avoid reinforcing societal inequalities.

Security and Privacy Concerns

The integration of AI into office practices also raises concerns about data security and privacy. As AI systems process large amounts of sensitive data, the risk of data breaches and unauthorized access increases. Organizations must implement robust security measures and best practices to protect sensitive information and

ensure that AI systems are secure from cyber threats (Johnson & Roberts, 2022). Failure to address these concerns can lead to significant legal and reputational risks for businesses.

Strategies for Successful AI Integration in Office Environments

Policy Recommendations

To ensure the successful integration of AI in office environments, it is essential that both government and organizational policies support AI adoption. These policies should balance the benefits of AI with its societal impacts, ensuring that economic gains do not come at the expense of ethical considerations. UNCTAD, (2022) asserted that policymakers should focus on creating a regulatory framework that encourages innovation while safeguarding public interests. This includes developing standards for AI use that promote transparency, accountability, and fairness.

Investment in Education and Training

Investing in education and training programs is critical to preparing the workforce for the changes brought about by AI. Continuous learning and adaptability are key to equipping employees with the skills needed to thrive in modern office environments. This investment in human capital is essential for ensuring that the benefits of AI are widely shared and that workers are not left behind in the transition to an AI-driven economy (Ajibola & Oluwafemi, 2022). Educational institutions and organizations must collaborate to provide training programs that align with the demands of the AI-driven workplace.

Promoting Innovation and Responsible AI Use

Finally, organizations should foster a culture of innovation while ensuring that AI is used responsibly. This involves not only adopting AI technologies but also considering their broader implications for society and the economy. According to Musa & Adebisi, (2021) businesses must prioritize ethical AI development and deployment, ensuring that AI systems are designed to enhance human well-being and contribute positively to economic development by promoting responsible AI use, organizations can harness the full potential of AI while mitigating its risks.

Summarily, AI is playing a transformative role in modernizing office practices, driving significant changes in how businesses operate. By automating routine tasks, enhancing decision-making, and improving communication, AI is contributing to increased productivity, cost efficiency, and the creation of new economic opportunities. However, the adoption of AI also brings challenges, including workforce displacement, ethical concerns, and security risks. Addressing these challenges requires a balanced approach that includes supportive policies, investment in education and training, and a commitment to responsible AI use. As AI continues to evolve, it will be crucial for organizations and policymakers to work together to ensure that its benefits are maximized while its risks are effectively managed.

Conclusion

In conclusion, Artificial Intelligence (AI) is fundamentally reshaping office workflows leading to profound impacts on productivity, efficiency, and economic development. By automating routine tasks, enhancing decision-making, and streamlining communication, AI is transforming how businesses operate,

allowing them to become more agile and responsive in a dynamic global marketplace.

It is also concluded that AI continues to evolve, its role in modernizing office workflows will become even more critical, making it imperative for all stakeholders to work collaboratively to harness its full potential for sustainable economic development.

Recommendations

To effectively integrate AI into office workflows while addressing its associated challenges, the following recommendations are made:

1. **Develop Comprehensive AI Policies:** Governments and organizations should establish robust policies that support AI adoption while addressing its societal impacts. These policies should promote transparency, accountability, and fairness in AI deployment, ensuring that economic gains are not achieved at the expense of ethical considerations
2. **Invest in Reskilling and Upskilling:** Continuous investment in education and training programme is essential to prepare the workforce for the changes brought about by AI. Workers must be equipped with the skills needed to thrive in AI-driven environments, reducing the risk of job displacement and ensuring that the benefits of AI are widely shared.
3. **Promote Responsible AI Development:** Organizations should prioritize ethical AI development and deployment, considering the broader implications of AI for society and the economy. By fostering a culture of innovation that is aligned with ethical standards,

businesses can harness AI's full potential while mitigating its risks.

4. **Enhance Data Security and Privacy Protections:** As AI systems process vast amounts of sensitive data, it is crucial for organizations to implement strong data security measures. This includes adopting best practices to protect against data breaches and unauthorized access, thereby safeguarding both organizational and individual privacy.
5. **Encourage Collaboration among Stakeholders:** To maximize the benefits of AI, collaboration between governments, businesses, educational institutions, and other stakeholders is essential. This collaborative approach will ensure that AI's integration into office workflow is conducted in a way that supports economic growth, social equity, and sustainable development.

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ENTREPRENEURSHIP SKILLS ACQUISITION: A PROPITIOUS APPROACH TOWARDS UNIVERSITIES FINANCING AND SUSTAINABLE DEVELOPMENT.

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Abstract

The socioeconomic crises in Nigeria which include but not limited to graduate unemployment has informed the integration of Entrepreneurship Skills Acquisition (ESA) into the University programmes by the Federal Government. The objective is to enhance employability and job creation, particularly in the Science Education field of study for Sustainable Development (SD). This study explore the review of theoretical literature on the role of heightening the capability of ESA in enhancing Universities financing and Sustainable Development (SD) with attention to Sustainable Development Goals (SDGs) 2, 4, 9. The study has shown that in enhancing the capability of ESA programmes in Nigerian Universities, there is the need for Entrepreneurship-University Ecosystems. It is also shown in the study that fostering SD in the ecosystems is capable of enhancing Universities financing and the SD. Recommendation among others include that Universities should practice Intra/Entrepreneurship-Universities Ecosystems to facilitate University-Industry collaborations towards enhancing Entrepreneurship Skills Acquisition programmes' capability.

Keywords: Entrepreneurship Skills Acquisition, Sustainability Inclusion, Ecosystems, Financing, Sustainable Development.

Introduction

The current global socioeconomic issues, with attention to Nigeria calls for prompt attention, importantly by the education stakeholders. Education is believed of being capable of proffering solutions to problems in all aspects of human endeavours, specifically, in higher education. Unemployment, hunger, and poverty are ravaging globally and Nigeria is not an exception. These problems could be addressed through the higher education institutions. Higher education is very important in nation's development as they produce the needed manpower. Tetiana,

Oleksandr, Igor, Nataliia, and Olga, (2019) posit that higher education is very important in the economic development of a country. These days, education is observably being directed towards Sustainable Development (SD), USAID, (2014) explains that development is about change and that changes created intentionally depends critically on the quality of human capital involved in choosing the changes to be made. Educating undergraduates with adequate and relevant skills through various University programmes, with attention to Entrepreneurship Skills Acquisition (ESA), can help in producing high

quality manpower needed for employment generation. The ESA has the potential to ease the problem of unemployment, reduce social vices and consequently enhance SD. Filser, Kraus, Roig-Tierno, Kailer, and Ulrike, (2019) explain that UN has identified entrepreneurship as a key element for addressing Sustainable Development challenges, contributing to sustainable agriculture, innovation, increasing social cohesion, reducing inequalities, introducing climate change mitigation technologies, and establishing environmentally sustainable practices and consumption patterns. The entrepreneurship programmes are supposedly presented to students in theory and practice, the theory involves educating students on the concepts, rudiments and other requisite knowledge in entrepreneurship while the practice expose undergraduates to experiential learning where they engage in hands-on activities.

The global economic issues and recent economic measures which include fuel subsidy removal in the country have led to increased cost of living and currently, the aggravated increase in the cost of financing Universities. Also, worthy of note is the increasing attention to infrastructure and health among others, and the need for appropriation of public resources to meet the rising social demands. The challenge of sustainable financing in African higher education suggest that alternative methods of financing should be considered (World Bank, (2015)). Therefore, financing education at this time solely by the government seems to be unrealistic. This also suggests that the Managements may consider opting for alleviation strategies in the Universities. As a way forward, the capability of ESA programmes in financing the Universities towards SD

could be enhanced through the adoption of Entrepreneurship-Universities Ecosystems. The ecosystems could facilitate the transfer of knowledge and technology through collaboration, fostering innovation and commercialization of research findings. Nurturing Science Education undergraduates through ESA in Entrepreneurship-Universities Ecosystems could unfold many opportunities to cushion the effects of current economic crises of Universities' financing.

Sustainability inclusion in ESA potentially enhances Universities financing strength and SD. For instance, Goal 2; Zero Hunger, Goal 4; Quality Education and Goal 9; Industry, Innovation, and Infrastructure. Entrepreneurship skills acquisition targeted at sustainable agriculture will help in tackling the problem of food insecurity, hunger, malnutrition and health. The Universities, through farming activities and agricultural entrepreneurship generate revenue for the Universities. Meanwhile, quality education could be achieved by presenting diverse lifelong learning opportunities with prospects to students through ESA with attention to sustainability issues. The Entrepreneurship-Universities Ecosystems would enhance knowledge transfer in form of products and services among Universities and external entrepreneurs, promoting sustainable development. Thus, enhancing the capability of ESA programmes and helping in financing Universities towards SD.

Methodology

The study adopted a viewpoint approach to explore the role of Entrepreneurship Skills Acquisition in Universities Financing and Sustainable Development. The approach was

adopted due to its suitability in obtaining related information on the study by following a sequence of systematic steps in literature review. Enhancing Universities financing and sustainable development through Entrepreneurship Skills Acquisition programmes are best studied through viewpoint approach. The justification for this approach is that it is important to familiarize with diverse views, perceptions and explanations as regards the study. In view of this, the role of Entrepreneurship Skills Acquisition in Universities financing and sustainable development are subjected to review with the aim of coming up with an informed position. The study therefore theoretically examines; Entrepreneurship Skills Acquisition, Entrepreneurship Skills Acquisition and Sustainable Development, and Financing Universities through Entrepreneurship-Universities Ecosystems. Based on the literature review, the study is guided by the textual and structural descriptions to take a reasonable position on the importance of. Entrepreneurship Skills Acquisition in Universities financing and sustainable development.

Literature Review Entrepreneurship Skills Acquisition

Entrepreneurship Skills Acquisition has been integrated as a matter of compulsion into University education curriculum. In Nigeria, entrepreneurship skills acquisition has been acknowledged as a means to addressing unemployment and fostering economic growth. *“Entrepreneurship programs in Nigerian universities serve the purpose of nurturing and equipping students with the skills and knowledge needed to succeed as entrepreneurs in today’s competitive business world.*

These programs are designed to equip students with a deep understanding of entrepreneurship and the ability to identify and exploit business opportunities in different sectors. In Nigeria, there are currently a significant number of Universities offering entrepreneurship programs to cater to the growing interest and demand for entrepreneurial education” (Disciplines in Nigeria). Ukpong, (2013) asserts that entrepreneurship skills acquisition at the tertiary education is that type of education aimed at orientating would be graduates into self-reliant employers.

In addition, Bamiro, (2012) quoted in Ogundola, Odunyemi, and Olaoye, (2020) explains that knowledge, information and innovation centres on Universities as eminent members of the knowledge industry and Universities, being eminent members of the knowledge industry should wake up to the task of educating undergraduates in entrepreneurial skills. The entrepreneurship skills available to students may vary across institutions. Aina, (2017) remarked that the National Universities Commission (NUC) on behalf of the Federal Government directed that entrepreneurship studies be introduced into the curriculum of University education in Nigeria to produce graduates with additional skills to their field of study for self-reliance. According to Aina, the entrepreneurship skills available to students in the public Universities in Ekiti State, Nigeria include; soap/detergent/toothpaste making, cloth dyeing/textile, food processing, photography, poultry and farming and a host of others. Entrepreneurship skills acquisition programmes offer divers skills that could enable undergraduates, after gaining

expertise in them, to embark on business ventures as sources of employment for their livelihoods.

Also, Davwet et al., (2019) quoted in Edokpolor, (2020) explain that the integration of Entrepreneurship Education (EE) into the University education curriculum in Nigeria was to equip undergraduates across all disciplines with skills to be a person, and be free from social servanthood, function well and contribute to society after graduation and that the Universities should incorporate it into their strategic plans. Entrepreneurship skills acquisition are meant to equip learners with all necessary skills to be able to be self-reliant and problems solvers either for self-satisfaction or commercial gains. Edokpolor and Somorin quoted in Edokpolor, (2020) explain that Entrepreneurship Education cut across all academic disciplines, aiming to equip learners with skills to discover business opportunities and to create something new or include something new into an existing product to solve problems. Entrepreneurship Skills Acquisition could play a vital role in Sustainable Development of the country.

Entrepreneurship Skills Acquisition and Sustainable Development

Entrepreneurship Skills Acquisition is capable of enhancing sustainable development when sustainability issues are taken into cognizance in the process of the skills acquisition. Sustainability inclusion may serve as eye opener to students in the areas of business opportunities. Bako, Taiwo, Mohammed and Olopade, (2021) assert that entrepreneurship skills development is a key determinant of youth employment and the extent to which more jobs are created depends on the

availability and effectiveness of skills development platforms. According to United Nations (UN), sustainable development is development that meets the needs of the present generation without compromising the ability of future generations to meet their own needs. Integrating sustainability concerns may shape the entrepreneurial activities in Entrepreneurship-Universities ecosystems and motivate students in the direction of business models that are targeted at Sustainable Development Goals. Filser, Kraus, Roig-Tierno, Kailer, and Ulrike, (2019) explain that UN has identified entrepreneurship as a key element for addressing Sustainable Development challenges, contributing to sustainable agriculture, innovation, increasing social cohesion, reducing inequalities, introducing climate change mitigation technologies, and establishing environmentally sustainable practices and consumption patterns. Therefore, Universities are expected to play vital role in the achievement of the SDGs of the 2030, UN Agenda (Caputo et al. 2021; Venturelli et al. 2021; De Iorio et al. 2022) quoted in Schimperna, Federico, Fabio Nappo, and Federica Collaretti, (2022)). Stefan Schaltegger¹ and Marcus Wagner, (2011) posit that the relationship between entrepreneurship and sustainable development are expressed in eco-preneurship, social entrepreneurship, sustainable entrepreneurship and institutional entrepreneurship.

Developing entrepreneurship skills for sustainable development may inform domesticating the SDGs with attention to SDGs, 2, 4, and 9 and intensifying actions towards achieving them. Goal 2; Zero Hunger- Ending Hunger, Achieving Food Security, Improving Nutrition, and Promoting Sustainable Agriculture. Enhancing

ESA by focusing on entrepreneurship in agribusiness which may promote locally-grown based and culturally popular food processing for children and adults to enhance food security, adequate nutrition and health. Goal 4; Quality Education- Ensuring Inclusive and Equitable Quality Education, Promoting Lifelong Learning Opportunities, and Achieving Literacy and Numeracy. Improving the capability of ESA programmes through various strategies such as sustainability inclusion through Entrepreneurship-Universities Ecosystems. Goal 9; Industry, Innovation, and Infrastructure-Developing Quality, Reliable, Sustainable, and Resilient Infrastructure, Promoting Inclusive And Sustainable Industrialization, And Fostering Innovation. The ESA can foster the training of students in developing business models that would promote environmental sustainability. Several opportunities abound in the above SDGs which Universities may explore and integrate into the academic programmes with the aim of enhancing SD.

The role of Entrepreneurship Skills Acquisition for Sustainable Development include but not limited to the following;

Entrepreneurship skills acquisition for sustainable development;

1. foster innovation and creativity, which enable individuals to develop sustainable solutions to environmental, social, and economic challenges (Ratten, (2020)).
2. entrepreneurship skills acquisition for socioeconomic and sustainable development Ofoegbu and Okoli, (2020).
3. focus on entrepreneurship in agribusiness and come up with food formulae that are locally-

grown based and culturally popular for children and adult to enhance adequate nutrition and health (Odunyemi (2023)).

4. focus on eco-friendly and socially responsible business models (Chukwuma, & Okeke, (2020)).
5. encourage innovation and creativity (Chirwa and Mafini, (2021)) and
6. foster collaboration and partnerships (Agyapong and Boakye, (2020)).

Financing Universities through Entrepreneurship-University Ecosystems

University education institutions are seen as knowledge industries and thus, the need for them to strategize in order to make up for the emerging trends and intensify efforts to fight unemployment among University graduates. Entrepreneurship-University Ecosystems could usher in more actions into entrepreneurship skills acquisition programmes in the various institutions. This will also serve to enhance the capability of ESA programmes in the areas of Universities financing and sustainable development on the long run. Melo, (2014) describes an Entrepreneurial University as one which takes a proactive role in transforming knowledge for regional development, engage in entrepreneurial education, emphasizes entrepreneurial management distinct from traditional entrepreneurship and that the University plays a crucial role in fostering an entrepreneurial society. Thereby, driving economic growth by adapting to societal demands, developing entrepreneurs, addressing new challenges and generating employment opportunities.

Similarly, Taylor & Francis, (2024). explain that there is a dynamic

interplay among various establishments and entrepreneurs for vigorous entrepreneurship activities and development. This may include the role of Entrepreneurial University in institutional structures and norms. The entrepreneurial activities of the University are capable of developing entrepreneurial behaviors through the adaptation of institutional frameworks and practices, interacts with various external environments, including the economic, social, and political spheres in fostering entrepreneurship within the University. In furtherance, the institution fosters innovation and entrepreneurship, creating new knowledge and technologies, which are transferred to industry and society, thus playing a critical role in economic development. The Entrepreneurship-University may facilitate economic development through teaching and research in ESA, connecting with knowledge users more strongly and establishing as an economic actor in itself (Etzkowitz (2017).

Relatedly, Sinozic, & Smith, (2015) explain that Entrepreneurial University embark on business models that promote the development of their regions, engaging in patents, licensing and academic activities derived from university disciplines such as engineering, information technology and biotechnology in which the knowledge produced overlaps more easily with products and processes that industry and market structures can absorb. Entrepreneurship-University ecosystems involve collaboration and the adoption of advance technology with the aim of trading research findings for SD. Maribel, Nuria and David, (2011) explained that there is the need for the creation and development of entrepreneurial Universities because they are capable of offering support mechanisms for entrepreneurship and innovation, and

empower students and the universities to create and manage businesses that not only drive economic growth but also address social and environmental challenges towards sustainable development.

The following benefits could also be derived from Entrepreneurship-Universities Ecosystems;

1. Offering access to financing and resources (Babalola, J. B. (2023).
2. Facilitating graduates' employability (Guerrero, M., Urbano, D., & Gaj, E. (2020). (Gries et al., 2020)).
3. Facilitating open innovation (Chesbrough, H. W., Vanhaverbeke, W. and West, J., (2006)).
4. Contributing to human capital development by enhancing entrepreneurial competence, entrepreneurial mindsets and behaviours for venture creation beyond intention (Ayala-Gaytán, Villasana & Naranjo-Priego, (2024), Etzkowitz, (2013); Fayolle & Redford, (2014)
5. Bridging the gap between Universities and businesses, particularly in the digital age Alexander, and Cornelia. (2018).
6. Enhancing innovation and ecosystem development by nurturing human capital, fostering diverse career paths, community partnerships, and promoting collaborative efforts. (Feldman, & Wright, (2019)).
7. Promoting the evolving knowledge economies, enhancing interdisciplinary collaboration and the democratization of knowledge (Carayannis and Campbell, (2011).
8. Equipping individuals with the knowledge and skills needed to start and sustain successful enterprises, thereby stimulating

economic activity and reducing unemployment (Bosma and Kelley, (2020).

9. This enable individuals to develop creative solutions to societal challenges, driving technological advancements and promoting sustainable practices (Kuckertz, Brändle, Gaudig, Hinderer, Reyes, Prochotta and Berger, (2020)).

Sustainability concerned Entrepreneurship-University ecosystems through entrepreneurship skills acquisition programs, promote social inclusion by providing marginalized individuals, including women and youth, with the opportunities to become economically independent and empowered to contribute to their communities and address social inequalities (Dacin, Dacin and Tracey, (2011)). Entrepreneurship skills acquisition towards sustainable development often includes training in social entrepreneurship, which focuses on addressing social issues while pursuing financial sustainability. Social entrepreneurship business principles are utilized to tackle issues such as poverty, healthcare, education, and inequality, thereby contributing to sustainable development by creating positive social impact (Dacin et al., 2011). The ecosystem can also help in Universities financing.

University financing refers to the various sources of funding that Universities make use of to support their operations, researches, and other financial obligations. This can include government funding, private donations, research grants, and partnerships with industries.

Government funding, tuition fees, research grants, philanthropic donations and private sector partnerships are major sources of

financing in Africa (Mokwena and Mokwena, (2020), Adebayo and Adekunle, (2020), Nkum and Dzorgbo, (2020), Moyo and Moyo, (2020) and Adom and Williams, 2020)). In this wise, Babalola, (2023) and Babalola, (2023) explain 6 streams of fund that can be mobilized to finance education in Nigeria as; additional resources from increased oil and gas export, additional resources from tax, increased private share, philanthropic donations and endowment, external donations and income generating activities. Exploring income generating activities through entrepreneurship that are nurtured in Entrepreneurship-Universities Ecosystems will enhance the capability of ESA towards University financing and SD.

In fostering SD the ecosystem adopt sustainable practices in production and consumption processes which contributes to environmental sustainability and ensures the long-term viability of businesses and communities (Bacq et al., 2019). Entrepreneurship skills acquisition programs foster the development of environmentally sustainable businesses. They encourage entrepreneurs in adopting eco-friendly practices, promoting renewable energy solutions, and contributing to the conservation of natural resources (Schaltegger and Wagner, (2020)). Environmental sustainability would thus, be enhanced in the ecosystems. There would be positive impact on community development by promoting local economic development, fostering social cohesion, and addressing specific community needs through entrepreneurial initiatives (Guerrero, Cunningham and Urbano, (2020)). Individuals and communities are therefore empowered to take control of their destinies and shape their

sustainable development pathway with entrepreneurship skills towards sustainable development.

Conclusion

The study has clearly shown that in enhancing the capability of entrepreneurship skills acquisition, programmes in Nigerian Universities, the role of Entrepreneurship-University Ecosystems cannot be overemphasized. Fostering sustainable development in the ecosystems is capable of enhancing Universities financing and sustainable development.

Recommendations

The following recommendations are made based on the findings of the study;

Universities should practice Intra/Entrepreneurship-Universities Ecosystems to facilitate University-Industry collaborations through entrepreneurship programmes to enhance Entrepreneurship skills acquisition programmes' capability.

Universities Management should intensify efforts through entrepreneurship programmes, to enhance income generating activities that can offer supports in financing the institutions.

Entrepreneurship skills acquisition programmes should be directed towards addressing sustainability issues by education stakeholders for enhanced quality and relevance of higher education in the African Universities

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OCCUPATIONAL BIAS AND JOB PERFORMANCE OF SECRETARIES IN TODAY'S OFFICE ENVIRONMENT IN NIGERIA

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Abstract

This paper examines the multifaceted dynamics of occupational biases experienced by secretaries in organisations in Nigeria. Secretaries play pivotal roles in organizational efficiency, serving as administrative backbones, gatekeepers of communication, and custodians of corporate image. Despite their observed indispensable contributions, they encounter various forms of biases including gender, age, racial, educational, and religious biases. These biases manifest in differential treatment, limited recognition, and constrained career advancement opportunities among others. The impact of occupational bias on secretaries' job performance is profound, leading to decreased job satisfaction, motivation, and productivity, as well as fostering negative work environments and restricting career progression. By examining the multifaceted nature of bias and its repercussions on job performance, this study has shed light on roles of Secretaries, forms of biases, impact of biases among others. To mitigate these biases, a range of strategies have been proposed. These include education and awareness programs, equal opportunity initiatives, professional development opportunities, diversity training, and bias awareness workshops, inclusive leadership training and cross-cultural communication workshops are also recommended to foster understanding and collaboration in multicultural settings.

Keywords: Occupational bias, Job performance, Secretaries, Office environment.

Introduction

Occupation bias is referred to as the tendency to favour or prioritize certain occupation, career or fields over others often based on societal, cultural or personal beliefs. This bias can manifest in various ways, such as over emphasizing prestigious or high paying jobs, undervaluing or stigmatizing certain occupations e.g. (manual labour, service industry, assuming certain careers are more suitable for specific groups (e.g.,

gender, age) fostering stereotypes about certain occupations or industry, and influencing career choices or advice based on personal biases

Occupational bias can have negative consequences such as limiting career choices and opportunities, perpetuating irregularity and discrimination, reinforcing social and economic disparities, overlooking valuable skills and contradictions from diverse occupations, and impacting self-esteem and career satisfaction.

The workplace is a crucible of human interaction and endeavor, where individuals from diverse backgrounds with different skills and knowledge come together to contribute to the attainment of organizational goals. It is expected that individual employees who are from different professions are to perform their duties without prejudice.

The secretary is an indispensable Office Administrator in both public and private organizations. The Secretary is a trained office worker who has acquired proficiency in the art of Keyboarding, Shorthand, Office Management, Information and Communication Technology, Interpersonal Relations, among others in order to effectively superintend the affairs of his/her office for enhanced job performance. Thus Mayer (1977) defines the secretary as an executive assistant, who possesses a mastery of office skills, demonstrates the ability to assume responsibility with or without supervision, exercises initiatives and judgment and makes decision within the scope of assigned authority. According to Edwin (2008), today's secretaries are exposed to office technology including the internet that makes work much easier and knowledge more accessible.

The roles of the Secretary are vital to the sustainability of any organization in that he/she has a variety of functions to perform with the outside community of the organization. Among the organizations that require the roles of good secretaries are profit making and non-profit, private and public organizations. The role of secretaries in any business environment cannot be understated as they form the administrative backbone, facilitating crucial tasks, managing communication, and ensuring the

smooth functioning of the organization.

However, the issue of occupational bias has been observed to prevent effective job performance of Secretaries in different organizations. Occupational biases can be viewed as strong feelings against a person, a group of persons in the places of work, which may be as a result of unfair judgment. This can be due to gender discriminations, or tribe among others.

Considering the implications of occupational on secretaries' job performance, it is imperative to understand the challenges they may likely face in their professional environments.

Roles of Secretaries in Business and Office environment

The role of secretaries has evolved significantly over the years, transitioning from clerical tasks to multifaceted ones that require a diverse range of skills. This evolution has necessitated a re-evaluation of the criteria used to assess their job performance. The Practice Note (2024), reports that the role of secretaries consist of humanity, humility, high intelligence, and understanding of agendas, negotiation and resilience. A secretary must possess not only a knowledge base but also the attitudes and personal qualities that reflect the values of the organization, intangibles that are not covered in a job description, personality traits and qualities that are important in accomplishing tasks. Thus, some of the duties of Secretaries can be classified as follows:

Administrative Backbone: Secretaries are the backbone of administrative efficiency in any business organisation. They handle essential administrative tasks such as maintaining records, managing appointments, and organizing

meetings. Oloyede and Adefunke (2019) emphasize the significance of efficient administrative support of secretaries by highlighting how secretaries streamline processes, reduce administrative burdens on faculty members and ensure smooth operations in organizations.

Gatekeepers of Communication:

According to Lewis and Brown (2021), secretaries act as gatekeepers of communication, serving as the initial point of contact for students, faculty, and external stakeholders. Their effective communication skills and knowledge of organizational policies are critical for the provision of accurate information and facilitating smooth interactions in their organizations..

Support for Staff and Employees:

Taylor, Johnson, and Smith, (2019) opine that secretaries provide essential support to management staff, research administration, and event coordination. They often serve as a liaison officer between different departments and administrative units.

Student Services: Smith and Jenkins (2018) note the importance of student services in higher education institutions, demonstrating how secretaries contribute to student's satisfaction and retention. Secretaries are often the first point of contact for students seeking assistance. They provide information on academic programs, admission procedures, and course registration. This direct interaction with students can significantly impact their experience..

Corporate Image: Secretaries often serve as the image of the organization, both to internal and external stakeholders. Their professionalism and efficiency reflect positively on the organization's image. Brown and Martinez (2016) emphasized the role of secretaries in creating a positive institutional image, which can

influence enrollment, patronage and donor relations.

Other roles performed by secretaries according to other scholars are resource allocation (Hill & Adams 2019), crisis response (Smith & Thomas 2019), and role evolution (Davis & Robinson 2021) among others.

Job Performance and the Secretary

Job performance refers to the extent to which an individual effectively fulfills the requirements of their job role. It encompasses both the quality and quantity of work output, as well as the behaviours and attitudes that contribute to organisational success. It is the ability of effectively complete the core tasks and responsibilities associated with a job and behaviours that contribute to the overall organisational environment, such as helping co-workers, adapting to change, and engaging in organisational citizenship behaviours.

Job performance refers to the output that an employee has contributed to the goal and purpose of an organisation through work behaviour and engagements which the organisation considers as either productive or otherwise. According to Robbins and Judge (2017), job performance consists of five indications, including (1) quality of work; (2) quantity of work; (3) timeliness; (4) effectiveness; and (5) independence.

Secretaries play a crucial role in the smooth functioning of organizations, providing essential administrative support to executives, managers, and other staff members. Their job performance encompasses a range of tasks and responsibilities aimed at facilitating efficient operations and communication within the workplace. It also involves the effective execution of administrative

and clerical duties to ensure the smooth operation of an office thereby maintaining organizational efficiency through their administrative functions.

They engage in various job activities that encompass a diverse range of tasks aimed at supporting administrative functions and maintaining positive relationships with stakeholders. Some of the job activities involved in the job performance of Secretaries are administrative support, communication management, documentation and recordkeeping, calendar management, client and visitor relations, task prioritization and time management, word processing, human and customer relations and interactions, digital skills activities

To improve the performance of secretaries, Côté (2012) remarks that they must continually develop diverse set of skills and competencies to excel in their role which includes strong organizational and time management skills, effective communication and interpersonal skills, attention to detail, problem-solving abilities, and technological proficiency. They are also expected to possess knowledge and expertise in areas such as office procedures, document management, record keeping, information technology, and relevant industry or organizational knowledge (Bernerth, Aguinis, & Walker, 2011). In their contribution Van, Pierce, & Steiner (1994) are of the opinion that the work environment, such as organizational culture, leadership style, work-life balance, and support from colleagues and supervisors, must also not be biased to ensure maximum job performance. Secretaries who feel valued, recognized, and rewarded for their contributions are likely to be more motivated and engaged in their work, leading to higher level of performance.

Occupational Bias and the Secretaries

Occupational bias refers to the preconceived notions, stereotypes, and prejudices associated with specific occupations. Secretaries often face various forms of bias due to the historically gendered perception of the role. Occupational bias can be defined as the differential treatment, attitudes, and perceptions towards individuals based on the occupation they hold (Reskin & McBrier, 2000). Scholars such as Kramar, Bartram, and Leggat (2011) emphasize the importance of recognizing bias in organizational structures and its adverse effects on employee's performance. Their works highlight the need for a comprehensive understanding of biases that persist within workplace dynamics.

Some of the factors that have influenced occupational biases in Secretarial profession are:

Lack of Recognition: The contributions of secretaries, despite their critical roles in the smooth functioning of organizations, are frequently underestimated. A study by Turner and White (2019) found that their contributions in terms of administrative support, communication facilitation, and organizational efficiency are often overshadowed or taken for granted, leading to a lack of recognition. Brown and Martinez (2016) indicates that when secretaries feel undervalued and underappreciated, their job satisfaction decreases, which can result in reduced productivity and overall organisational or institutional inefficiency.

Gender Bias: Gender bias remains a prominent factor influencing occupational bias among secretaries.. Eagly and Karau (2002) emphasize the role of congruity theory, which posits societal expectations that create biases

against women in certain roles. This bias often results in the underrepresentation of women in higher positions and the perpetuation of stereotypes regarding job competencies based on gender. In fact, there has been evidence of discrimination BY THE Chief Executives on the preferred gender of a secretary to work with.

Organizational Culture: The organizational culture plays a pivotal role in fostering or mitigating occupational biases. Kramar, Bartram, and Leggat (2011) highlight that organizational norms, practices, and leadership attitudes significantly influence the prevalence of biases. Institutions that prioritize diversity, equity, and inclusion initiatives tend to mitigate occupational biases more effectively.

Job Scope: Secretaries, while handling sensitive and confidential information, may be confined to administrative support tasks such as typing, data entry, clerical duties, limiting their involvement and participation in strategic discussions, broader organizational functions, access to information and decision-making processes. This disparity in job scope can perpetuate the perception of confidential secretaries as lesser contributors, reinforcing unequal treatment they experience.

Stereotypes and Prejudices: Stereotypes and prejudices deeply ingrained in societal structures contribute to occupational biases. These biases are often unconscious and can influence decision-making processes related to hiring, promotions, and task assignments. Such biases perpetuate stereotypes about certain groups' abilities, affecting opportunities and treatment within the workplace (Eagly & Karau, 2002).

Hijacking of Roles of Secretaries:

With technological advancements and changing administrative needs, the roles of secretaries are being hijacked or encroached upon by other staff members, for example, minutes taking during committee, management, and board meetings. This can lead to diminished recognition for the unique contributions they make to the organisation or institution. Mitchell and Adams (2016) highlight that secretaries who find their roles diluted may struggle to assert their expertise and face challenges in gaining recognition for their specialized skills and knowledge. Turner and Bennett (2019) also opine that the effects of role encroachment can lead to reduced job satisfaction, negative workplace culture, feelings of disempowerment, frustration, and alienation, within tertiary institutions which create a negative atmosphere.

Limited Career Advancement: the lack of recognition for secretaries also translates into limited career advancement opportunities. Carter and Davis (2018) highlight that secretaries faced with obstacles when seeking to advance their careers within organizations. They often encounter barriers in accessing training and development programs, hindering their professional growth.

Perceived Hierarchy and Power Dynamics: Another contributing factor to the occupational bias lies in the perceived hierarchy and power dynamics. The power dynamics inherent in the organizational structure can result in confidential secretaries being overlooked, undervalued, or limited in their professional growth and development opportunities.

Disparities in Compensation: One of the key manifestations of occupational bias is the disparity in compensation in terms of fringe

benefits, and allowances between secretaries and other officers within organizations and institutions. A study by Johnson and Williams (2015) found that secretaries in higher education institutions often earn significantly less than their counterparts in other administrative or academic positions whenever there is need to pay allowances like overtime or bonuses. This pay gap can be attributed, in part, to the undervaluation of secretarial work.

Forms of Occupational Bias

Some of the various forms of the occupational bias being experienced by secretaries as gathered in literature and from experience are as follows:

Gender Bias: Secretarial work has long been associated with women, leading to gender bias and reinforcing gender stereotypes. According to Smith and Davis (2020), it is one of the most pervasive forms of occupational bias. It manifests when individuals are treated differently based on their gender. Eagly and Carli (2007) further emphasized that gender bias persists in the workplace, with women often facing challenges related to leadership roles and unequal compensation.

Age Bias: According to Jackson, Johnson and Jones (2021), centers on prejudices related to an individual's age. It can lead to discrimination against both younger and older employees, impacting hiring decisions, promotions, and perceptions of competence.

Racial or Ethnic Bias: Racial or ethnic bias, explored by Williams and Martinez (2019), involves discriminatory attitudes and actions based on a person's racial or ethnic background. It can result in inequitable opportunities, micro aggressions, and exclusionary practices in the workplace.

Attribution Bias: This refers to when a boss assume that a Secretary is unfit for a job position or that she is not capable of performing certain task without giving her a chance to demonstrate her expertise. By this, some Executives do under rate the abilities of their secretaries as to their effectiveness in carrying out assignments hence; they prefer to perform the job themselves without any trial by Secretary.

Contrast Effect Bias: This is when a boss compares two career roles simultaneously and causing him to exaggerate the performance of one in contrast to another.

Religious Bias: Religious bias, as identified by Ahmed, Khan and Ali (2022), pertains to discriminatory behaviour directed at individuals because of their religious beliefs or practices. This bias can manifest in various ways, from subtle exclusion to overt acts of discrimination.

Educational Bias: Some occupations may require specific educational backgrounds, but bias can occur when candidates from certain schools or educational systems are favored over others.

Bias in Work Assignments: Employees might be assigned tasks based on assumptions about their abilities, limiting their growth and development within the organization.

From the foregoing, there exist evidences of the opinion that occupational biases are being experienced by Secretaries in today's work environment in Nigeria. Adebayo and Ojo (2018) explain that female secretaries in Nigeria often encounter gender-based discrimination in the workplace, including unequal pay, limited career advancement opportunities, and stereotyping based on traditional gender roles. They also reiterated that another aspect of occupational bias that secretaries may

experience is educational bias. In most cases, secretaries are being overlooked for certain opportunities or promotions due to a lack of formal education or specific qualifications, even if they possess the necessary professional skills and experience for the role. This can create barriers for career growth and development among secretaries. They furthermore, opined that there may be bias based on job title and perceived status within the organization. Secretaries are sometimes undervalued or underestimated in their roles, which may have some impact on the job performance and job satisfaction as discussed below.

Impact of Occupational Bias on Secretaries Job Performance

Job performance and occupational bias are two critical aspects that significantly impact confidential secretaries' roles in organizations. Job performance relates to how effectively secretaries fulfill their responsibilities, while occupational bias encompasses unfair treatment or disadvantages faced by individuals in their careers due to various factors. When confidential secretaries are undervalued and subjected to unequal treatment, it creates an atmosphere of unfairness and inequality within the organization. This often leads to:

Decreased Job Satisfaction: The stigmatization and unequal treatment can result in lower job satisfaction among confidential secretaries. When their contributions are overlooked or undervalued, it creates a sense of frustration and dissatisfaction with their work.

Reduced Motivation and Engagement: When confidential secretaries feel marginalized or stigmatized, their motivation and engagement levels may decline. They

may become disenchanted with their roles and less willing to go above and beyond their assigned responsibilities.

Negative Work Environment: The presence of biases and disparities can foster a negative work environment where employees feel undervalued, leading to decreased morale and strained relationships between confidential secretaries and other employees.

Reduced Job Satisfaction and Morale: The psychological impact of bias on secretaries' job satisfaction and morale is profound. Eagly and Karau (2002) note that experiencing biases in the workplace can lead to feelings of frustration, demotivation, and reduced job satisfaction. When individuals feel unfairly treated or undervalued due to biases, their morale diminishes, affecting their enthusiasm and commitment to their roles. Likewise, when confidential secretaries experience stigmatization and unequal treatment, it can create a sense of demoralization among the entire workforce. Low morale can lead to decreased employee engagement, higher absenteeism rates, and a lack of enthusiasm for the organization's goals.

Decreased Productivity: Occupational bias significantly affects the productivity of secretaries within tertiary institutions. When biases influence task assignments, resource allocation, or recognition of contributions, it can impede their efficiency and effectiveness in performing their duties (Robbins & Judge, 2017). Biases may lead to underutilization of skills and talents, hindering optimal productivity levels of confidential secretaries. When their expertise and insights are not valued, organizations miss out on valuable perspectives and innovative ideas that can enhance productivity and efficiency.

Talent Loss: The disparities can contribute to higher turnover rates among confidential secretaries. When these employees feel undervalued and overlooked, they may seek opportunities elsewhere, resulting in talent loss and increased recruitment and training costs for the organization.

Restriction on Career Progression and Opportunities: Occupational bias within tertiary institutions can substantially hinder career progression and limit opportunities for secretarial staff. Biases may result in unequal access to professional development programs, training opportunities, or promotions (Judge & Piccolo, 2004). Biases often restrict the advancement of individuals based on stereotypes rather than merit, limiting their career growth.

Strategies to Mitigate Occupational Bias

Some of the interventions that can be adopted to mitigate occupational bias as presented by different scholars are:

1. **Education and Awareness:** Promoting education and awareness about the diverse and essential nature of secretarial work can help challenge occupational bias. This includes highlighting the skills and contributions of secretaries, breaking down gender stereotypes, and fostering a more inclusive work environment.
2. **Equal Opportunity Programs:** Organizations should implement equal opportunity programs that aim to eliminate bias in hiring, promotion, and compensation practices. These programs can help create a fair and inclusive workplace where secretaries are evaluated based on their skills and performance rather than occupational stereotypes (Kalev, Dobbin, & Kelly, 2006).
3. **Professional Development:** Providing opportunities for professional development and training can empower secretaries to enhance their skills, gain new competencies, and demonstrate their value within the organization. This can help challenge occupational bias by showcasing the continuous growth and expertise of secretaries (Healy, 2019).
4. **Diversity Training Programs:** Implementing comprehensive diversity training programs is crucial. Koch, D'Mello, and Sackett (2015) suggest training sessions focused on recognizing and addressing biases, fostering inclusivity, and promoting awareness of diverse perspectives. These programs aim to sensitize employees and decision-makers about the impact of biases on workplace dynamics.
5. **Bias Awareness Workshops:** Eagly and Karau (2002) advocate for workshops dedicated to understanding implicit biases and their effects on decision-making. These workshops facilitate discussions on recognizing and challenging biases, encouraging employees to reflect on their assumptions and judgments, fostering a more inclusive work culture.
6. **Inclusive Leadership Training:** Training programs targeting leadership roles are essential. Judge and Piccolo (2004) suggest leadership training that emphasizes inclusive practices, highlighting the value of diverse perspectives, and equipping leaders with skills to recognize and mitigate biases within their teams.
7. **Cross-Cultural Communication Workshops:** Kramar, Bartram, and Leggat

(2011) advocate for cross-cultural communication workshops to enhance understanding and collaboration among a diverse workforce. These programs focus on fostering effective communication strategies in multicultural settings, reducing misunderstandings, and biases stemming from cultural differences.

8. **Ongoing Sensitivity Training:**

Continuous and ongoing sensitivity training is recommended by Robbins and Judge (2017) to maintain awareness and address evolving biases within the workplace. Regular sessions that address emerging biases ensure a sustained effort towards creating an unbiased work environment. Employing a combination of diversity training, bias awareness initiatives, and specialized programs for leadership and cross-cultural communication can significantly contribute to mitigating occupational bias and fostering an inclusive work environment within tertiary institutions.

Conclusion

In view of the negative impact that occupational biases against secretaries can bring into the progress of any organization, it is established that most of the administrative failures or incompetencies recorded in business and international organizations are most as a result of the practice of occupational biases by the management of these organizations.

Recommendations

The following recommendations are made:

1. Organizations should establish explicit policies condemning all

forms of bias in hiring, promotion, and task assignments of secretaries. These policies should emphasize accountability and outline consequences for discriminatory behaviour. This can be achieved through distribution of the policies to all employees and ensuring they understand the expectations and consequences.

2. They should conduct periodic audits to assess biases in various departments where secretaries work by implementing reporting mechanisms for employees to confidentially report instances of bias thereby fostering transparency and accountability.
3. Comprehensive diversity training programs should also be conducted for all staff to raise awareness and mitigate biases in day-to-day operations.
4. Transparent policies for task assignments, promotions, and recognition of secretaries should be developed and enforced to ensure fairness and minimize biases.
5. Management Staff in organizations should be actively involved in fostering an inclusive and unbiased work environment through their actions and support.
6. There should be regular and continuous evaluation and assessment of the effectiveness of interventions to address biases and adjusting strategies based on feedback and evolving needs.

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IMPACT OF RELIGION ON SECONDARY SCHOOL STUDENTS' KNOWLEDGE OF SEX EDUCATION IN EKITI STATE, NIGERIA

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Abstract

This study examined the impact of religion on secondary school students' knowledge of sex education in Ekiti State, Nigeria. Descriptive survey research design was adopted. The population of the study made up of all Senior Secondary School Students. Three hundred secondary school students were randomly selected from Ekiti State secondary schools which constituted the sample for this study. The questionnaire designed by the researcher tagged 'Questionnaire on the Impact of Religion on Students' Knowledge of Sex Education' validated by experts in Social Studies. The instrument was subjected to reliability test. Data obtained from the test re-test was subjected to Cronbach Alpha yielded a reliability coefficient of 0.77. The findings of this study revealed that, secondary school students in Ekiti State had good perception and high knowledge of sex education. It was also found that religion had significant impact on students' knowledge of sex education. It was therefore recommended that religious leaders should approve the inculcation of sex education into the school age children during their services at worship centres.

Keywords: Impact, Religion, Knowledge, Secondary School Students, Sex Education

Introduction

Sexuality, which includes sex, gender identities and roles, sexual orientation, eroticism, pleasure, intimacy, and reproduction, is a fundamental component of being human, according to the World Health Organization (WHO, 2016). Thoughts, imaginations, desires, attitudes, values, behaviour, practices, and relationships are all ways that sexuality is experienced and expressed. All these aspects can be a part of sexuality, but not all of them are constantly felt or shown. Factors including biology, psychology, society, politics, economy, ethics, law, history, religion, and

spirituality all interact to shape sexuality (WHO, 2010). According to Akanle (2007), sexuality education includes teaching about sexual orientation, values, family planning, reproduction, body image, sexual pleasure, decision-making, communication, dating, relationships, STDs and how to prevent them, and control techniques. Bucher and Lewis (2002) opined that an individual with a sound education on sexuality is more likely to impact positively of live as he/she is alive to his responsibilities of reducing the occurrence and spread of sexually transmitted diseases (STDS).

The number of teenage pregnancies appears to be at alarming rate, perhaps due to a number of factors that are thought to be the causes, such as the adolescent's curiosity about what sex is like, peer pressure, and media exposure. The effects, on the other hand, include but not limited to dropping out of school, poor child care, and health issues among others (Effiom & Stella, 2019).

Action Health Inc. (AHI), (2003) asserted that the interactive nature of the subject of sexuality is content ranges from human growth and development, relationships, life skills, sexual attitude and behaviour, sexual health, society and culture. Also, Giddens (2001) said that the development of right attitudes about sexuality is necessary for effective control of emotions.

Out of curiosity, many teenagers have turned to confiding in their friends and schoolmates, who frequently deceive them knowingly or unknowingly, because the family, which is the primary agent of socialisation and where sex education ought to be taught, does not seem to help the adolescents in this regard. This is because sexuality-related issues are frequently not discussed with them due to the belief that keeping them in the dark about their sexuality will prevent them from engaging in immoral behaviour (Abdu, 2006). Also, Effiom and Stella (2019) list a number of contributing variables, such as the lack of parental supervision and advice, teenagers' misunderstanding of sex-related issues, financial difficulty, cultural and religious views, sexual assault, and many more.

There have been several debates and misunderstandings around the idea of sex education and its implementation in junior secondary schools among educators, parents, religious bodies, the general public,

and students. Every child and teenager was supposed to receive sex education from their immediate family in the past, but due to modernization, western civilization, and the breakdown of family life, this practice appears to have been undermined. As a result, the youth are now at the mercy of the larger society and other socialising agents, who might not provide them with accurate information that can help them make the transition from childhood to adulthood. Oganwu (2003) in his study shows that fears should be reduced through confidence, and confidence is gained through knowledge and relevant impressions. According to Bucher and Lewis (2002) a proper sexuality education ensures that the brain is turned in such a way that it can exert self-control when they have urge for sex, they need proper education to forestall any hasty action that may lead to regret

The influence of religion on teenage sexuality is one aspect that seems not to have received enough consideration. In Nigeria, there seems to be little attempt to confirm the underlying mechanism via which religion influences sexual activity, despite the fact that numerous researches have demonstrated a correlation between teenage sexual behaviour and religious devotion (Lehrer, 2004). The degree of devotion to religious institutions may be a more significant factor in determining sex education. Religion tends to provide people with a feeling of purpose in life, which encourages thoughtful decision-making. By sharing their beliefs and practices, religious organisations aid in the moral and spiritual growth of youth. Through sex and abstinence education and parent-child communication, the majority of faith-based organisations specifically address the problem of teenage

sexuality within the framework of faith (Odimegwu, 2005). Since many people derive their moral guidelines from religious ideals, group teachings are likely to influence how people create their attitudes, values, and decisions.

Greenberg and Brussels (2000) stated that religion and spiritual beliefs influence feelings about morality, sexual behaviour, pre-marital sexual behaviour, adultery, divorce, contraception and abortion. Some of the positive impact of religion on sexuality have been said to include assertiveness, postponement of age of first sexual experience, diminished pre and post-marital sexual permissiveness, responsible relationship in marriage and parenthood. According to Babalola (2016) pointed out that parents should train up their children in Godly way so that when they grow up they will not depart from it. Religion was believed to have the capability to guide students against various kinds of immorality because of the fear of God would have been inculcated in them. The rule governing the knowledge of right and wrong that a child must acquire exist not just for the family but for the society. Babalola (2016) stated further that the spiritual and moral deprivation in the society be changed and improved by fearing God. She also encourages moral instructions and earnest appeal in churches, mosques and in community gatherings to assist in the moral development of the youths.

Statement of the Problem

Countless adolescent girls from Nigeria undoubtedly wander the streets of urban areas, willing to pose as attractive women for different males in exchange for money. These premarital affairs sometimes lead to deadly abortions, sexually transmitted infections, and undesired pregnancies.

Primarily, victims are teenagers from secondary schools located all around the nation. There seems to be insufficient sex education to blame for this unpleasant circumstance. Many parents tend to oppose teaching their children sex education in schools, perhaps because of the disparities in exposures and religious beliefs. Some even hold the opinion that the immoral actions in the society today are a direct result of the things that students expose to, creating a false impression of what is either acceptable or not acceptable.

Sex issues are becoming alarming and this necessitates immediate action because moral principles and ethical orientation of the people are declining. While the government of Nigeria has formed a number of bodies to further ethical orientation, sex education has been explored in many ways by various bodies and scholars in Nigeria. All these initiatives, nevertheless, do not appear to be enough to address deplorable sexual problems, the society is still engulfed in filthy, immoral developments, and schools are quickly turning into breeding grounds for immoral and shameful sexual activity. It is on the foregoing premise that the researcher examined the impact of religion on secondary school students' knowledge of sex education in Ekiti State, Nigeria.

Purpose of the Study

This study examined the impact of religion on secondary school students' knowledge of sex education. It also examined the secondary school students' level of knowledge of sex education.

Research Questions

The following research questions guided this study:

1. What is the level of secondary school students' knowledge of sex education in Ekiti State?
2. What is secondary school students' perception of sex education in Ekiti State?
3. What is the perceived impact of religion on secondary school students' knowledge of sex education in Ekiti State?

Methodology

A descriptive research design of the survey type was adopted for the study. The researcher used the descriptive survey design to obtain the data on the impact of religion on secondary school students' knowledge of sex education. The population of the study comprised all Senior Secondary School students across the 16 LGAs in Ekiti State. The sample for the study consisted of 300 students who were selected through multistage sampling procedure. The first stage involved the use of simple random sampling technique to select one LGA in each of the three senatorial districts in Ekiti State. At the second stage, simple random sampling technique was used to select five schools from each LGA, while the third stage involved the selection of 20 Senior Secondary School students using simple random sampling technique.

The questionnaire designed by the researcher tagged 'Questionnaire on the Impact of Religion on Students' Knowledge of Sex Education' was used to collect relevant data for this study. The questionnaire consisted of three

sections; A, B and section C. Section A elicited personal data of the respondents while section B consisted of items that measured respondents' knowledge of sex education as well as the impact of religion on respondents' knowledge. Section C was made up of five items that elicited information on respondents' perception of sex education. The items in sections B and C were worded on 2-point rating scale of Agree (A) and Disagree (D). The face and content validity of the instrument used in this research were ascertained by Social Studies experts through proper scrutiny and necessary amendments. The reliability of the instrument was established through a trial test. The instrument was administered on 20 respondents not used in this study. The data obtained from this trial test were thereafter subjected to Cronbach reliability testing where a reliability coefficient of 0.77 was obtained. The coefficient was adjudged to be high enough for the study. The researcher personally administered the questionnaire to the respondents with the help of one trained research assistant in each of the senatorial districts. Items which needed clarification were explained to the respondents. The data collected were analysed using frequency table and simple percentage scores.

Results

Research Question 1: What is secondary school students' perceptions of sex education in Ekiti State?

Table 1: Frequency Count and Percentage of the Secondary School Students Perception of Sex Education

<i>Items</i>	<i>A</i>		<i>D</i>		<i>Remarks</i>
	<i>f</i>	<i>%</i>	<i>f</i>	<i>%</i>	
Sex education is an important aspect of one's life	235	78.3	65	21.7	<i>Positive</i>
Sex education is not a waste of time	268	89.3	32	10.7	<i>Positive</i>
Sex education helps students to make informed decision about sexual behaviour	282	94.0	18	6.0	<i>Positive</i>

Discussing sexualities with my parents is what I cherish 268 89.3 32 10.7 *Positive*

I heard about sex education through the media 217 72.3 83 27.7 *Positive*

Table 1 shows that 94% of the respondents agreed that sex education helps students to make informed decision about sexual behaviour. Also, 89.3% of the respondents agreed that sex education is not a waste of time. In addition, 89.3% of the respondents agreed to cherish discussing sexualities with their parents. 78.3% of the respondents agreed that sex education is an important aspect of one's life.

Finally, 72.3% of the respondents agreed to have heard sex related issues through the social media. By implication, secondary school students' perceptions of sex education in Ekiti State is positive.

Research Question 2: What is the level of secondary school students' knowledge of sex education in Ekiti State?

Table 2: Frequency Count and Percentage of the Secondary School Students Knowledge of Sex Education

<i>Items</i>	<i>SA</i>		<i>D</i>		<i>Remark</i>
	<i>f</i>	<i>%</i>	<i>f</i>	<i>%</i>	
Only girls are sexually abused	285	95.0	15	5.0	<i>High</i>
Virginity is only matter for girls	273	91.0	27	9.0	<i>High</i>
There is a risk of pregnancy if the family planning method is not adopted	246	82.0	54	18.0	<i>High</i>
Unplanned pregnancies cause abortion	276	92.0	24	8.0	<i>High</i>
Sexual Infection is transmissible from one partner to another	270	90.0	30	10.0	<i>High</i>

Table 2 reveals that 95% of the respondents agree that only girls are sexually abused while 5% disagree, 92% of the respondents agree that unplanned pregnancies cause abortion while 8% disagree. 91% of the respondents agree that virginity is only matter for girls while 9% disagree, 90% of the respondents agree that sexual infection is transmissible from one partner to another while 10% disagree. Finally, 82% of the

respondents agree that there is a risk of pregnancy if the family planning method is not adopted while 18% disagree. Therefore, the respondents agreed that the students' knowledge of sex education is high.

Research Question 3: What is the impact of religion on secondary school students' knowledge of sex education in Ekiti State?

Table 3: Frequency Count and Percentage of the perceived impact of religion on secondary school students' knowledge of sex education in Ekiti State

Items	SA		A		D		SD		Decision
	f	%	f	%	f	%	f	%	
Religion affects the sexual lifestyles of students	120	40	99	33	63	21	18	6	High
Religious values are the source of moral proscriptions for many individuals	78	26	63	21	108	36	51	17	Low
The teachings of the churches are likely to play a role in the formation of individual attitudes, values and decision	153	51	75	25	45	15	27	9	High
The Christian religious groups have strong opposition against premarital sex	87	29	72	24	99	33	42	14	High
Students with no religious affiliation would be most likely to accept and engage in premarital intercourse	168	56	102	34	18	6	16	4	High

Table 3 shows that 90% of the respondents agree that Students with no religious affiliation would be most likely to accept and engage in premarital intercourse while 10% disagree. 76% of the respondents agree that the teachings of the churches are likely to play a role in the formation of individual attitudes, values and decision while 24% disagree, 53% of the respondents agree that the Christian religious groups have strong opposition against premarital sex while 47% disagree. 73% of the respondents agree that religion affects the sexual lifestyles of students while 27% disagree. Finally, 47% of the respondents agree that Religious values are the source of moral proscriptions for many individuals while 53% disagree, This implies that the respondents agreed that religion had impact on students' knowledge and sex education.

Discussion

The result in table 1 revealed that 93% of the respondents agreed that the students had high knowledge of sex education. The findings is in line

with Action Health Inc (AHI), (2003) the interactive nature of the subject of sexuality is content ranges from human growth and development, relationships, life skills, sexual attitude and behavior, sexual health, society and culture. Also, supported by Giddens (2001) the development of right attitudes about sexuality is necessary for effective control of emotions.

The result in table 2 showed that 90% of the respondents agreed that the students had knowledge of sex education. The findings is in agreement with Oganwu (2003) the result shows that fears should be reduced through confidence, and confidence is gained through knowledge and relevant impressions. According to Bucher and Lewis (2002) a proper sexuality education ensures that the brain is turned in such a way that it can exert self-control when they have urge for sex, they need proper education to forestall any hasty action that may lead to regret.

The result in table 3 revealed that 67.8% of the respondents agreed that religion has great impact on the

student's knowledge and attitude towards sex education. The finding is in accordance with Bucher and Lewis (2002) An individual with a sound education on sexuality is more likely to impact positively of live as he/she is alive to his responsibilities of reducing the occurrence and spread of sexually transmitted diseases (STDS).

Conclusion

Based on the findings of the study it could be concluded that secondary school students had good perception and high knowledge of sex education. It could also be concluded that religion had significant impact on students' knowledge of sex education.

Recommendations

The following recommendations are made based on the findings of this study:

1. It is recommended that religious leaders should encourage the inculcation of sex education into the younger ones.
2. Parents, teachers as well as administrators should be give adequate information on sex education to both public and private secondary school students to assist them to develop right attitude towards sex education
3. Students should be well informed through media so that incidences of unhealthy sexual exploration and teenage pregnancy would be reduced.

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SOILLESS AND SACK FARMING: CREATIVE OPTIONS FOR AGRICULTURAL PRODUCTIVITY IN HOMES, SCHOOLS AND COLLEGES

BY

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Abstract

Soilless farming is slowly gaining grounds among young persons in the agricultural sector to meet the rapid demand for food in Nigeria. With an increasing population in the country, there is need to address the challenges in food production by seeking alternative sustainable medium. Despite the vast amount of arable land in Nigeria, agricultural production remains below potential due to several factors such as the problems of soil degradation, declining soil fertility, soil erosion, flooding, desert encroachment and drought. Hence, this has become a major challenge facing land use for food production and has worsened by the effect of climate change. Soilless farming possesses a potential method of growing plants without the use of soil in which the nutrients required for growth are supplied through other means; soilless farming is a way for youth especially in schools and colleges with interest in the sector to explore because it has proved to be less rigorous, more efficient, high yielding and supports non-seasonal food production through inclusion of technology in hydroponics, aeroponic and aquaponic methods. Sack farming is also a form of soilless farming as soil or inert medium can be used, it is a method of growing crops in soil-filled sacks bags that allows people to grow in their backyards, rooftops and other places. It is a good option for landless households to ensure food and nutrition security, give solution for people who have land with low soil fertility or too rocky to support cultivation. This in no doubt create interest among youth in farming. This study provide an understanding of the concept of soilless farming, techniques of soilless farming, benefits of soilless farming, potential limitations and challenges, sacks and bags farming and recommendations on soilless farming systems in homes, schools and colleges.

Keywords: Soilless farming, Sustainable, Hydroponics, Aeroponic, Aquaponic.

Introduction

As the world grapples with the challenges of food security, sustainability, and climate change, with rapid growth in megacities, Agriculture needs to undergo a revolution in order to address the problem of food scarcity and hunger by thinking creatively about how to produce food in non-traditional

settings. Schools and colleges in particular offer a unique opportunity to integrate agricultural production into education by providing hands-on learning experiences for students in promoting sustainable food systems. One promising approach is through soilless farming (hydroponics), which involves growing crops without soil but

instead using a supplementary nutrient mixture (Aires, 2018).

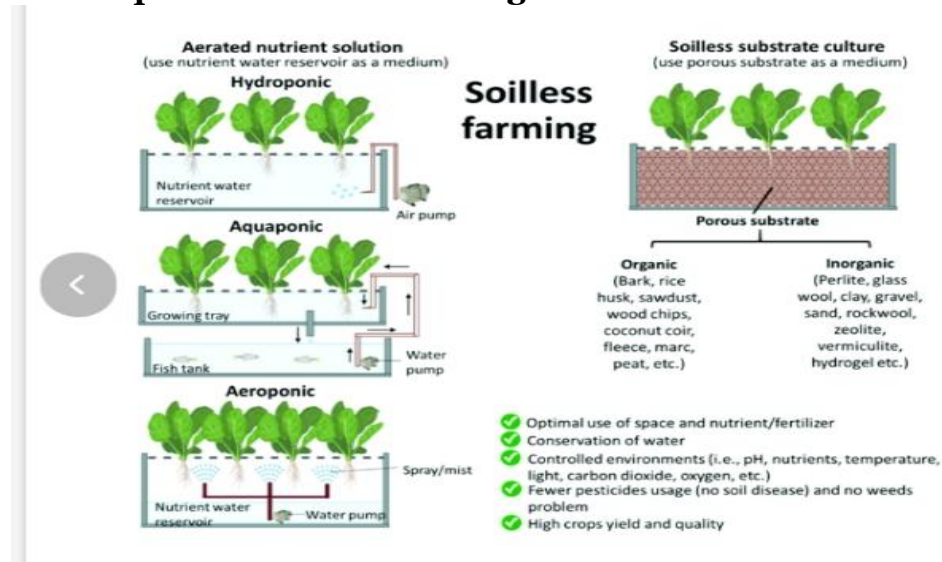
Soil is the most available growth medium (GM) for plants. It provides anchorage, nutrients, air, water etc. for successful plant growth. Different soil types sometimes also pose serious constraints to plant growth, such as inappropriate soil PH, unfavorable soil compaction, poor drainage, degradation due to erosion, presence of pathogenic organisms etc. moreover, conventional cultivation of crops requires resources such as space, often irrigation and weather dependent. Soilless farming can be extremely successful in homes, schools and colleges if given adequate considerations. Likewise sacks farming has another forms of soilless farming is an effective way of growing crops in sacks, garden bags, containers or plastic with or without soil. This method saves space, water, money and time of farming. By learning about soilless farming in the classroom, it helps students to be educated on the entire process from setting up to harvesting crops, thus, able to troubleshoot and make improvements. Young students are excited and eager to get involved in a hands-on activity

combined with the right measures. Implementing soilless farming in homes, schools and colleges can provide education as well as nutritious food source for children and staff (Stajano, (2003).

Concept of Soilless Farming

Soilless farming in simple term is growing of crops without soil, it is important to note that soilless farming isn't a way to replace soil but rather to complement soil (Ogbole Samson, 2019). Unlike the traditional method using soil where crops need to 'hustle' with weeds for nutrients, water, space, sunlight, all these are absent in soilless farming. In fact, crops grown under this condition suffer less from pests and diseases attacks, also it saves a lot of water and resources. Soilless farming is already gaining ground in Nigeria. Onafowora, (2017) acknowledged to be the pioneer of soilless farming in the country, has already trained about 10,000 students on how to go about this method of farming. But if this can be incorporated in urban schools and colleges this will invariably reduce food scarcity.

Techniques of Soilless Farming



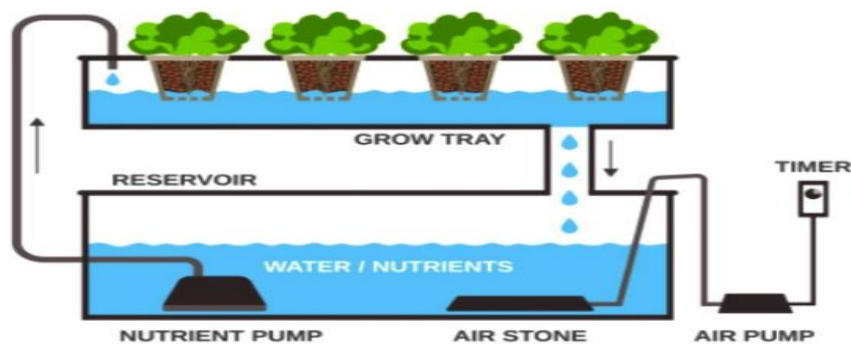
There are three (3) major techniques of soilless farming, with five essential things that must be fulfilled by each technique for crops to thrive. (i) Acidity of the medium (water, culture etc.) must be suitable for the plant growth (ii) Oxygen must be readily available, ordinarily, plants grown on soil get oxygen needed for respiration from air in the soil (iii) The

right proportion of nutrients must be supplied at the right time (iv) A structure must be put in place to give support to the plant root or the aerial part of the plant (v) The required amount of light must be made available as well.

Meanwhile the types include: hydroponics, aeroponics and aquaponics

HYDROPONICS

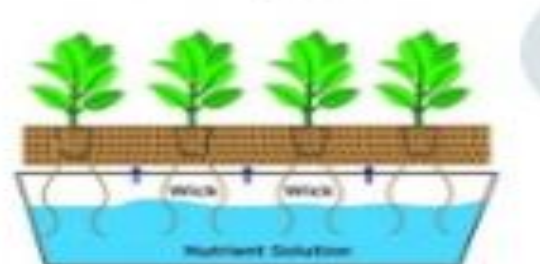
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1. Hydroponics: the definition of hydroponics has been broadened to mean “the cultivation of plants without soil” (Soreno, 2009). To be exact, hydroponics is the genesis of soilless farming before some variations were developed. In hydroponics, plants are grown in an inert medium such as rice husk, coco coir fiber, sawdust and are fed with nutrient-rich solution, the nutrients are carefully balanced to meet the specific needs of each plant. The purpose of the inert medium is to give the plants access to oxygen for proper growth. It is a suitable method for growing fresh vegetables like spinach, lettuce, bell pepper, tomatoes, cucumber, herbs like mints, chives, flowers and fruits like strawberry in urban areas where the arable land is polluted. Plus, studies indicate that this system of soilless farming has a 20

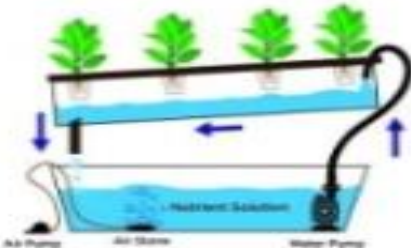
to 25% higher yield than traditional farming practices. The following figures from 1 to 5 show some kind of hydroponics mainly used, but any person can put his own design according to his need and the kind of plants, according to the main target and the aim of hydroponics function. The following are a brief of five systems mainly used.

Wick System



i. Wick system: the wick system (figure 1) is the simplest of all types of hydroponic systems. That's because traditionally it doesn't have any moving parts, thus it doesn't use any pumps or electricity. However, the wick is the connecting part between the potted plant and food solution in the existing reservoir. Because it doesn't need electricity to work, it's also quite useful in places where electricity can't be used or is unreliable. The wick system is an easy type of system to build when first learning about hydroponics or just to get feet wet first. This type can be used by teachers in classroom as experiments for students. In wick system the plants are cultivated in substrate by allowing wick to draw nutrient solutions to the plants roots.

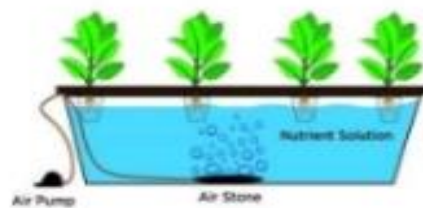
Nutrient Film Technique



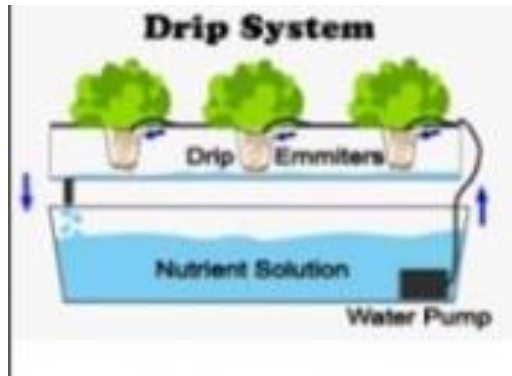
ii. Nutrient film technique (NFT): a thin layer of nutrients-rich water runs around plant roots in the NFT system, giving a steady supply of essential nutrients (EL-Kazzaz & EL-Kazzaz, 2017). A shallow stream of nutrient-rich water flows over plant roots, this method ensures consistent nutrients delivery to the plants, promoting efficient absorption. The solution is pumped from a holding tank, through irrigators at the top of every slopping pipe and the run-off from the bottom of the channels is continuously recycled. It is possible to

make the angle of the pipe smaller and add an overflow pipe similar to what's in an off and flow system. This would remain in the event of a power or pump failure. Because of the confined space of a PVC pipe and the requirement for nutrients to continuously flow over the roots, the nutrient film technique is particularly well suited to plants that have small root balls such as lettuce, strawberries, and herbs.

Deep Water Culture (DWC)



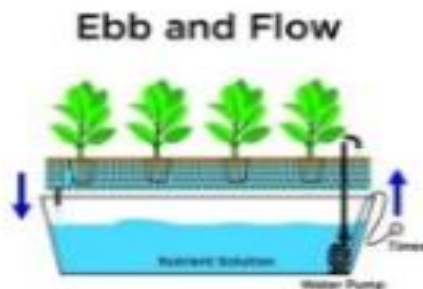
iii. Deep water culture (DWC): deep water culture involves suspending plants root into nutrient-rich solution (Khan, 2018). Oxygen is supplied by an air pump that runs continuously. A water culture system can easily be set up in glass basins, (fish ponds), plastic boxes, ice boxes, concrete basins or engraved basins covered with polypropylene sheets. Since the plants are floating and are continuously in contact with the nutrient solution, there is no risk of damage to plants in the event of a power outage or stop the air pump. The convenient plants in this system are Lettuce, strawberries, and herbs grow particularly well in this system.



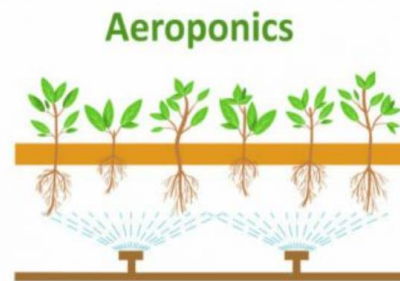
iv. Drip system: drip hydroponic system is at least two containers, one on top or higher than the other. Plants are located in the top container, while

the nutrient solution is in the bottom container. The nutrient solution is pumped up to drips located by the stem of each plant with a water pump, and an aquarium air stone is used to oxygenate the water. The nutrients filter down to the plant roots and are passed back to the bottom container. Typically, both the water and air pumps run continuously with this type of system. A crop of almost any plant will grow well with this system. Plants with larger root balls are particularly suited to drip systems. However, the plants are grown in supportive mediators

off intermittently (perhaps 30 mins, 15min off), to flood the grow



v. Ebb and flow systems: Ebb and flow system is another inexpensive type of hydroponics setup. The setup is very similar to the drip system, where there are two containers, the one on top containing the plants in pots with substrate, and the one on the bottom containing the nutrient solution. Rather than the nutrient solution being passed slowly to drippers at the stem of each plant, the nutrients are pumped in large volumes into the top container, flooding the container. An overflow pipe determines the height of the nutrients, typically to where the roots begins at the base of the stem, with excess liquid being recirculated through the overflow pipe back to the bottom container. With Ebb and flow system, the pump is switched on and

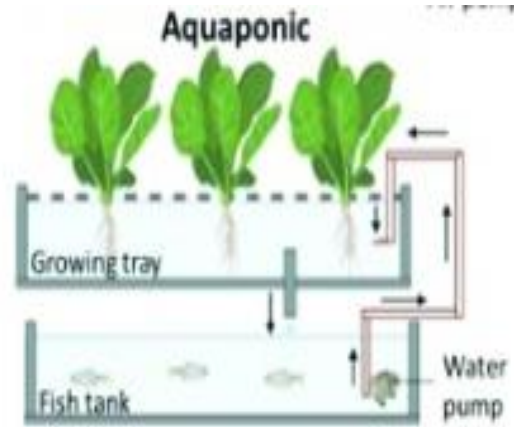


tray periodically. When the pump is switched off, all of the nutrients are siphoned out of the grow tray via the pump line. The emptying period allows for oxygen to reach the roots, and for this reason an air stone is not absolutely required for ebb and flow systems. As with drip systems, almost any plant will grow well with this type of system. Plants with large root balls are also particularly suited to off and flow systems.

2. Aeroponics: Aeroponic is an environment-friendly way of farming in which the roots are suspended in the air and plants grow in a humid environment without soil. It is a variation of hydroponics where both growing medium and flowing water are absent. First the plants are propagated to a stage where their roots are already

emerging, such plant is then transferred into the aeroponic system where it will take nourishment from the misted solution that is sprayed periodically. The system normally turned on for only a few seconds every 2-3 minutes. This is sufficient to keep roots moist and the nutrient solution aerated. This method reduces the usage of water and fertilizer. And no pesticides need to be used in this method because the plants are grown in a controlled environment.

3. Aquaponics: aquaponics is a symbiotic system that combines hydroponics with aquaculture. It involves cultivating plants and fish together in a closed-loop system. The waste produced by the fishes in ammonia form are converted by nitrifying bacteria into nitrite, the nitrate that is suitable for plant use. As the converted waste passes through a hydroponic plant growing section, it is filtered because the nutrients are nitrates are being absorbed, then the water is recirculated back in the fish tank for reuse. Aquaponics can be likened to a natural ecosystem that continuously recycles water, hence making the system use 90% less water when compared to traditional farming. In addition, like the other systems, aquaponics is environmental-friendly and sustainable. Under this system, food yield is maximized because it is possible to harvest both fish for protein source and fresh plant produce.



Benefits of Soilless Farming

Unlike conventional farming, soilless farming system offers numerous benefits such as:

- Absence of weeds competing with crops for space, water, light and nutrients.
- Year- round crop production to boost food security and maximize business profit.
- Help in optimal use of nutrients by giving the plants the exact nutrients needed.
- Temperature, humidity, light and air can be controlled under this system of farming.
- Soilless farming requires less water because water is circulated as run-offs, captured and returned to the system.
- Minimize pests and diseases with better growth rate.
- Contamination of fertile land does not exist due to the use of herbicides in controlling weeds.
- Space is utilized better as crops can be planted in a spare room, small apartments etc.

Potential Challenges and Limitations of Soilless Farming

While soilless farming offers numerous advantages, it's essential to acknowledge some of the challenges and limitations. Such challenges include:

- (i) High initial investment costs for equipment and materials: setting up a soilless farming system require a higher initial capital compared to in towns and cities
- (ii) Lack of expertise and training for teachers and students: successful soilless farming requires technical knowledge and expertise in managing nutrient solutions, monitoring environmental factors and troubleshooting system issues.
- (iii) Balancing education with production and sustainability: it may be difficult for students to really balance their education with this system except it is integrated into the existing curriculum as the system requires time and commitment to avoid mistakes when dealing with crops. Supplying low or too high dosage of nutrients may cause a lot of damage.
- (iv) If pests and diseases find their way into this system, they can be spread easily because of how close the crops are to one another.

Sacks and Bags Farming



Homegrown tomato plants sown in sacks

Sacks farming is a form of soilless farming as crops can be grown with or without soil but inert medium.

Sacks' farming is good for crops that do not take long to mature, have shallow roots and do not grow too tall. These crops include vegetables such as cucumbers, lettuce, pepper, spinach, okra and tomatoes, onions, capsicums, cowpeas, sweet potatoes, vines and squash butternuts, ginger and others. In some African countries like Kenya, Malawi, Ghana, Cameroon many residents living in towns and cities are turning to urban farming, which is known as vertical sacks or bags farming to fight poverty, enhance food security and improve environmental sustainability.

This modern sustainable agricultural practice has been helping communities to understand the principles of good nutrition by championing the concept of vertical farming. The technology allows the growing of crops on soil or other growing medium such as coco peat, perlite and pebbles, in large sacks, bag-gardens and enabling farmers to grow vegetables on one square meter. Soil and manure should be mixed in the ratio 50:50. If soil is not use compost can be mixed with coco peat. There is need to check the nutrient level of the growing medium chosen, small pebbles like stones should be added to the growing medium to drain water well. Poor drainage can cause root rots for plants which can lead to the death of the plants and negatively impact the availability of oxygen in the growing medium.



Vegetables Grown In Buckets

Also pots or buckets garden follow the same pattern with sacks /bags farming except that holes must be made at the sides and bottom of the buckets to prevent water-logging. Buckets can be use majorly for planting vegetables and care must be taking in the choice of containers to avoid contamination.

However, sacks' farming and buckets garden are low-cost and economical but high-yielding food security technology developed to maximize land and water use. The systems and bucket garden does not require much from anyone who wants to venture into and relatively suitable to practice in urban schools and colleges. The approach is seen as low-cost, economical and healthy solution to food insecurity and runaway unemployment in the society. Most interesting thing about sacks farming and bucket garden is that it is suitable and efficient for offices, hospitals, informal settlements, and schools.

In Nigeria today as well as Ekiti state, people are looking for fresh vegetables and any youth who venture into these systems can become a supplier of fresh vegetables in his or her neighborhood.

Conclusion

Soilless farming in Homes, schools and colleges offers a unique opportunity to promote education, sustainability and community engagement. While there are limitations and challenges to be considered, innovative solutions, collaborations and resources can help overcome these obstacles. By implementing soilless farming initiatives, Homes, schools and colleges can provide hands-on learning experiences for students, foster community awareness and engagement, support local food systems and nutrition education and

develop innovative solutions to food scarcity.

Recommendations

Based on the discussion, the following are recommended:

1. Students should be involve in economical methods thereby extend it to homes.
2. Advance soilless farming systems should be done in school laboratories in preparing students for careers in sustainable Agriculture.
3. Establishment of soilless farming club/Organizations to promote students interest.
4. Schools and Colleges should provide students with opportunities to work on soilless farming projects.
5. Schools should offer internships or apprenticeship with soilless farming companies
6. Government should offer grants and funding opportunities to support soilless farming initiatives and research projects in secondary schools and higher institutions all over the country.

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TEACHER TRAINING EDUCATION, LANGUAGE USE AND ENTREPRENEURIAL DEVELOPMENT IN NIGERIA

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Abstract

Teacher training education plays a pivotal role in equipping educators with the necessary tools, methodologies, and pedagogical approaches to effectively teach entrepreneurship. Entrepreneurship education goes beyond imparting theoretical knowledge; it focuses on empowering teachers with practical insights, experiential learning opportunities and innovative teaching techniques tailored to the unique demands of entrepreneurship education. It is necessary to equip educators with the knowledge, ideas, approaches, pedagogical tools, and mind-set necessary to cultivate entrepreneurial thinking, this approach will not only enhances the quality of teaching and learning experiences but will also empowers students to navigate the complexities of an entrepreneurial world with confidence and competence. This paper discusses the strategic utilization of teacher training education as a powerful vehicle for instilling entrepreneurial competencies in students of higher institution of learning. The teacher training objectives should be align with educational policies and socio-economic needs of the society, the innovative teaching methodologies and experiential learning opportunities should be incorporated, the identification of core entrepreneurial competencies must be learnt and the cultivation of a supportive ecosystem conducive to entrepreneurial development within educational institutions.

Keywords: Development, Entrepreneurial, Entrepreneurship, Skill acquisition, Teacher training, Entrepreneurship is a derivative of the French word 'entrepreneur' mean

Introduction

Education is a systematic process through which a child or an adult acquires knowledge, experience, skills and acceptable attitude. Education is seen as a veritable tool in human development. It has different connotation from schooling. Education deals with the total process of human learning by which knowledge is imparted, faculties are trained and different skills are developed. It is a

life-long process which encompasses all aspects of life, be it physical, social or spiritual environment. Education remains a potent factor in national development. This makes an individual civilised, refined, cultured and educated (Lihua, 2022). It is a continuous process; life happens to be a continuous process of growth and development; this is why education is also a continuous process which begins from womb to tomb.

Education is a dynamic instrument of change which is expected to affect or condition the social behaviour of the person being educated. (Olaseinde, 2016) Education is not only collection of information, but it is acquisition of experiences throughout life in the social and natural environment. It is also the development of all those capacities in an individual, which makes him to control his environment and fulfill his possibilities (Joensuu et al, 2020). Schooling is just one medium through which education can be provided and made accessible. Education means an act or process of educating or applying discipline on the mind or a process of character transformation. An individual learns through his experiences, which are acquired throughout his life. Education right from cradle; it has been recognised as a veritable means of progress and well-being of nations and individuals (Nguyen, 2023).

This is why each country has progressively reviewed their system of education with a view of bringing about speedy national development. This is because a country's level of social-economic development is generally linked with the type of educational philosophy or system in operation. However, Ayeni in Borode and Ayeni (2019) define education as a continuous process of acculturation through which an individual is aided to attain his optimum level of all round development by utilising the potentials of informal, non-formal and formal means. So education in Nigeria does not only stand out as an instrument of national wealth and development but also signifies to the individual Nigerian an important vehicle of upward social and political mobility as well as economic comfort. An Entrepreneur is a person who sets up a business or

businesses; he takes on financial risks in the hope of profit.

Adetayo (2015) defines entrepreneur as a person or agency that treats the business or businesses; bear the risk and uncertainty to achieve profitability and growth by perceiving opportunity in the environment. Entrepreneur is someone who undertakes something or someone who owns or runs a business. It also means someone who risks his capital in a business enterprise; a person who starts or organizes a business company, especially one involving risks. An entrepreneur has also been defined as a person who does not work fulltime in the service of another and who has economic responsibility for his or her own work, by owning the business, an entrepreneur may experience both the positive prospects and the risks. It can also be the way a person chooses entrepreneurship. First, the person becomes interested in entrepreneurship, then ponders about entrepreneurship and then intends to become an entrepreneur by setting up his or her own business.

Entrepreneurship is derived from the French word 'entrepreneur' this means someone who undertakes business; it is someone who owns or runs a business. It also means someone who risks his capital in a business enterprise; a person who starts or organizes a business company, especially one involving risks. Entrepreneurship is the ability and readiness to develop, organise and run a business enterprise along with any of its uncertainties in order to make profit. With these, Bureau of Statistics (2015) is in support of entrepreneurial education and believes that Entrepreneurs performed the role of change agents, as they integrate various factors of production by producing new products or

commodities and novel to the society by means of their innovative and creative ideas. The continual transmission of entrepreneurship development is of great benefit and greater task to the government, it creates awareness in them through knowledge, skill, behaviour and attitudinal development of persons to assume the role of entrepreneur (Hou, 2023).

Entrepreneurs production transformation embodied the ability to identify business opportunities and harness the necessary resources in utilising the opportunities identified. According to Ayatse (2013), the education received through entrepreneur activities has to do with collection of formalized teaching that reforms, it educates and trains anyone concerned in the business establishment. This is the process through which individuals are made participating members of the society. This enables them to become capable of living in the society so as to contribute towards its economic development. One of the ways to receive entrepreneurship education is the promotion of entrepreneurship education through appropriate teaching strategies in Nigeria schools, in support of this; Kraus, et al (2019) declare that this will help in creating and providing gainful employment for a teeming population of unemployed and under-employed Nigerians is a daunting task. In recent years, Nigeria has come up against problems of unemployment and many have plunged into a mission of creating new business opportunities for their citizens. Unemployment has compelled countries to find ways to enable their citizens to become self-employed. Under these circumstances, the concepts of entrepreneurship and entrepreneurship education are now appearing in educational curriculums.

As such, it is seen as a basis for developing social and economic well-being in Nigeria system of education.

Entrepreneurship education is the process of providing individuals with concepts and skills to recognise opportunities and the skills of others. (Aina, 2016) Entrepreneurship education can be conceived as that type of education that deals with the inculcation into students, the ability to study ones environment and make use of available opportunities into some economic gain. This made Afolabi et al (2014) to affirm that entrepreneurship education is a process that equips individual with entrepreneurial skills, knowledge and right attitude to work and sharpen their talents, natural endowments and competencies so as to make them self-reliant, self-employed and employer of labour. Likewise, it is about developmental attitudes, behaviours and capacities of participating individual; it is the application of the entrepreneur skills and attitudes that can take many forms during individual career by creating a range of long-term benefits to society and the economy (Anho, 2014). Entrepreneurial education seeks to provide students with the knowledge, skills and motivation to encourage entrepreneurial success in a variety of setting. Variations of entrepreneur education are offered through higher education programmes.

Entrepreneurship development is a programme which helps in developing entrepreneur abilities. The skills that are required to run a business successfully is developed among the students through entrepreneurship education. Entrepreneurship education at any level should aim at:

- a) developing in youths the right attitudes and skills towards owning a business.

- b) equipping an individual with the requisite knowledge and skills for paid or self-employment.
- c) enabling an individual to develop skills for making rational economic decisions, as a producer.
- d) developing individuals who will be capable of meeting the modern technological and business challenges.
- e) developing individuals who will be properly equipped with the requisite knowledge and skills for productive work life.
- f) preparing business and industrial managers who will be capable of meeting technological and managerial complexities of modern industry.

It should be noted that as employment opportunities shrinks, the acquisition of entrepreneurial skills for self-employment becomes major imperatives in the schools.

The introduction of entrepreneurship education is an indication of its importance in economic empowerment and job creation. Entrepreneurial training programme is an effort to convert a person to an entrepreneur through structured training. Entrepreneurial training helps entrepreneur to respond appropriately to the market and he or she is required to understand the needs and demands of the people. Entrepreneurship education offers a practical understanding of key business concepts and strategies, equipping individuals with the tools they need in order to succeed. The training received helps entrepreneurs to develop a solid business financial management skill. This helps individual to enhance the leadership abilities and it includes effective communication and negotiation. The education received has become

imperative as it helps Nigeria to continue to produce graduates that are self-reliant and will no more dependent solely on white collar jobs.

Entrepreneurship education can be an important part of teacher training because it can help teachers develop skills that make them self-reliant and successful entrepreneurs.

Here are some strategies for encouraging entrepreneurship education in teacher training:

- Teach entrepreneurship throughout the education system
- Provide information, advice, coaching, and mentoring
- Facilitate access to funding and support infrastructure for business start-up
- Teach courses that incorporate history
- Share the experiences of successful entrepreneurs
- Offer career education that encourages creative and honorable means of livelihood
- Provide in-service training for basic education teachers

In order to support productivity and growth in Nigeria, it is essential to invest in education and training. Education remains the pivot upon which the wheels of the society revolve (Ediagbonga, 2013). The inability of unemployed graduates in the society to contribute meaningfully to the economic development of the nation by being self-employed is what brought the introduction of entrepreneurship education in schools and society. Olaseinde (2016) observes that the first and the best way to deal with the learners' problems is the teacher. The teacher must be properly trained in the acquisition of all the relevant skills that will make such teacher serve as a good model to the learners in the class. Teacher education needs to develop an entrepreneurial approach to teaching and learning. It needs to create an

environment that enables innovation in teachers' education and teaching practice.

According to Anyway (2013) entrepreneurship education should play a promoting role in the process of transforming life. Entrepreneurial teacher training programmes should motivate student- teachers to develop their own entrepreneurial knowledge and skills. As entrepreneurship education plays a mediating role in the transformation of entrepreneurial activities to intention behaviour. (Obanya 2014) University entrepreneurial education is in existence, a new venture in itself. (Lawal, 2013) point out that entrepreneurship education is a key area for universities to support entrepreneurial activities. Teachers cannot teach how to be entrepreneurs without themselves being entrepreneurial.

Student teachers should get the opportunity to experience entrepreneurial learning in their training. Student teachers should graduate with the awareness and skills of entrepreneurial principles which will enable them ignite entrepreneurial sparks and inspire their students' right from the beginning of their professional career. In order to act entrepreneurially, active learning is necessary. Nigeria needs creative and innovative entrepreneurship, a flexible and resilient workforce that is well equipped with the necessary skills and key competences. Contemporary pedagogies such as project-based active learning should be applied. These will be piloted in specific teacher education programs. Real-life situations out of classroom should be made available to all student teachers. Entrepreneurship education has inevitably, become recognised as a major solution to check unemployment. Entrepreneurship

education is designed for learning and it can only be operated effectively in an efficient manner when human performance has been brought up to and maintained at a peak level of mastery.

Language used in Entrepreneurial Education

Entrepreneurship studies were adopted in the Nigerian higher institutions as a mandatory course and also its inclusion in the educational curriculum, with Centres for Entrepreneurship Development (CED) established in all tertiary institutions operating in the country (Fadeyibi & Chaudhuri, 2014). Language is at the centre of education and the right language will certainly make for optimal achievement in learning. It was proposed that using the mother tongue or the language of the immediate environment in which the students are comfortable with will build a solid entrepreneurial foundation. Therefore the use of the language of the students' immediate environment will give the students solid entrepreneurial foundation and later the students are introduced to a foreign language. As a nation committed to unity in diversity, there is no better way than the government recognizing the major and minor languages and developing them equally.

In this way, multilingualism could become an asset for our country as well as a source of cultural and social enrichment. Language is an essential part of a teacher's daily work, and teacher training programs should include courses that teach language knowledge. Language skills are the foundation for many other areas of development, including reading, writing, communication, social skills, and forming friendships. Akeju and Olanipekun (2014) declare that lack of

entrepreneurial skill is closely related to the poor quality of education. Entrepreneurship development is to present a well-researched information, appropriate knowledge and skills on the concept and practice of entrepreneurship. This helps to develop the learners mind, promote, innovate and enhance creative enterprise characteristics and the capacity for further learning. Language helps students develop an awareness of the skills and strategies they need to complete learning tasks successfully. Teacher training programs should include courses in applied linguistics and academic writing to help teachers develop their language knowledge. Teacher training programs also help teachers develop other skills, Language is an important factor in entrepreneurial development and can be a key part of teacher training education. These include:

- Teaching skills: Teachers learn techniques, approaches, and strategies to plan instruction, provide reinforcement, and conduct assessments.
- Pedagogical theory: Teachers learn sound pedagogical theory.
- Professional skills: Teachers learn other professional skills. Teacher training programs can also help teachers learn new pedagogic ways, innovations, and emerging trends in teaching.
- Language is an important factor in entrepreneurial development and can be a key part of teacher training education:
- Language and entrepreneurial success: Language ability is a vital resource for entrepreneurs, and can be a competitive advantage. It can also help with profit maximization.
- Language in entrepreneurship education: Entrepreneurship

education courses often don't include enough focus on language skills, which can be important for students who are learning French and English as a second language.

- Using reading passages: Reading passages about entrepreneurship or innovation can inspire students to think and behave like entrepreneurs.
- Using classroom activities: Teachers can use classroom activities designed to help students learn about starting a business. These activities can help students learn business vocabulary, marketing, customer service, and more.
- Using the mother tongue: Using the language a child is most comfortable with can help build a solid entrepreneurial foundation.

Innovative teaching methods of entrepreneurship

Language is a key factor in entrepreneurship education, and teachers can be trained to help students develop entrepreneurial skills and attitudes. Entrepreneurship education requires the use of active learning methods that place the learner at the centre of the educational process and enable them to take responsibility for their own learning to experiment and learn about themselves. Such methods have been shown to make learning experiences richer to have positive benefits for students in terms of improving their motivation with positive effects from their engagement with learning and long-term attainment. Thus teachers need the professional competencies to be able to guide students through the learning process rather than, as in traditional methods, communicating knowledge and information mainly

through 'chalk and talk'. They need the skills to be able to ensure the relevance of education to students' learning needs and backgrounds and be able to support students in planning activity. The teacher's role is especially important in the latter stage of activity-based learning, i.e. in the reflection and generalisation stages. Without the right support, students may not be able to draw lessons from their experiences. In this setting, there is a fine balance to be found between too distant interventions that leave learners under-equipped to make the most of the experience and too much supervision which does not leave space for students to develop their independence. This is not to say that it is only teachers who need to change. Students need authentic, practical experiences and realistic learning environments as essential parts of active learning. Teachers need to have access to a varied new range of resources in order to build activities for students that are as true to life as possible, bringing the outside world into the school. This includes, for example, the resources to set up and manage a businesslike project, to organize study visits to companies or charities, or visits to schools by entrepreneurs. This challenges both schools to become more open to their local communities and, in equal measure, businesses and the wider community in general to be willing to play an active and committed role in supporting teachers and schools in their endeavours.

The role of Teacher Training Education in Entrepreneur Development

The teacher training programmes are essential components of entrepreneurial skills which ensure

that educators are equipped with the necessary knowledge, skills, and competencies to effectively teach entrepreneurship and foster entrepreneurial skills among students to give them room for self-reliance during the school programmes and after the graduations. Teacher training programmes are designed for individuals who are ready to become teachers but have not yet entered the profession. These programmes typically are learnt in colleges, universities, or teacher training institutions and provide aspiring educators with the foundational knowledge and pedagogical skills which are necessary to teach in their chosen subject areas, including entrepreneurship education. Training programmes in equipping educators with the necessary knowledge, skills, and competencies to effectively integrate entrepreneurship education and cultivate these skills in students. This emphasizes the ongoing need for teacher training throughout an educator's career to ensure they can adapt and deliver effective entrepreneurship education.

Conclusion

Entrepreneurship education is a lifelong learning process that should start as early as elementary school and progressing through all levels of education, including adult education. The standard and their supporting performance indicators are a framework for teachers to use in building appropriate objectives, learning activities and assessment for their target audience. Using this framework, students will have progressively more challenging educational activities; experiences that will enable them to develop the insight needed to discover and create entrepreneurial opportunities; and the

expertise to successfully start and manage their own business.

Recommendation

The paper recommends that:

1. All facilitators in the programmes should first be given practical training in various areas, adhere strictly to various strategies and capitalise fully on the unique properties of the current strategies used in teaching entrepreneurship development in various areas.
2. There should be investment in research so as to encourage researchers; through this knowledge will expand and innovations will emerge.
3. Government should endeavour to make entrepreneurship education part of teacher education at all levels of education so that the products would strive for self-employment and self-reliance.
4. There should be talks, workshops, seminars well arranged on entrepreneur education for other members and the society at large

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ENHANCING SNAIL FARMING EFFICIENCY THROUGH ARTIFICIAL INTELLIGENCE

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Abstract

The study examined the efficiency of snail farming in Ekiti State through the integration of Artificial Intelligence (AI) technologies. Specifically, the study assessed the current challenges faced by snail farmers in Ekiti State, examined the potential applications of AI technologies in monitoring environmental conditions for snail farming and investigated how AI can optimize feeding schedules and reproductive cycles in snail farming. A descriptive survey design was employed, as it allows for the collection of data from a large number of participants and provides insights into their experiences and perceptions regarding the use of AI in farming practices. The population of the study consisted of snail farmers across Ekiti State. A sample of 150 snail farmers was selected for the study. Data were collected using a well-structured close-ended questionnaire and 4-Likert scale questions. The data analysis involved descriptive statistics using statistical software to generate mean scores and standard deviation. It was established that the major challenges currently affecting the efficiency of snail farming in Ekiti State are unfavourable weather conditions, difficulty in managing the appropriate humidity levels for snails, high cost of feeding, lack of the proper tools and resources to detect and prevent diseases in snails early and inadequate veterinary support or expert advice available for snail farmers. It was also discovered that AI technologies accurately monitor temperature levels in snail farms to ensure optimal conditions, effectively measure and regulate humidity levels in snail habitats, forecast seasonal variations and recommend adjustments to maintain optimal conditions and help in forecasting potential issues with environmental control systems. It was recommended that artificial intelligence significantly enhance snail farming efficiency. It was also recommended that the government should provide training for snail farmers on the use of AI-driven tools and technologies. Snail farmers should implement AI-powered systems for monitoring and regulating environmental factors like humidity and temperature.

Keywords: *Snail Farming, Artificial Intelligence, AI-powered system*

Introduction

Snail farming, also known as heliciculture, has emerged as a vital aspect of agriculture due to its potential to provide a sustainable source of protein and income. In various regions, particularly in Africa and Asia, snails are considered a delicacy, offering high nutritional

value with significant levels of protein, vitamins, and minerals (Omole et al., 2021). As the demand for organic and environmentally friendly protein sources grows, snail farming has been recognized for its ability to contribute to food security and economic development, especially among small-scale farmers. However, despite the

promise that snail farming holds, numerous inefficiencies persist within the traditional farming methods. These inefficiencies are largely due to limited knowledge on optimal snail breeding practices, unpredictable environmental factors, disease outbreaks, and challenges related to market access (Oluyemi & Ajibola, 2020). These issues create barriers for farmers, limiting the scalability and profitability of snail farming.

In recent years, the incorporation of advanced technologies in agriculture, particularly Artificial Intelligence (AI), has demonstrated transformative potential in enhancing the efficiency of various farming practices (Sarker et al., 2022). AI technologies, which include machine learning, data analytics, and automation, have been effectively applied in areas such as crop management, livestock monitoring, and predictive analytics. These technologies enable farmers to optimize resource use, improve productivity, and reduce losses (Bendre & Thool, 2023). The integration of AI into snail farming holds similar potential, particularly in overcoming the challenges faced by snail farmers. Through the use of AI, farmers can monitor environmental conditions such as humidity, temperature, and soil moisture, which are critical for the health and growth of snails (Adewuyi & Ogunleye, 2019). AI-driven systems can also analyze data related to feeding habits, reproduction cycles, and disease patterns, allowing for timely interventions and efficient resource allocation.

Furthermore, AI can assist in the automation of certain farming processes, reducing the labor-intensive nature of snail farming. For instance, automated feeding systems can be programmed to deliver precise

amounts of food based on the growth stage of the snails, while AI-powered sensors can monitor health indicators to detect early signs of disease or stress (Kelechi et al., 2021). This level of precision not only enhances productivity but also minimizes waste and the likelihood of loss due to disease or poor management practices. AI can also provide predictive insights into market trends, helping farmers make informed decisions on when to harvest and sell their produce for optimal profitability (Ibe & Ozoemena, 2020). Such integration of AI could revolutionize snail farming by making it more efficient, sustainable, and economically viable.

The global trend toward precision agriculture, which emphasizes the use of technology to improve agricultural outputs, further underscores the relevance of AI in snail farming. Precision agriculture seeks to optimize the use of resources such as land, water, and labor, while reducing environmental impacts (Pérez-Ruiz et al., 2022). In the context of snail farming, precision techniques enabled by AI can ensure that farmers maintain the right environmental conditions that promote snail growth, thereby improving yields and reducing the time to market. Moreover, the ability of AI systems to learn and adapt over time means that they can continually improve farming practices based on historical data, leading to long-term benefits for farmers.

The economic implications of enhancing snail farming efficiency through AI are also noteworthy. Snail farming has the potential to generate significant income, particularly for smallholder farmers who often rely on traditional methods with low output (Afolayan et al., 2021). By incorporating AI technologies, farmers can increase their productivity, reduce

losses, and access new markets more effectively. This not only improves the profitability of individual farmers but also contributes to the broader agricultural economy, especially in regions where snail farming is a growing industry. Moreover, as consumer demand for organic and sustainable food products rises globally, AI-enhanced snail farming could help meet this demand by providing a reliable supply of high-quality snail products.

Despite the promising benefits of AI in snail farming, there are challenges that must be addressed. Traditional snail farming faces several challenges, including unpredictable environmental conditions, high disease prevalence, and inefficiencies in farm management (Okoroafor et al., 2020). These challenges highlight the need for innovative solutions to improve farming efficiency. Artificial intelligence (AI) has emerged as a transformative tool, offering modern technologies that automate farming processes, enhance decision-making, and optimize resource utilization (Olaleye et al., 2022). Incorporating AI into snail farming practices can potentially revolutionize the industry by addressing its long-standing limitations.

AI technologies are particularly effective in addressing critical aspects of snail farming. For instance, environmental conditions such as temperature and humidity significantly affect snail growth and reproduction (Adegoke et al., 2021). AI-powered systems equipped with sensors and automation tools enable farmers to monitor and regulate these conditions with precision. Furthermore, AI-driven tools allow for personalized feeding schedules based on data analytics, which optimize growth rates and reduce feed waste (Ibrahim et al., 2023). Predictive

analytics, another aspect of AI, helps forecast environmental challenges and seasonal fluctuations, enabling farmers to proactively mitigate risks and ensure stable productivity (Eze & Nwankwo, 2022). These advancements make AI an indispensable tool for modernizing snail farming, particularly in regions where efficiency and resilience are paramount.

Despite its potential, the adoption of AI in snail farming is hindered by factors such as limited access to technology, lack of technical know-how, and inadequate policy support (Ojo et al., 2021). Addressing these barriers requires a multi-stakeholder approach involving government agencies, private investors, and training institutions. Training programs can empower farmers with the skills needed to implement AI tools, while government incentives can lower the cost of adoption (Okonkwo et al., 2020). Additionally, integrating AI-based disease detection systems can reduce snail mortality and improve farm profitability by identifying health issues at an early stage (Agboola & Taiwo, 2022). By leveraging these strategies, AI can significantly enhance the efficiency and sustainability of snail farming in Nigeria, positioning it as a critical contributor to agricultural innovation.

The cost of implementing AI technologies, particularly for small-scale farmers in developing regions, may be prohibitive (Musa et al., 2022). In addition, there is a need for adequate training and support to ensure that farmers can effectively utilize these technologies. Governments and agricultural organizations must play a critical role in facilitating access to AI tools and providing the necessary infrastructure to support their widespread adoption in the snail farming sector. By

addressing these challenges, the full potential of AI to enhance snail farming efficiency can be realized.

Statement of the Problems

In Ekiti State, agriculture plays a crucial role in sustaining the livelihoods of many households, with snail farming gaining recognition as a viable and profitable venture. Despite its potential, snail farming remains underdeveloped in the region due to several persistent challenges. Farmers in Ekiti State, like those in many rural areas, rely on traditional farming methods that are inefficient and labour-intensive. These outdated practices result in low productivity, inconsistent yields, and a higher susceptibility to environmental and disease-related losses.

One of the primary problems facing snail farmers in Ekiti State is the lack of access to modern technologies and knowledge on best farming practices. Many farmers struggle with maintaining optimal environmental conditions for snail growth, such as regulating humidity, temperature, and soil moisture, which are critical for healthy snail development. Inefficient feeding practices and improper management of snail reproduction cycles exacerbate these issues, leading to reduced output and increased mortality rates within snail populations.

Poor disease monitoring and control measures are common challenges that further hinder productivity. Without proper systems to detect early signs of disease or stress among the snails, farmers experience substantial losses, as outbreaks often spread before interventions can be made. This not only affects the quantity of the snails produced but also undermines their quality, limiting

farmers' ability to access more profitable markets.

Market access and profitability also present significant concerns for snail farmers in Ekiti State. Without reliable data on market trends, prices, and demand, farmers often struggle to make informed decisions about when to harvest and sell their snails. This can lead to situations where snails are sold at lower prices, reducing overall profitability and discouraging further investment in the farming venture.

The inefficiencies in snail farming in Ekiti State are largely due to the lack of technological integration. While agriculture in other regions has benefited from innovations such as Artificial Intelligence (AI) and automation, farmers in Ekiti have limited exposure to these advancements. The absence of AI-driven tools, which could assist in monitoring environmental conditions, optimizing feeding schedules, and predicting market trends, keeps snail farming productivity in the region below its potential. The underutilization of these technologies, combined with the labor-intensive nature of traditional farming methods, creates significant barriers to the scalability and sustainability of snail farming in the region.

In light of these challenges, there is a pressing need to explore ways to enhance the efficiency of snail farming in Ekiti State. Integrating AI into snail farming practices could provide solutions to many of the issues faced by farmers. By automating routine tasks, monitoring environmental factors more precisely, and offering data-driven insights into optimal farming practices, AI has the potential to revolutionize snail farming and unlock the industry's economic potential in the region. Without such interventions, farmers in Ekiti State may continue to struggle with low

yields, limited market access, and unfulfilled economic opportunities.

Purpose of the Study

The main purpose of this study is to examine the efficiency of snail farming in Ekiti State through the integration of Artificial Intelligence (AI) technologies. Specifically, the study

- i. assess the current challenges faced by snail farmers in Ekiti State.
- ii. examine the potential applications of AI technologies in monitoring environmental conditions for snail farming.
- iii. investigate how AI can optimize feeding schedules and reproductive cycles in snail farming.

Research Questions

The following questions will be answered in the course of this study:

- i. What are the major challenges currently affecting the efficiency of snail farming in Ekiti State?
- ii. How can AI technologies be applied to monitor and regulate environmental conditions in snail farming?
- iii. In what ways can AI improve the feeding and reproductive management of snails for higher productivity?

Methodology

A descriptive survey design was employed. It allows the collection of data from a large number of participants and provides insights into their experiences and perceptions regarding the use of AI in farming practices. The population of the study consisted of snail farmers across Ekiti State. The sample was determined using a purposive sampling technique, selecting farmers who have experience in snail farming and those who are open to the idea of integrating new technologies into their farming practices. A sample of 150 snail farmers were selected for the study. Data were collected using a well-structured close ended questionnaire and 4-Likert scale questions. The data were collected using descriptive statistics of mean scores and standard deviation to answer the research questions.

Results

Research Question 1: What are the major challenges currently affecting the efficiency of snail farming in Ekiti State?

In answering the question, mean scores on the major challenges currently affecting the efficiency of snail farming in Ekiti State were computed and compared. The result is presented in the table below.

Table 1: Major Challenges Currently Affecting the Efficiency of Snail Farming in Ekiti State

S/ N	Items	$\bar{x}$	SD	Remarks	Ranking
1	Unfavorable weather conditions negatively impact my snail farming efficiency	3.40	.82	Agree	2 nd
2	Managing the appropriate humidity levels for snails is difficult and affects production	2.93	.76	Agree	5 th
3	The cost of snail feed is too high, affecting farm profitability.	3.71	.89	Agree	1 st
4	Many famers lack the proper tools and resources to detect and prevent diseases in snails early	3.39	.83	Agree	3 rd

5	There is inadequate veterinary support or expert advice available for snail farmers in Ekiti State	2.94	.92	Agree	4 th
GRAND MEAN		3.27	.84		

n=147

Data collected in table 1 indicated that the mean scores ranged from $\bar{x}$ 2.94-3.71. The parameter mean score was 2.50, showing that the respondents agreed on five (5) major challenges currently affecting the efficiency of snail farming in Ekiti State. Item 3, the cost of snail feed is too high, affecting farm profitability has the highest $\bar{x}$ score of 3.71, SD .89 and ranked first while item 2, Managing the appropriate humidity levels for snails is difficult and affects

production has the lowest $\bar{x}$ score of 2.93, SD 0.76 and ranked last.

Research Question 2: How can AI technologies be applied to monitor and regulate environmental conditions in snail farming?

In answering the question, mean scores on how AI technologies can be applied to monitor and regulate environmental conditions in snail farming were computed and compared. The result is presented in the table below.

Table 2: Application of AI technologies to monitor and regulate environmental conditions in snail farming

S/N	Items	$\bar{x}$	SD	Remarks
1	Automated AI solutions can adjust environmental settings automatically based on data collected.	2.27	.36	Disagree
2	AI technologies can accurately monitor temperature levels in snail farms to ensure optimal conditions.	2.93	1.05	Agree
3	AI-driven sensors can effectively measure and regulate humidity levels in snail habitats.	2.71	1.08	Agree
4	AI technologies can forecast seasonal variations and recommend adjustments to maintain optimal conditions.	2.87	1.06	Agree
5	Predictive AI models can help in forecasting potential issues with environmental control systems.	2.76	.94	Agree
GRAND MEAN		2.71	1.08	

n=147

Data collected in Table 2 show that the mean score range from $\bar{x}$ 2.27-2.93. The parameter mean score was 2.50, showing that the respondents agreed to four (4) items and disagreed with one (1) item on how AI technologies can be applied to monitor and regulate environmental conditions in snail farming. Item 2, AI technologies can accurately monitor temperature levels in snail farms to ensure optimal conditions has the highest $\bar{x}$ score of 2.93, SD 1.05 while

item 1, Automated AI solutions can adjust environmental settings automatically based on data collected has the lowest $\bar{x}$ score of 2.27, SD .36.

Research Question 3: In what ways can AI improve the feeding and reproductive management of snails for higher productivity?

In answering the question, mean scores on ways AI can improve the feeding and reproductive management of snails for higher

productivity were computed and compared. The result is presented in the table below.

Table 3: Ways AI can improve the Feeding and Reproductive Management of Snails for Higher Productivity

<i>S/N</i>	<i>Items</i>	$\bar{x}$	<i>SD</i>	<i>Remarks</i>
1	AI can optimize feeding schedules by analyzing the growth and health data of snails to ensure they receive adequate nutrition	3.03	0.57	Agree
2	AI-driven systems can recommend the most nutritious feed formulations based on the specific needs of different snail species	2.98	0.61	Agree
3	AI can provide insights into the ideal feeding frequency and quantities for optimal snail growth	3.39	0.52	Agree
4	AI can assist in identifying the best environmental conditions for breeding snails, thus enhancing reproductive efficiency	3.67	0.48	Agree
5	AI-driven tools can monitor and analyze the conditions affecting snail reproduction, such as humidity and temperature, to improve hatch rates	2.76	.94	Agree
GRAND MEAN		3.17	.62	

n=147

Data collected in table 3 indicated that the mean scores range from $\bar{x}$ 2.76 – 3.03. The parameter mean scores was 2.50, showing that the respondents agreed on five (5) items on the ways AI can improve the feeding and reproductive management of snails for higher productivity. Item four (4), AI can assist in identifying the best environmental conditions for breeding snails, thus enhancing reproductive efficiency has the highest $\bar{x}$ score of 3.67, SD .48 while item five (5), AI-driven tools can monitor and analyze the conditions affecting snail reproduction, such as humidity and temperature, to improve hatch rates has the lowest $\bar{x}$ score of 2.76, SD .94.

Discussion of Findings

It was established that the analysis result the major challenges currently affecting the efficiency of

snail farming in Ekiti State are unfavourable weather conditions, difficulty in managing the appropriate humidity levels for snails, high cost of feeding, lack the proper tools and resources to detect and prevent diseases in snails early and inadequate veterinary support or expert advice available for snail farmers. This finding supports the discovery of Ajayi et al. (2019) that erratic rainfall and prolonged dry spells pose a major challenge to maintaining the required humidity levels, crucial for snail survival and growth. Similarly, a study by Oke and Omole (2020) supports this finding and established that snail farmers struggle to sustain humidity without advanced farming technologies, which leads to poor snail performance, especially during dry seasons.

It was discovered that AI technologies accurately monitor temperature levels in snail farms to ensure optimal conditions, effectively measure and regulate humidity levels in snail habitats, forecast seasonal variations and recommend adjustments to maintain optimal conditions and helps in forecasting potential issues with environmental control systems. AI (Artificial Intelligence) technologies are increasingly being applied in various agricultural sectors, including snail farming, to enhance efficiency and productivity. In the context of snail farming, AI offers several advantages in monitoring and controlling environmental factors crucial for the survival and growth of snails. This finding aligns with the conclusion of Ogunleye et al. (2022) that the use of AI temperature sensors in snail farms reduced mortality rates by 20% in farms that implemented AI technology compared to traditional farms in Nigeria. Also, empirical research by Adeyemi et al. (2021) found that AI-regulated farms in Ekiti State experienced higher growth rates and increased survival rates in snails due to the consistent maintenance of optimal humidity levels.

It was established that AI-driven systems can optimize feeding schedules by analyzing the growth and health data of snails to ensure they receive adequate nutrition, recommend the most nutritious feed formulations based on the specific needs of different snail species, provide insights into the ideal feeding frequency and quantities for optimal snail growth, assist in identifying the best environmental conditions for breeding snails, thus enhancing reproductive efficiency and monitor and analyze the conditions affecting snail reproduction, such as humidity and temperature, to improve hatch

rates. This discovery agrees with the findings of Olatunji et al. (2021) that AI-driven feeding schedules in snail farming reduced overfeeding by 15% and resulted in a 12% increase in growth rates. Also, Adelaja et al. (2020) conducted a study on feed optimization using AI and found that AI-assisted feed formulation improved the nutrient absorption rates in snails by 18%, leading to faster growth and better shell development.

Conclusion and Recommendations

Improving the efficiency of snail farming through artificial intelligence (AI) offers valuable prospects for boosting productivity, sustainability, and profitability. AI-powered systems enhance critical areas of snail farming, such as optimizing feeding schedules, designing nutrient-rich feed, and ensuring optimal environmental conditions for breeding and growth. By constantly monitoring and adjusting factors like temperature, humidity, and feed levels, AI reduces waste and mitigates risks, leading to healthier snails and improved reproductive outcomes. Research shows that AI technologies provide innovative solutions, making snail farming more efficient and well-suited to the evolving needs of modern agriculture. Hence, the following recommendations are made:

- i. The government should provide training for snail farmers on the use of AI-driven tools and technologies. The government can organize workshops, seminars, and practical sessions to educate snail farmers on how to use AI applications tailored for farming. Training programs can include hands-on demonstrations of AI tools, tutorials on data collection and analysis, and

- guidance on integrating these technologies into existing farming practices.
- ii. Snail farmers should implement AI-powered systems for monitoring and regulating environmental factors like humidity and temperature. Farmers can install AI-enabled sensors and automation systems to track environmental conditions such as temperature, humidity, and light levels in snail pens. These systems can automatically adjust conditions to optimal levels, ensuring a conducive environment for snail growth.
 - iii. Snail farmers should utilize AI tools to analyze snail health and growth data for personalized feeding schedules and nutrient-rich feed formulations. Farmers can use AI-driven data analytics tools to track the growth patterns and health status of their snails. These tools can provide insights into individual snail needs and recommend tailored feeding schedules and formulations of feed to maximize growth and reproduction.
 - iv. The government and other stakeholders should integrate predictive AI technologies to forecast seasonal changes and environmental challenges for snail farmers. By collaborating with technology providers, the government and stakeholders can deploy AI systems capable of analyzing weather patterns and environmental data to predict conditions that might affect snail farming. This information can be disseminated to farmers via mobile apps, SMS alerts, or training sessions.
 - v. Snail farmers should invest in AI-based disease detection systems

to identify early signs of illness and reduce mortality rates. Farmers can deploy AI systems equipped with image recognition and data analysis capabilities to monitor snails for symptoms of diseases. These systems can alert farmers to potential health issues early, allowing for prompt interventions such as isolating affected snails or applying treatments.

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INFLUENCE OF INFORMATION AND COMMUNICATION TECHNOLOGY AND TEACHERS' COMPETENCIES ON SENIOR SECONDARY SCHOOLS STUDENTS' LEARNING OUTCOMES IN BASIC SCIENCE AND TECHNOLOGY IN SOUTHWEST, NIGERIA.

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Abstract

The study investigated the influence of Information and Communication Technology and teachers' competences on learning outcomes of senior secondary school students in Basic Science and Technology in Southwest, Nigeria. The study adopted the descriptive survey research design. The population comprised 166,716 Junior Secondary School Three (JSS3) students and 1,124 teachers of Basic Science and technology in southwest, Nigeria. The sample consisted of 720 junior secondary school students selected from eighteen public secondary schools in Southwest, Nigeria using multistage sampling procedure and 72 teachers of Basic Science and Technology from eighteen public secondary schools in Southwest, Nigeria using purposive sampling. The instruments used to collect data for the study are 'Teachers' Competency and Assessment Questionnaire (TECAQ)' and 'Students' Attitude and Interest in the Learning of Basic Science and Technology (SAILBAST)'. The instruments were subjected to scrutiny by experts and researcher's supervisor to ascertain its face and content validity. Reliability coefficients of 0.68 and 0.74 were obtained respectively for TECAQ and SAILBAST using Cronbach Alpha's reliability analysis. The research questions raised were analyzed using frequency counts, percentage and mean. The hypotheses were tested using linear regression analysis at 0.05 level of significance. The results of the study showed that ICT utilization has a positive influence on students' learning outcomes and teachers' pedagogical knowledge competency has a positive influence on students' learning outcomes. It was concluded that ICT utilization and Teachers' pedagogical knowledge competency have a positive influence on students' learning outcomes in Basic Science and Technology. Based on the findings of the study, it was recommended that teachers should utilize ICT in the teaching of students in Basic Science and technology. Also, teachers of Basic Science and Technology should be exposed to, encouraged to apply and adopt diverse pedagogical approaches which can stimulate learning while teaching.

Keywords: ICT utilization, teachers' competencies, pedagogical knowledge competency, learning outcomes.

Introduction

ICT is a major tool being currently used for knowledge advancement in many schools globally. The concept, Information and Communication Technology (ICT) is quite wide and variously explained by different authors. Ejechi (2013) explained that ICT refers to the use of computer technology and its associated software, audio, visual and telecommunication equipment (including mobile phones) to send, receive, store and even manipulate information for objectives. These objectives include, but not limited to business, government services, organizations, school and research. It also includes the worldwide network of computers otherwise called internet. This technology has turned the world into what is now called global village. The use of ICT for learning is increasingly becoming the order of the day.

The ICT is a science of information which uses the computer and multi-electronic resources to collect, process, store, retrieve and transmit or disseminate information to various parts of the world. ICT has permeated virtually all aspects of human endeavor. It has crept into the educational system and has had obvious impact in the curriculum. Adeyemo (2010) described ICT as consisting of computer hardware, software, networks and media for the collection, storage, processing, transmission and presentation of information. It includes computer sets, computer and application software (i.e. Spreadsheet, word processing, excel), disc and storage media (i.e. memory cards, flash drives, CD-Rom, audio and video cassettes, films, pictures, e-books, e-magazine,) telecommunication gadget and services such as internet, internet browsing, electronic mail services,

cyber café, scanner, browsers, internet services provider which are used in the secondary schools for processing, storage, presentation, communication and exchange of data and information in the teaching and learning processes.

Akudolu, Aremu and Lanre (2011) posited that ICT comprise the tools used basically for collaboration, searching and exploring information, processing and storing of data. ICTs therefore imply the unification and application of technological devices/tools and resources used to process, store, receive and disseminate information electronically anywhere to aid learning. ICT tools and resources aid students' learning by presenting materials in electronic form through on-line digital libraries, video projection screen, CR-Roms, internet facilities and mobile technologies such as i-pod, smart phones, MP player and book readers. ICT is considered an indispensable tool for globalization.

There are many contents in ICT. Ibezim and Igwe (2016) noted that the term ICT could include computer hardware and software, digital cameras, video cameras, the internet, telecommunication tools, programmable toys and many other related devices and resources. The computer which is an electronic machine for receiving, manipulating, storing and retrieving information, can aid teaching and learning in several ways. Information that is saved in any storage device of the computer such as flash drive, floppy diskette or in the Central Processing Unit (CPU) can be retrieved at a tremendous speed in the computer. It is a matter of calling up the information through the input hardware such as the keyboard and mouse, in the file or web address it was saved. Other ICT devices relevant in teaching include television, radio and cassette player. Recent and updated global information from several people

can easily be accessed through the internet using the computer.

From the fore-going, it is clear that ICT is concerned with information sourcing, sharing, storing, manipulation, sending using certain electrical hardware and software; it aims at increasing human knowledge. Prior to the era of Information and Communication Technology, teachers and instructors in schools relied primarily and predominantly on educational materials in form of textbooks, journals and publications that are available on the shelves of libraries and bookshops. Not only this, there is a dearth of current, up-to-date academic materials. In addition, students relied only on teachers and a few available textbooks. Learning only appeared to take place in the school and in the presence of teachers. However, with the discovery and introduction of ICT, these trends have changed.

Furthermore, ICT have turned the world into a global village. Through various ICT channels and outlets such as internet, computers (laptops and desktop), projectors, digital cameras, radio sets, television sets, virtual libraries, mobile telephones as well as various packages/software on audio and video compact disc, it seems teacher can teach their students better for goal attainment. Also students are likely to carry out assignments, study and learn independently at home or elsewhere. Online teaching and learning seems possible as learners are likely to receive instructions and learn via various software in CDs, DVDs and computer.

Teachers' competencies in the areas of ICT utilization and pedagogical knowledge competency are likely to influence students' learning outcomes in Basic Science and Technology. Teachers who possess ICT utilization skills will likely possess

the capability and capacity to use it for instructional purposes (Arkoful & Abaidoo, 2014). Likewise, teachers' pedagogical knowledge competency plays in a central role in students' learning outcomes. Teachers who are pedagogically competent have the ability to adopt, adapt and utilize various methods of teaching for effective teaching (Ikwuka et al, 2021).

Students' interest in Basic Science and Technology may be influenced by utilization of ICT. Onwunara (2020) observed that ICT utilization enhances students' interest in learning Basic Science and Technology. Adegbola (2019), Afuwape and Adeyi (2019) asserted that teachers' pedagogical knowledge competency positively influences students' attitude to the learning of Basic Science and Technology. Obodo, Animercy and Okolo (2021), Amalu and Ntamu (2021) as well as Iguisi and Edomsowan (2022) all submitted that teachers' pedagogical knowledge competency has a positive influence on students' interest in Basic Science and Technology.

Statement of the Problem

It has been observed that there is a declining interest, enrolment and apathy to science subjects in Senior Secondary Schools. From observation, the current number of students studying sciences in SSS classes in public secondary schools in Southwest, Nigeria is considered too low. This study seeks to investigate if certain teacher competencies could be responsible for this.

Purpose of the Study

The study investigated the influence of ICT and teachers' competencies on students' learning outcomes in Basic Science and Technology in Southwest, Nigeria. It also examined the influence of ICT utilization on students' learning

outcomes in Basic Science and Technology. The research assessed the influence of teachers' pedagogical knowledge competency on students' learning outcomes in Basic Science and Technology.

Research Questions

1. What is the influence of ICT utilization on students' learning outcomes (interest and attitude) in Basic Science and Technology?
2. What is the influence of teachers' pedagogical knowledge competency on students' learning outcomes (interest and attitude) in Basic Science and Technology?

Research Hypotheses

The following null hypotheses were used for this study:

1. There is no significant influence of ICT utilization on students' learning outcomes (interest) in Basic Science and Technology.
2. There is no significant influence of utilization of ICT on students' learning outcomes (attitude) to Basic Science and Technology.
3. There is no significant influence of teachers' pedagogical knowledge competency on students' learning outcomes (interest) in Basic Science and Technology.
4. There is no significant influence of teachers' pedagogical knowledge competency on students' learning outcomes (attitude) to Basic Science and Technology.

Methodology

This study adopted the descriptive survey research design. The population for the study consisted of 116716 Junior Secondary School III (JSS 3) students and 1124 teachers of Basic Science and Technology in public secondary schools in Southwest,

Nigeria. The sample for the study consisted of 720 JSS III students selected from eighteen public secondary schools using the multistage sampling procedure. One Local Government Area (LGA) making a total of nine LGAs that were used for this study. Two secondary schools were randomly selected from each of the selected LGAs making a total of eighteen public secondary schools. Two research instruments were used for data collection. They are 'Teacher' Assessment and Competency Questionnaire (TECAQ)' and 'Students' Attitude and Interest to the Study of Basic Science and Technology (SAILBAST). After the collection of data, they were analyzed using frequency counts, means, percentage and linear regression.

Validity of the instruments

The face, content and construct validity of the instruments were carried out by experts in Educational Technology as well as Test, Measurement and Evaluation in Ekiti State University, Ado Ekiti.

Reliability of the Instruments

The reliability of TECAQ and SAILBAST was done using Cronbach Alpha's reliability analysis. Reliability coefficients of 0.68 and 0.74 were respectively obtained for the two instruments. These values were considered adequate for the instruments to be considered reliable for data collection.

Results

Question 1: What is the influence of ICT utilization on students' learning outcomes in Basic Science and Technology?

In analyzing the question, teachers' responses relating to the influence of ICT utilization on students' learning outcomes in Basic

Science and Technology were obtained using “Teachers’ Competency and Assessment Questionnaire (TECAQ)” and subjected to statistical analysis

involving frequency counts, percentages and mean. The result is presented in Table 1.

Table 1: Influence of ICT utilization on students’ learning outcomes in Basic Science and Technology

S/N	ITEMS	SA	A	D	SD	MEAN
1.	The use of ICT for instructional purposes is a difficult endeavor	9 (12.5)	16 (22.2)	34 (47.2)	13 (18.1)	2.29
2.	The use of ICT in teaching Basic Science and Technology is relevant	31 (43.1)	34 (47.2)	5 (6.9)	2 (2.8)	3.31
3.	Teachers do not use ICT for instructional purposes because they are not computer literate	9 (12.5)	34 (47.2)	22 (30.6)	7 (9.7)	2.62
4.	The use of ICT in teaching Basic Science and Technology produces the best results.	27 (37.5)	34 (47.2)	9 (12.5)	2 (2.8)	3.19
Criterion mean = 2.50						

Table 1 presents the influence of ICT utilization on students’ learning outcomes in Basic Science and Technology. The result shows that, using a criterion mean score of 2.50 for the affirmative of the statements, all the items had mean scores above the cut-off point. This implies that the influence of ICT utilization on students’ learning outcomes in Basic Science and Technology is positive. There will be no significant influence of teachers’ pedagogical knowledge competency on students’ interest in Basic Science and Technology.

Questions 2: What is the influence of teachers’ pedagogical knowledge

competency on students’ learning outcomes in Basic Science and Technology?

In analyzing the question, teachers’ responses relating to the influence of teachers’ pedagogical knowledge competency on students’ learning outcomes in Basic Science and Technology were obtained using “Teachers’ Competency and Assessment Questionnaire (TECAQ)” and subjected to statistical analysis involving frequency counts, percentages and mean. The result is presented in Table 2.

Table 2: Influence of teachers' pedagogical knowledge competency on students' learning outcomes in Basic Science and Technology.

S/N	ITEMS	SA	A	D	SD	MEAN
1.	Instructional methodology used in teaching affects students' learning outcomes in Basic Science and Technology	32 (44.4)	21 (29.2)	10 (13.9)	9 (12.5)	3.06
2.	Instructional Methodology is the most important factor that dictates students' learning outcomes in Basic Science and Technology	33 (45.8)	33 (45.8)	4 (5.6)	2 (2.8)	3.35
3.	The instructional method used in teaching depends on the topic	34 (47.2)	35 (48.6)	3 (4.2)		3.43
4.	Teachers of Basic Science and Technology are used to various methods of teaching	27 (37.5)	38 (52.8)	6 (8.3)	1 (1.4)	3.26
5.	All instructional methods are equally effective in teaching Basic Science and Technology	24 (33.3)	38 (52.8)	8 (11.1)	2 (2.8)	3.17
6.	Teachers of Basic Science and Technology subjects usually teach with instructional materials	23 (31.9)	40 (55.6)	9 (12.5)		3.19
7.	Behavioural objectives dictates the instructional method to be used in teaching Basic Science and Technology.	27 (37.5)	37 (51.4)	7 (9.7)	1 (1.4)	3.25
Criterion mean = 2.50						

Table 2 presents the influence of teachers' pedagogical competency on students' learning outcomes in Basic Science and Technology. The result shows that, using a criterion mean score of 2.50 for the affirmative of the statements, all the items had mean scores above the cut-off point. This implies that the influence of teachers' pedagogical competency on students' learning outcomes in Basic Science and Technology is positive.

Testing of Hypotheses

Table 3: Regression of ICT utilization and students' interest in Basic Science and Technology

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta (β)		
(Constant)	3.107	5.200		.597	.559
Teachers' utilization of ICT	.971	.360	.560	2.700	.016

Multiple R = 0.560, Multiple R² = 0.313, Adjusted R² = 0.270

*p<0.05

Hypothesis 1: There will be no significant influence of ICT utilization on students' interest in Basic Science and Technology.

In order to test the hypothesis, scores relating to ICT utilization and students' interest in Basic Science and Technology were obtained and subjected to statistical analysis involving Regression statistics at 0.05 level of significance. The result is presented in Table 3

Table 3 presents the predictive influence of ICT utilization on students' interest in Basic Science and Technology. A simple linear regression analysis was carried out to assess the influence of ICT utilization on students' interest in Basic Science and Technology. The result shows that there is significant influence of ICT utilization on students' interest in Basic Science and Technology ($F_{1,16} = 7.292$, $p < .05$). The null hypothesis is hereby rejected. The result shows that the composite correlation coefficient of 0.56-0 indicating that there is a positive moderate relationship between ICT utilization and students' interest in Basic Science and Technology ($R = 0.560$, $p < 0.05$). The

coefficient of multiple determination (0.313) shows that 31.3 percent of the observed variance in students' interest in Basic Science and Technology can be attributed largely to ICT utilization

Hypothesis 2: There will be no significant influence of utilization of ICT on students' attitude to Basic Science and Technology.

In order to test the hypothesis, scores relating to ICT utilization and students' attitude to Basic Science and Technology were obtained and subjected to statistical analysis involving Regression statistics at 0.05 level of significance. The result is presented in Table 4.

Table 4: Regression of ICT utilization and students' attitude to Basic Science and Technology.

Model	Unstandardized Coefficients		Standardized Coefficients Beta (β)	T	Sig.
	B	Std. Error			
(Constant)	24.539	2.327		10.547	.000
Teachers' utilization of ICT	.195	.080	.521	2.439	.027
Multiple R = 0.521, Multiple R ² = 0.271, Adjusted R ² = 0.225, $F_{1,16} = 5.949$					

* $p < 0.05$

Table 4 presents the predictive influence of ICT utilization on students' attitude to Basic Science and Technology. A simple linear regression analysis was carried out to assess the influence of ICT utilization on students' attitude to Basic Science and Technology. The result shows that there is significant influence of ICT utilization on students' attitude to Basic Science and Technology ($F_{1,16} = 5.949$, $p < .01$). The null hypothesis is hereby rejected. The result shows that the composite correlation coefficient of 0.521 indicating that there is a positive moderate relationship between ICT utilization and students' attitude to Basic Science and Technology ($R =$

0.521, $p < 0.05$). The coefficient of multiple determination (0.271) shows that 27.1 percent of the observed variance in students' attitude to Basic Science and Technology can be attributed largely to ICT utilization while 72.9 percent unexplained variance is due to other variables not investigated in the study.

Hypothesis 3: There will be no significant influence of teachers' pedagogical knowledge competency on students' interest in Basic Science and Technology. In order to test the hypothesis, scores relating to teachers' pedagogical competency and students' interest in Basic Science and

Technology. In order to test the hypothesis, scores relating to teachers' pedagogical competency and students' interest in Basic Science and Technology were obtained and

subjected to statistical analysis involving Regression statistics at 0.05 level of significance. The result is presented in Table 5.

Table 5: Regression of teachers' pedagogical competency and students' interest in Basic Science and Technology

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta (β)		
(Constant)	8.850	3.139		2.819	.012
Teachers' utilization of ICT	.471	.178	.552	2.651	.017
Multiple R = 0.552, Multiple R ² = 0.305, Adjusted R ² = 0.262, F _{1,16} = 7.028					

* $p < 0.05$

Table 6 presents the predictive influence of teachers' pedagogical competency on students' interest in Basic Science and Technology. A simple linear regression analysis was carried out to assess the influence of teachers' pedagogical competency on students' interest in Basic Science and Technology. The result shows that there is significant influence of teachers' pedagogical knowledge competency on students' attitude to Basic Science and Technology ($F_{1,16} = 5.118$, $p < 0.05$). The null hypothesis is hereby rejected. The result shows that the composite correlation coefficient of 0.492 indicating that there is a positive moderate relationship between teachers' pedagogical competency and students' attitude to Basic Science and Technology ($R = 0.492$, $p < 0.05$) the coefficient of multiple determination (0.242) shows that 24.2 percent of the observed variance in students' attitude to Basic Science and Technology is explained by teachers' pedagogical competency while the remaining 75.8 percent unexplained variation is due to other variables not investigated in the study.

Findings and Discussion

This study determined the influence of ICT and teachers' competencies on students' learning

outcomes in Basic Science and Technology in Southwest, Nigeria. The finding of this study showed that ICT utilization has a positive influence on students' interest in Basic Science and Technology. This is in agreement with the findings of Onwunara (2020) that ICT utilization enhanced students' interest, reinforced their understanding of the subject and facilitate the acquisition of digital skills. The findings of this study revealed that teachers' pedagogical knowledge competency has a positive influence on students' attitude in Basic Science and technology. This is in consonance with the findings of Adegbola (2019) that teachers' pedagogical knowledge competency has a significant positive influence on students' attitude towards Basic Science and Technology. This is particularly applicable to teachers' use of relevant instructional materials. Likewise, Afuwape and Adeyi (2019) corroborated this assertion that teachers' methodology and participation in training programmes on pedagogy have significant influence on the attitude of students to Basic Science and Technology.

Findings of this study revealed that teachers' pedagogical knowledge competency has a positive influence on students' interest in Basic Science and

technology. This concurs with the findings of Obodo, Animercy and Okolo (2021); Iguisi & Edomsowan (2022) that teachers' pedagogy knowledge competency has a positive influence on students' interest in Basic Science and Technology. Also, Amalu and Ntamu (2021) found that teachers' pedagogical knowledge competency led to an increase in the interest of students in Basic Science and Technology.

Conclusion

Based on the findings of the study, it was concluded that ICT utilization and teachers' competencies have a positive influence on students' learning outcomes (interest and attitude) in Basic Science and Technology.

Recommendations

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

1. Teachers of Basic Science and Technology should be motivated to use ICT for teaching and learning.
2. Regular training programmes should be organized for teachers on the relevance of ICT as a pedagogical tool.
3. Teachers' should be exposed to various teaching pedagogy through regular training programmes.
4. Teachers should be given orientation on diverse pedagogical approaches in teaching and motivated to apply them in classroom instruction.

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AN ASSESSMENT OF THE USE OF INTERNET RESOURCES FOR RESEARCH BY POSTGRADUATE TECHNICAL EDUCATION STUDENTS IN EKITI STATE UNIVERSITY, ADO-EKITI

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Abstract

This study assessed the use of internet resources for research among postgraduate technical education students in EKSU. Specifically, the study highlights the types and extent of internet resource use in research among the students, identified the factors influencing the use of internet resources and challenges faced by postgraduate students in using internet resources. The descriptive research design was employed and a total of 50 technical education students were selected for an in-depth study in Ekiti State University, Ado-Ekiti. The result revealed that the major internet resources used by the students were search engines like Google, Bing, Yahoo, Google Scholar, open access journals were also commonly used which highlights a limited knowledge on the availability and usage of internet resources for research. It was discovered that gender and age interactively influence the use of internet resources among post-graduate students ($(F(2, 48)=.3.198, p<.05)$). Some of the major challenges to the use of internet resources in research among the students are technological barriers, information overload, and concerns about academic integrity. Additional hurdles include a lack of digital skills, insufficient guidance, and issues like outdated information and digital fatigue. It is therefore recommended that institutions should prioritize and expand digital literacy programs for postgraduate students.

Keywords: Internet resources, research, postgraduate students, technical education

Introduction

The internet has become an indispensable tool for academic research providing access to an immense repository of information and resources that support knowledge acquisition, critical thinking, and innovation. Postgraduate students, particularly in technical education, rely on the internet for accessing scholarly materials, conducting literature

reviews, and staying updated on emerging trends in their fields. Despite its benefits, the effectiveness and patterns of internet use for research among postgraduate students remain critical areas of investigation. This study seeks to assess how postgraduate students in technical education at Ekiti State University utilize internet resources on their academic pursuits. Understanding these aspects will

provide insights into improving digital literacy and resource accessibility for academic research. In today's digital age, the internet offers an unparalleled wealth of information, making it an invaluable tool for students at all levels of education.

The internet has become a fundamental part of students' life by providing them with convenient access to an extensive array of academic journals, databases, e-books, and scholarly articles (Rai, 2014; Deniz & Geyik, 2015). These resources cover a wide range of subjects and are often more up-to-date than traditional printed materials. Additionally, online resources are accessible 24/7, allowing students to conduct research at their own pace and on their own schedules. The internet also fosters collaboration and connectivity among students and researchers worldwide. This is evident in online forums, discussion boards, and social media platforms which enable students to share ideas, seek input from peers, and engage in academic discourse, mitigating geographical barriers that once limits collaboration (Sahin et al., 2010).

Although there has been a long history of internet in tertiary education facilitating research in education (Aminu, 2014), it did not become very important in research until the 1980s with the development of World Wide Web (www) by Tim Berners-Lee. ARPANET was only used to exchange emails and share data (Norman, 2020). The 1990s witnessed the rise of search engines like Yahoo! And Google making it easier for researcher to find relevant resources quickly.

Subsequently, social media in Web 2.0 enhances collaboration. The incorporation of the internet within the university environment has been shown to enhance

information access and communication by offering electronic publications (Aminu, 2014). This integration of the internet for educational and academic objectives has experienced significant growth, with numerous higher education institutions now integrating these technologies into their existing instructional models.

Bonk (2002) noted that it has become commonplace to encounter websites that host course materials and supplementary resources that complement traditional classroom teaching.

Furthermore, these resources cater to diverse learning styles and preferences, accommodating a broader spectrum of students. However, while the internet offers vast opportunities, students must also develop critical thinking and information literacy skills to discern credible sources from unreliable ones (Markhama & Buchanon, 2012). Despite information provided on the relevance and evolution of the internet in research, having the right skills still becomes pertinent to conducting an impactful research. In other words to harness the power of internet.

Statement of the Problem

The internet has revolutionized academic research by providing access to a vast array of resources including scholarly articles, e-books, databases, and other digital materials. For postgraduate students, particularly those in technical education, the internet serves as a critical tool for conducting research, exploring emerging trends and acquiring in-depth knowledge in their field of study. However, despite the widespread availability of internet resources, several challenges hinder effective utilization.

Postgraduate students in technical education at Ekiti State University may face issues such as limited access to high quality, subscription-based academic resources, inadequate digital literacy skills, unreliable internet connectivity, and difficulty in evaluating the credibility of online materials. These challenges could lead to suboptimal use of internet resources, ultimately affecting the quality of their research and academic performance. Furthermore, there is a lack of empirical data on the extent to which these students utilize internet resources, the specific types of resources they access, and how these resources impact their research outputs. Addressing these gaps is essential to understanding their research behavior and providing targeted interventions to enhance their use of internet resources. This study, therefore, seeks to assess the utilization of internet resources for research by postgraduate technical education students at Ekiti State University identify the challenges they encounter, and propose strategies to improve their access to and use of these resources.

Purpose of the Study

The study is to assess the use of internet resources among postgraduate VTE PG students in Ekiti State University, Ado-Ekiti. The specific objectives are to:

- i. assess the types and extent of internet resource use in research among postgraduate VTE students;
- ii. identify the factors influencing the use of internet resources for research among postgraduate VTE students;
- iii. challenges faced by postgraduate VTE students in

using internet resources for research in Ekiti State University, Ado-Ekiti.

Research Question

1. To what extent do postgraduate technical students in Ekiti State University use internet resources for research purposes?
2. What types of internet resources are most frequently accessed by these students for their research?
3. What challenge do postgraduate technical education students encounter when using internet resources for research?

Hypotheses

1. There is a significant relationship between the level of digital literacy with Types and Extent of Internet Resources Use by Postgraduate VTE Students in EKSU
2. The Factors influencing the Utilization of Internet Resources by Postgraduate VTE Students in EKSU
3. The effect of gender, age and marital status on use of internet Resources by VTE Postgraduate Students in EKSU
4. The effect of challenges faced by postgraduate VTE students in using Internet Resources for Research

Empirical Review

Quite a study has been carried out on utilization of internet resources for research by students. Ime et al., (2021) assessed the availability and utilization of internet resources for final year students research project in Nigeria tertiary institutions. It was discovered that the internet plays a major role in helping undergraduate researchers' access large number of materials from different parts of the globe. It was also found that factors

such as internet speed, digital literacy skills and guidance on the use of internet resources were major factors influencing the use of internet resources among students. This was also true with the study of this was also true with the study of Oberiri (2020) on the utilization of internet resources for learning and research among students of Taraba University, Nigeria using the survey method among 30 students. Most of them stated that Google search engine and Google scholar was the major ones used for their research. The students affirmed that it helps them perform their research as at when due. They are also familiar with scientific journals like Elsevier, Pubmed, and Springer which is very helpful to their research. However, it was stated that the major problems experienced is the lack of digital readiness, inefficient internet infrastructure among others. Furthermore, Muhammad (2018) assess the use of internet for research in selected universities in North-Central Nigeria using the survey research method.

Findings showed that the use of the internet for research was common among students and most especially the use of search engines like Google and Bing for research purpose.. In examining the usage of internet resources and learning among students in Nigeria, Apuke and Iyendo (2022) carried out a mixed method survey among 250 undergraduate students in three selected universities within North-Eastern Nigeria. To gain an in-depth understanding of the perception of the students, Focus Group was conducted with 18 students. The studies revealed that most of them make use of their smartphones to access the internet and were more conversant with the use of Google, Yahoo as their search

engines and also open e-journals. However, they face issues such as poor internet infrastructure within the school community, digital literacy, and lack of guidance and attitude of staff towards the use of internet. The study of Abubakar and Adetimiri (2016) considered postgraduate students' use of E-resources in Nigerian University Libraries using a survey research design and multistage sampling technique to select 2,726 postgraduate students in 16 federal universities in Nigeria. It was revealed that the uses of internet resources among the postgraduate students were high and it influences their research. However, the limited library e-resources impede their internet usage.

Methodology

The descriptive research design was employed in this study. The study population consists of all postgraduate vocational and technical education students in Ekiti State University, Ado-Ekiti. A total of 50 postgraduate students was selected using the stratified sampling technique which was to ensure that all categories of post-graduate students. The strata used were the levels (Postgraduate Diploma, Masters, and PhD) and Gender (Male and Female). A total of 10 Postgraduate diplomas students, 30 Masters students, and 10 PhD students were selected in all. The research instrument used was a well-structured questionnaire which was structured into three sections, A, B and C.

Section A contained items on socio-demographic characteristics of the respondents: gender, age and marital status. Section B on types and frequency of internet resources and factors influencing the use of internet resource for research while section C focuses on challenges and barriers faced by PG technical education (TE)

students. The four-point likert scale will be used with the following score: Strongly Agree (4), Agree (3), Disagree (2) and Strongly Disagree (1).

The instrument content validity was ascertained by experts in Technical Education and Test and Measurement in the Faculty of Education, Ekiti State University, Ado-Ekiti. The instrument was modified based on the comments of the experts to meet the face validity requirements. The reliability of the instruments was piloted with a small group of postgraduate students to refine clarity and accuracy. Statistical methods was used to test for consistency and reliability if the finding, and triangulation will be employed by comparing data from multiple sources, instrument was carried out using the test-retest method. To this end the instruments were administered

on 10 post graduate VTE students in University of Benin, Benin City, Edo State (UNIBEN) twice within the interval of 1 week. The two responses were correlated and analyzed using Pearson's Product Moment Correlation (PPMC). The reliability coefficient of 0.77 was obtained which was considered high enough for the study. The data collected was analyzed using both descriptive and inferential statistics with the aid of Statistical Packages for Social Sciences (SPSS v. 25). For the descriptive analysis, frequency counts, percentages, means and standard deviations was used. ANOVA was used to examine the factors influence the use of internet resources among the students tested at 0.05 level of significance Results obtained were presented in tables.

Results

Table 1: Types and Extent of Internet Resources Use by Postgraduate VTE Students in EKSU

S/N	Items	SA (%)	A (%)	D (%)	SD (%)	Mean	SD
1.	Academic Databases (EBSCO, JSTOR, ProQuest etc.)	16 (32.0)	21 (42.0)	8 (16.0)	5 (10.0)	1.96	0.70
2.	Search Engines (Google, Bing, Yahoo, Ask etc.)	36 (72.0)	14 (28.0)	0 (0.0)	0 (0.0)	2.72	0.63
3.	Educational websites (research notes, course materials)	14 (28.0)	17 (34.0)	11 (22.0)	8 (16.0)	1.74	0.61
4.	E-book and digital text	10 (20.0)	14 (28.0)	17 (34.0)	9 (18.0)	1.50	0.69
5.	Online forums and research communities (Quora research gates etc.)	5(10.0)	12 (24.0)	12 (24.0)	21 (42.0)	1.02	0.74
6.	Government and NGO websites (Census Data, reports)	8 (16.0)	11 (22.0)	18 (36.0)	13 (26.0)	1.28	0.72
7.	Open Access Journals	18 (36.0)	25 (50.0)	5 (10.0)	2 (4.0)	2.18	0.61
8.	Artificial intelligence tools (ChatGPT, Google Bard etc.)	9(18.0)	14 (28.0)	18 (36.0)	18 (18.0)	1.46	0.63
9.	Others e.g. Library databases, Endnote etc.	9 (18.0)	10 (20.0)	17 (34.0)	14 (28.0)	1.28	0.63

Survey, 2023

In Table 1, it was revealed that a total of 74% agreed that they make use of academic databases like ProQuest, JSTOR for their research. All the students seem to make use of search engines like Google, Bing, Yahoo for their research work. A total of 62% agreed that they use educational websites like research notes, course materials in their research while a total of 38% disagreed. Subsequently, it was revealed that not many of the students (48%) agreed to be using E-book and digital text. Only a few percentage of the respondents (34%) agreed that they do make use of online forums and research communities (Quora research gates etc.) while a total of 66% of the respondents disagreed. This is also the case in the use of Government and NGO websites (Census data, reports) for research as only a total of 38% agreed to be using this while a total of 62% of the respondents disagreed. It was also

revealed that a total of 86% of the students do make use of open access journals while 14% do not. The use of artificial intelligence tools in research was not so common among the students as only 46% of the students agreed to its usage while 54% disagreed. A few (38%) percentage of the students also use other internet resources such as library databases etc. Furthermore, it was revealed that search engines (Mean=2.72; SD=0.63) is the most commonly used internet resources by students. This is followed by open access journals (Mean=2.18, SD=0.61), academic databases (Mean=1.96, SD=0.70), and educational websites (Mean= 1.74, SD=0.61), while the list used are artificial intelligence tools (Mean=1.46, SD=0.63), Government and NGO websites (Mean=1.28, SD=0.72), and online forums (Mean=1.02, SD=0.74) in that order.

Table 2: Factors influencing the Utilization of Internet Resources by Postgraduate VTE Students in EKSU

S/N	Items	SA (%)	A (%)	D (%)	SD (%)	Mean	SD
1.	Access to technology	15 (30.0)	17 (34.0)	10 (20.0)	8 (12.0)	1.78	0.658
2.	Digital literacy	14 (28.0)	22 (44.0)	16 (16.0)	8 (14.0)	1.88	0.774
3.	Institutional support	9 (18.0)	17 (34.0)	17(34.0)	7 (14.0)	1.56	0.695
4.	Field of Study	12 (24.0)	18 (36.0)	12 (24.0)	8 (16.0)	1.68	0.712
5.	Time Constraints	4 (8.0)	11 (22.0)	21 (42.0)	14 (28.0)	1.10	0.750
6.	Technological infrastructure	16 (32.0)	19 (38.0)	9 (18.0)	6 (12.0)	1.90	0.695
7.	Awareness to available resources	11 (22.0)	16 (32.0)	12 (24.0)	11 (22.0)	1.54	0.697
8.	Other (Personal motivation, ethical factors, government policies etc.)	10 (20.0)	18 (26.0)	14 (28.0)	8 (16.0)	1.60	0.680

Survey, 2023

Result presented in Table 2 on the factors influencing the utilization of internet resources by Postgraduate VTE students in Ekiti State University revealed that a total of 64% of the students agreed that access to technology which can include internet connectivity influence the utilization of internet resources while a total of 36 disagreed. Majority of the students (72%) agreed that digital literacy is a major factor influencing utilization of internet resources by Postgraduate students while a total of 28% disagreed. A total of 52% agreed that institutional support could influence utilization of internet resources by PG VTE students while a total of 48% disagreed indicating varying responses. Majority of the students also believed that the field of study is also important in influencing utilization of internet resources in research as a total of 70% agreed while 30% disagreed. Only a few percentage of the respondents think time constraint could be an influencing factor to utilization of internet resource for research. It was also revealed that a total of 70%

agreed that technological infrastructure could influence the utilization of internet resources by PG VTE students while a total of 30 disagreed. A total of 54% of the respondents agreed that awareness to available resources could also influence the use of internet resource for research among the students while a total of 46% disagreed. Lastly, some of the respondents (46%) think that other factors such as personal motivation, ethical factors and government policies could influence the use of internet resource for research by VTE PG students in EKSU while majority (54%) disagreed. In addition, in rating the factors that is believed to influence the utilization of internet resources by students' technological infrastructure (Mean=1.90, SD=0.695), digital literacy (Mean=1.88, SD=0.774), access to technology were major factors to be considered while the least factor that will most likely not influence utilization of internet resource is time constraints (Mean=1.10, SD=0.750).

Table 3: Three-way ANOVA result showing influence of gender, age and marital status on use of internet Resources by VTE Postgraduate Students in EKSU

Dependent Variable: Utilization of Internet Resources
Type III Sum of

Source	Squares	df	Mean Square	F	Sig.
Corrected Model	605.158 ^a	13	46.551	1.055	.426
Intercept	9674.860	1	9674.860	219.362	.000
Gender	1.515	1	1.515	.034	.854
Age	21.686	2	10.843	.246	.783
Marital	.083	2	.042	.001	.999
Gender * Age	282.089	2	141.044	3.198	.043
Gender * Marital	89.493	1	89.493	2.029	.163
Age * Marital	138.686	2	69.343	1.572	.222
Gender * Age * Marital	159.487	2	79.744	1.808	.179
Error	1543.658	35	44.105		

Total	32624.00	49
	0	
Corrected Total	2148.816	48
a. R Squared = .282 (Adjusted R Squared = .015)		

3-Way Analysis of Variance result presented in Table 3 on the influence of gender, age and marital status on use of internet resources by VTE Postgraduate students in EKSU revealed that gender ($F(2, 48)=.34$, $p>.05$), age ($F(2, 48)=.246$, $p>.05$) and marital status ($F(2, 48)=.001$, $p>.05$) does not significantly influence the use of internet resource by VTE Postgraduate students. Interactively, gender and age ($F(2, 48)=.3.198$, $p<.05$) significantly influence use of internet

resources by VTE postgraduate students while gender and marital status ($F(1, 48)=2.029$, $p>.05$), age and marital status ($F(2, 48)=1.572$, $p>.05$) do not significantly influence utilization of internet resources by VTE postgraduate students. In addition, it was shown that gender, age and marital status ($F(2, 48)=1.572$, $p>.05$) do not interactively influence utilization of internet resources by postgraduate VTE students in research.

Table 4: Challenges faced by postgraduate VTE students in using Internet Resources for Research

S/N	Items	SA (%)	A (%)	D (%)	SD (%)	Mean	SD
1.	Information overload	12 (24.0)	16 (32.0)	13 (26.0)	9 (18.0)	1.62	0.593
2.	Information credibility	8 (16.0)	12 (24.0)	19 (38.0)	11 (22.0)	1.34	0.695
3.	Academic integrity and Plagiarism	14 (28.0)	17 (34.0)	11 (22.0)	8 (16.0)	1.74	0.630
4.	Access restriction to resources	7 (14.0)	15 (30.0)	18 (36.0)	10 (20.0)	1.38	0.687
5.	Technological barriers	18 (36.0)	21 (42.0)	7 (14.0)	4 (8.0)	2.06	0.774
6.	Lack of digital skills	14 (28.0)	13 (26.0)	9 (18.0)	14 (28.0)	1.54	0.656
7.	Lack of guidance	11 (22.0)	19 (38.0)	12 (24.0)	8 (16.0)	1.66	0.675
8.	Others (Outdated information, digital fatigue)	12 (24.0)	14 (28.0)	10 (20.0)	4 (8.0)	1.48	0.630

Survey, 2023

Result presented in Table 4 on the challenges faced by postgraduate VTE students in using internet resources showed that a majority of the students (56%) believed that information overload is one the problems while a total of 44% of the

respondents disagreed. Furthermore, it was revealed that only some of the respondents agreed (40%) that information credibility could be a major challenge to VTE students in using internet resources while majority (60%) disagreed. Indicating

that information credibility might not be a major challenge. It was also shown that a total of 62% agreed that academic integrity also constitute a major problem faced by postgraduate VTE students in using internet resources for research while 38% disagreed. Access restriction to internet resources might not be a major challenge as 44% of the respondents agreed while 56% disagreed. On technological barriers, a total of 78% of the respondents agreed while 22% of the respondents disagreed that it constitute the major challenge faced by PG VTE students in EKSU. A total of 54% of the respondents agreed that lack of digital skills affect is a major challenge faced by PG VTE students in using internet resources for research while a total of 46% disagreed. Furthermore, a total of 60% agreed that lack of guidance could be a major challenge faced by postgraduate VTE students in using internet resources for research while a total of 40% disagreed. 52% of the respondents thinks there could be other challenges such as outdated information and digital fatigue. While a total of 48% disagreed. Subsequently in Table 4, it was shown that technological barriers (Mean=2.06, SD=0.774) is the major challenge faced by the students, this is followed by academic integrity (Mean=1.74, SD=0.630), lack of guidance (Mean=1.66, SD=0.675).

Discussion

Findings obtained on the usage of internet resources for research among the postgraduate technical education students revealed that most students reported using academic databases like ProQuest and JSTOR, along with search engines like Google, Bing, and Yahoo for their research while they also rely on educational websites for course materials and

research notes. However, it was observed that only few of them students utilize E-books, digital texts, online forums, and government or NGO websites for their research while majority of students turn to open access journals for academic information, while the use of artificial intelligence tools remains relatively low. In other words, search engines like Google, Bing, Yahoo, Google Scholar are most widely used internet resources for research among the postgraduate student reflecting their universal appeal. Open access journals were also pronounced among the students highlighting their importance in research. This is in line with the findings of Muhammad (2018) who highlighted the major internet resources used by students in research and found search engines to be widely used. Similarly, Oberiri (202) discovered that search engines were commonly used among students because of their easy access and less technicality involved in accessing them. In addition, it was noted that open access journals were also commonly used due to low access restrictions.

On the factors influencing students perceive access to internet resources and its use for research, the major factors identified in the study were digital literacy, institutional support, field of study, and internet technological infrastructure as pivotal factors influencing their use of internet resources. This finding supports that of Ime et al., (2021) who discovered the major factors influencing the use of internet resources among students were the availability of internet resources, digital literacy and guidance. In addition, the result showed that socio-demographic factors such as age, gender and marital status does not

individually influence the use of internet resources to among the students. However, there is a notable interaction between gender and age, which alters usage patterns of internet resources in research among postgraduate students.

The major challenges highlighted in the study by the students on the use of internet resources for research include; technological barriers, information overload and academic integrity, which can hinder their effective use of internet resources, lack of digital skills, insufficient guidance, and other factors like outdated information and digital fatigue. However, concerns about information credibility are less prevalent, suggesting that students generally trust the sources they access. Access restrictions to internet resources do not seem to be a major obstacle for most students. It corroborates with that of Apuke and Iyendo (2022) whose study found that the major problems of the use of internet resource centers around access to internet infrastructure, lack of digital literacy and guidance on the use of internet resources for research. This is also similar to the highlighted problems of the use of internet resources among postgraduate students as found by Abubakar and Adetimiri (2016).

Conclusion

This study assessed the use of internet resources for research among postgraduate technical education students in EKSU. Specifically, the study highlights the types and extent of internet resource use in research among the students, identified the factors influencing the use of internet resources and challenges faced by postgraduate students in using internet resources. It was evident from the result obtained

that many of the postgraduate students' still have limited knowledge on the availability and usage of internet resources for research. It is evident as many of them only supported the use and reliance on search engines and open access journals while they are literary new to use of AI tools in enhancing better research and other research communities. Some of the influencing factors and challenges are technological barriers, information overload, and concerns about academic integrity. Additional hurdles include a lack of digital skills, insufficient guidance, and issues like outdated information and digital fatigue. It is therefore recommended that institutions should prioritize and expand digital literacy programs for postgraduate students. These programs should cover essential skills such as effective searching, critically evaluating online sources, and using research tools which can be achieved through workshops, online courses etc.

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GAS TURBINE AS AN ALTERNATIVE STRATEGY FOR SUSTAINABLE ELECTRICITY POWER STABILITY IN EKITI STATE, NIGERIA

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Abstract

This study examined gas turbine as an alternative strategy for sustainable electricity power stability in Ekiti state, Nigeria. A survey research method was used for the study. The population for this study consisted of 153 staff of Benin Electricity Distribution Company (BEDC) in Ekiti State. The sample for this study was 111 respondents. The data collected from the field were answered using descriptive analysis method (mean and standard deviation). The hypothesis was tested at 0.05 level of significance using simple regression analysis. From the analysis, it was revealed that the factors delimiting the sustainable electricity power supply in Ekiti State include ineffective energy management structure, government's inconsistent and misguided power reform policies, inefficiency in power generation, transmission, distribution and consumption, incompetent labour force and inadequate fund supply. It was revealed that there is a significant impact of gas turbine on sustainable power supply in Ekiti State. It was unveiled that the measures adopted by the management of BEDC in Ekiti State to achieve a sustainable power supply in Ekiti State include potential evaluation of all primary energy source in the state, restructuring of the energy sector, employment of skilled staff, training of employees and proper accountability of funds management. Based on the findings of this study, it was concluded that there is a significant impact of gas turbine on sustainable power supply in Ekiti State. It was recommended that government should introduce a well-defined legal framework to guide all the stakeholders of the energy sector in the state

Keywords: Gas Turbine, Electricity, Power Stability, Benin Electricity Distribution Company (BEDC)

Introduction

In Nigeria, energy serves as the pillar of wealth creation evident by being the nucleus of operations and engine of growth for all sectors of the economy. The output of the energy sector such as electricity usually consolidates the activities of the other sectors which provide essential services to direct production activities in agriculture, manufacturing, mining,

commerce among others. Nigeria is endowed with abundant energy resources but suffers from perennial energy crisis which has defied solution.

Electricity is a type of energy that involves the flow of electrons usually generated from either renewable or conventional energy sources. Electric power is the engine that drives industrialization, which improves communication, helps innovation in

science and Technology, provides sound healthcare delivery system and improves citizen's standard of living (Olaoye, 2019). Since Electric power is the engine that drives industrialization, a stable Electric power supply is the key for Nigeria to become one of the most 20 developed economy in the world (Emovon & Kareem 2018). But it seems unfortunate that the biggest problem in Nigeria is electricity crisis, a crisis without end.

It is very clear that electrification is a prerequisite to modern industrialization; hence we cannot minimize the importance of this notion. It is quite clear that there is no nation which can develop and industrialize without sound electric base. Today, many depend on electricity for basic needs such as food, water, shelter, communication, employment and health care. Those needs are served by infrastructures for food preservation, water treatment, heat and light, phone service, Internet, offices, factories, hospitals and emergency response, to name a few. Yet all of those essentials are without electricity. We could easily argue that population growth is fueling the growth in electricity demand.

Electricity is an essential commodity required for the future development of the society (Adeyemo, 2019). This good must be supplied on a continuous basis in order to cover the daily requirements. To this end, the performance and efficiency of power generation industry (Power Sector) is of great importance towards achieving quality and reliable supply of electricity. Continuous access to quality energy infrastructure is an essential ingredient for sustaining economic growth and development. Inadequate supply of electricity has the capability to retard development of industries, small scale businesses,

hospitals and establishment of other infrastructural facilities in the urban and rural settlements (Oyedepo et al., 2012). Several strategies have been put in place to enhance the sustainable power supply in Nigeria. One of this strategy is, gas turbine.

A gas turbine is a *type of engine in which a shaft is made to rotate by burning gas moving past arrays of blades arranged in circles*. A gas turbine, also called a combustion turbine, is a type of continuous flow internal combustion engine (Ajewole, 2019). The main parts common to all gas turbine engines form the power-producing part (known as the gas generator or core) and are, in the direction of flow; a rotating gas compressor, a combustor and a compressor-driving turbine. Additional components have to be added to the gas generator to suit its application. Common to all is an air inlet but with different configurations to suit the requirements of marine use, land use or flight at speeds varying from stationary to supersonic. A propelling nozzle is added to produce thrust for flight.

The basic operation of the gas turbine is a Brayton cycle with air as the working fluid: atmospheric air flows through the compressor that brings it to higher pressure; energy is then added by spraying fuel into the air and igniting it so that the combustion generates a high-temperature flow; this high-temperature pressurized gas enters a turbine, producing a shaft work output in the process, used to drive the compressor; the unused energy comes out in the exhaust gases that can be repurposed for external work, such as directly producing thrust in a turbojet engine, or rotating a second, independent turbine (known as a *power turbine*) that can be connected to a fan, propeller, or

electrical generator. This strategy enhances the supply of electricity to different households.

Statement of the Problem

The Nigerian government have spent so much and still spending huge amount of money on the electricity generation and power supply in Nigeria, allocation made to it is relatively equal to the allocation of education which means that much money is put in to electricity. The epileptic nature of electricity has led to scarcity of petrol and kerosene because the citizens have resulted in using generators and kerosene powered equipment to provide energy for use at homes. Also, import content of our domestic fuel usage has grown over the years to about 75%. This has resulted in the use and overdependence on fuel-wood which has led to deforestation and attendant degradation of the environment and worsening desertification.

A country experiencing energy poverty can be said to be a situation where its citizens lack electric power to meet their basic needs such as lighting and cooking. In this situation, a large number of people in the developing countries like Nigeria are negatively affected by their very low consumption of energy use, while some use dirty polluting fuels and others spend excessive time to obtain fuel in order to meet their basic needs. Access to energy is fundamental to improve the quality of life and is a key imperative for economic development. Poor access to energy in Nigeria obviously translates into increased poverty, poor economic performance, limited employment opportunity and complicated prospects for institutional development. The high growth rate of the population is an indication that the country's energy demand will continue to rise, similar to how the increase in

global population and industrial transformation of the 20th century tremendously increased energy demand.

The energy crisis situation in Nigeria has considerably affected the public users of electricity. This phenomenon has undeniably compelled the majority of households in both rural and urban segments of the country to significantly depend on combustible Renewable Energy sources especially for domestic heating and cooking. Fuel wood and charcoal are widespread energy sources commonly used in Nigeria. Universally accessible energy services in the form of renewable energy resources that are adequate, affordable, reliable, of good quality, safe and environmentally conscious beings are a necessary condition for sustainable development and poverty reduction in the country. This study intends to examine the efficiency of gas turbines as an alternative strategy for sustainable electricity power stability in Ekiti state, Nigeria.

Purpose of the Study

The main purpose of this study is to examine gas turbine as an alternative strategy for sustainable electricity power stability in Ekiti state, Nigeria. The specific purposes are to: determine the current level of electricity power supply in Ekiti State; examine the factors delimiting the sustainable electricity power supply in Ekiti State; investigate the contribution of gas turbine to sustainable power supply in Ekiti State; ascertain the measures to be adopted by the management of BEDC in Ekiti State to achieve a sustainable power supply in Ekiti State.

Research Questions

The following questions will be answered in the course of this study:

- What is the current level of electricity power supply in Ekiti State?
- What are the factors delimiting the sustainable electricity power supply in Ekiti State?
- What are the measures to be adopted by the management of BEDC in Ekiti State to achieve a sustainable power supply in Ekiti State?

Research Hypothesis

The following null hypothesis is formulated:

H₀: There is no significant contribution of gas turbines to sustainable power supply in Ekiti State

Methodology

A descriptive research of the survey design was used for the study. The population for this study covered all the staffs across all the eight departments of Benin Electricity Distribution Company (BEDC), Ado Ekiti, Ekiti State. There are 153 staff in Benin Electricity Distribution Company (BEDC) in Ekiti State (Manager of the BEDC branch, Ado Ekiti, 2024). According to Yamane (1964) model, the sample size for this study was 111 respondents. The

Yamane model (1964) formula is given as:

$$n = \frac{N}{1 + N(e)^2}$$

Where:

n = sample size

N = the population size

e = level of significance

For the population of 111, the sample size based on the formula is:

$$n = \frac{153}{1 + 153(0.05)^2} = 111$$

The study adopted a random sampling technique. The instrument for data collection was a structured questionnaire. The instrument was validated by experts in vocational and technical education, Ekiti State University, Ado Ekiti. The data collected were analyzed using descriptive and inferential statistics. Descriptive statistics of mean and standard deviation were used to answer the research questions while the hypothesis was tested at 0.05 level of significance using simple linear regression.

Result and Discussion

Results

Research Question 1: What is the current level of electricity power supply in Ekiti State?

Table 1: Current Level of Electricity Power Supply in Ekiti State

S/N	Items	Mean	Std. Dev.	Remark
1	Electricity Power is supply often in Ekiti State	2.65	1.398	Agreed
2	Irregular power supply is experienced in some rural areas of the state	2.58	1.267	Agreed
3	Unstable power supply has affected many business in the industrial sector of the state	2.87	1.485	Agreed
4	High costs are incurred to ensure power supply in the state	2.99	1.307	Agreed

Table 1 above showed that all the respondents agreed that the aforementioned items with their means and standard deviation revealed

the current level of electricity power supply in Ekiti State.

Research Question 2: What are the factors delimiting the sustainable electricity power supply in Ekiti State?

Table 2: Factors Delimiting the Sustainable Electricity Power Supply in Ekiti State

S/N	Items	Mean	Std. Dev.	Remark
1	Ineffective energy management structure	2.98	1.324	Agreed
2	Government's inconsistent and misguided power reform policies	2.73	1.268	Agreed
3	Inefficiency in power generation, transmission, distribution and consumption	2.69	1.274	Agreed
4	Incompetent labour force	2.80	1.332	Agreed
5	Inadequate Fund supply	2.74	1.422	Agreed

Table 2 showed that all the respondents agreed that the factors delimiting the sustainable electricity power supply in Ekiti State include ineffective energy management structure, government's inconsistent and misguided power reform policies, inefficiency in power generation, transmission, distribution and

consumption, incompetent labour force and inadequate fund supply.

Research Question 3: What are the measures to be adopted by the management of BEDC in Ekiti State to achieve a sustainable power supply in Ekiti State?

Table 3: Measures to be adopted by the Management of BEDC in Ekiti State to achieve a Sustainable Power Supply in Ekiti State

S/N	Items	Mean	Std. Dev.	Remark
1	Potential Evaluation of all primary energy source in the State	2.76	1.339	Agreed
2	Restructuring of the energy sector	2.84	1.438	Agreed
3	Employment of skilled staff	3.03	1.376	Agreed
4	Training of employees	2.91	1.459	Agreed
5	Proper accountability of funds management	2.94	1.330	Agreed

Table 4 showed that all the respondents agreed that the measures adopted by the management of BEDC in Ekiti State to achieve a sustainable power supply in Ekiti State include potential evaluation of all primary energy sources in the state, restructuring of the energy sector,

employment of skilled staff, training of employees and proper accountability of funds management.

Test of Hypothesis

Hypothesis I: There is no significant contribution of gas turbines to sustainable power supply in Ekiti State

Table 4: Simple Linear Regression Result on the impact of Gas Turbine to the Sustainable Power Supply in Ekiti State

Model	Unstandardized Coefficients		Standardized Coefficient		Sig
	B	Std. Error	Beta	t	
(Constant)	5.030	0.403		12.490	0.000
Gas Turbine	0.355	0.068	0.320	5.204	0.000

Dependent Variable: human resources management decision *p < 0.05 R = 0.320; R² = 0.102; Adjusted R² = 0.098; F = 27.082; Sig = 0.000

The outcome above in table 3 revealed that the correlation coefficient was 0.320 and this implies a moderate relationship between gas turbine and sustainable power supply in Ekiti State. The R² (0.102), which shows the overall explanatory power of the model, reveals that gas turbine explain about 10.2% of the systematic variation in sustainable power supply in Ekiti State. The remaining 89.8% might be due to other variables not included in this study. The overall fitness of the model as shown in the F statistics of 27.082 with a probability of 0.000 is statistically significant as it is less than the standard critical p-value of 0.05. This indicates that there is enough evidence to reject the null hypothesis, reflecting that there is a significant impact of gas turbine on sustainable power supply in Ekiti State.

Discussion of Findings

An attempt has been made to examine gas turbine as an alternative strategy for sustainable electricity power stability in Ekiti state, Nigeria. From the analysis, it was revealed that the factors delimiting the sustainable electricity power supply in Ekiti State include ineffective energy management structure, government's inconsistent and misguided power reform policies, inefficiency in power generation, transmission, distribution and consumption, incompetent labour force and inadequate fund supply. This

outcome is in agreement with the conclusion of Jane (2016) that ineffective energy management structure, incompetent labour force and inadequate fund supply affects the sustainable electricity power supply in Nigeria. Also, it was revealed that there is a significant impact of gas turbine on sustainable power supply in Ekiti State. This implies that an increase in the usage of gas turbine would cause an increase in sustainable power supply in Ekiti State at a significant level. This is in tandem with the objective of gas turbine which is, to ensure the stability of energy supply. This outcome agrees tandem with the findings of Olukayode (2015) that the usage of gas turbine significantly enhance steady power supply in the state. It was unveiled that the measures to be adopted by the management of BEDC in Ekiti State to achieve a sustainable power supply in Ekiti State include potential evaluation of all primary energy source in the state, restructuring of the energy sector, employment of skilled staff, training of employees and proper accountability of funds management. This outcome supports the findings of Elisha (2019) that the best measure to ensure steady power supply in Nigeria is to evaluate all the primary energy source in the state and restructure the energy sector.

Conclusion

From the findings made, it was concluded that the factors delimiting the sustainable electricity power supply in Ekiti State include ineffective energy management structure, government's inconsistent and misguided power reform policies, inefficiency in power generation, transmission, distribution and consumption, incompetent labour force and inadequate fund supply. It was also established that there is a significant impact of gas turbine on sustainable power supply in Ekiti State.

Recommendations

The following recommendations were made based on the findings of the study.

- i. To ensure sustainable electricity power stability in Ekiti State, a thorough evaluation of primary energy sources like natural gas, solar, and biomass is essential. Advanced tools such as GIS and stakeholder collaboration can help identify areas for investment. Partnering with research institutions will enhance resource mapping and analysis for informed decision-making.
- ii. Restructuring the energy sector should prioritize technical and economic feasibility over political influences. Independent advisory committees and feasibility studies can ensure sound investments. Public awareness campaigns will foster support for evidence-based policies, and regular monitoring can ensure policy adherence to data-driven approaches.
- iii. A robust legal framework tailored to the state's energy sector is crucial for stakeholder accountability and collaboration. It should clarify roles, set regulatory standards, and provide mechanisms for monitoring and

dispute resolution. Clear laws will attract investments and ensure sustainable energy development.

- iv. PHCN's involvement in energy activities is critical for improving infrastructure, grid management, and distribution. Collaborative projects, staff training, and capacity-building initiatives will enhance operational efficiency. PHCN's active participation will promote an integrated approach to achieving energy stability.
- v. Combining resource evaluations, data-driven decisions, strong legal structures, and stakeholder engagement offers a sustainable path for Ekiti State's energy stability. These strategies can effectively leverage gas turbines to address energy challenges and create long-term economic and energy security.

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ENHANCING CREATIVITY AND INNOVATION AMONG WOODWORK STUDENTS IN TECHNICAL COLLEGES IN ONDO STATE, NIGERIA

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Abstract

This paper examines the importance of Creativity and innovation in woodwork trades in Ondo state western Nigeria. Nigerians believe that technical colleges Education system are meant for people of lower aspiration, or less academic abilities this notion is not true ,technical colleges is meant for excellent students who can be creative and innovative in woodwork. This article focuses on creativity and innovation in woodwork and It also examined technical problem and work environment that support creativity and innovation , Technical college is the key that transform the economic development of any nation, alleviate poverty and improve quality of life Therefore, the orientations have to change and it's time for parents, guardians and community leaders to encourage the children to learn skills and the government to mobilize resources and pay attention to Technical colleges education as a sure way for Nigeria growth development through personal creativity and innovations on the profession. Vocational and Technical Education (VTE) system play a crucial role in the social and economic development of a nation. Due to this education dynamic nature, they are continuously subjects to the forces driving change in the schools, industry and society. Often shaped by the needs of the changing economy and local community, the challenges and opportunities are unique, Law (2005). This article is not referring to the issue of value and importance of VTE but how to ensure its relevance, responsiveness, quality and values in an increasingly Nigeria economy through enhancing creativity and innovation in woodwork trades. Lack of technological innovation has affected creativity, entrepreneurial spirit and transformation of the Nigeria economy thereby depreciating the country's economy. Nigerians import everything from foreign country neglecting Nigeria products while we are languishing in poverty with low level standard of living. Many graduates of vocational and technical Education from secondary school, N.C.E, Polytechnic and university are jobless because they lack creative and innovative skills. Nigerians must gear up to safeguard Nigeria future and wealth by adopting and tapping from TVE experiences, embrace and enhance Technical colleges Education system Dike (2006). Empowering the people with technical skills would enhance their productivity and national development.

Keyword: Enhancing, creativity, innovation, Woodwork, Technical college, Ondo State , Nigeria.

Introduction

Technical and vocational education (TVE) courses were introduced for students to apply what they learnt in school even if the education terminates in technical college. The National Policy on

Education 2018 stipulated the main feature of the curriculum activities for technical college shall be structural in foundation and trade modules the curriculum for each trade shall consist of five components which are general education, theory and related courses,

workshop practice, industrial training/production work and entrepreneurial training and that technical college will be vocational and academic to expose the student to a variety of knowledge which will help them discover their talents and abilities which could be further developed at the technical college or in higher institution. The beneficiaries at this level will be exposed to junior secondary school leaving examination at the end of three years and their performance will be determined in conjunction with the continuous reports FRN (2014). This will enable the career officers to determine their area of interest into which they could best be suitable. It is in confirmation with "UNESCO (2023) stated that vocational education is designed for learners to acquire the knowledge, skills and competencies specific to a particular occupations or trades. Vocational education may have work-based components example apprentice.

Background of Technical colleges

Critical analysis of Nigerian education system indicated that we still practice what we inherit from the British government which was targeted towards academic; to produce clerical staff, interpreters, clergy men, tax collectors, to support the colonial administration for effective imperialism. They were concerned mostly about the missionaries and the exportation of raw material for the industrial development of Europe. Since then, high premium was placed on white collar jobs, this led to the poor interest of students, parents, career counsellors and other people in TVE. The inferiority complex critical analysis of Nigerian education system indicated that we still practice what we inherit from the British government which was targeted towards academic, According to Fafunwa In Ikpe (2010)

owing to the acute shortage of trained European surveyors in the colonial territory, the survey school was opened in Lagos in 1908, the institution was relocated to the present site at Oyo, in 1934 Oyo state. In the same spirit, the Yaba higher college was established in 1930 first as a medical school, and later courses were added around 1936. The trade school offers pre-vocational course to students who have completed full primary school course. The course lasts for three years and leads to the award of national technical certificate (NTC) conducted by national business and technical examination board (NABTEB) the technical subjects most commonly, offered are technical drawing, mechanical technology, electrical technology and building technology.

Technical colleges admit students who have completed the trade schools course and offer full vocational courses which are of three years duration. Students could be transferred from secondary technical school to technical colleges at the end of 5 years course. Students take advanced national technical certificate ANTC examination which replaces the city and guilds of London institute. The motto of technical college is MENTE MANIBUQUE (hand and brain). Therefore, vocational education is that of form of education which is obtained at the technical colleges. This is equivalent to the senior secondary education (S.S.E) but designed to prepare individual to acquire practical skills and scientific knowledge and attitude required as craftsman and technicians at sub-professional level.

Technical and vocational education is the education that prepares people to a skilled craft as an artisan, trade as a tradesperson or work as a technician. Technical and vocational education is the education for work that prepare individual to be

gainfully employed with or self employed with requisite skills. The genesis of technical and vocational education training in Nigeria dates back to pre-colonial era, people adopted it to meet their daily needs. It was practiced in families while, Training in it occurred under apprenticeship system. Missionary schools excluded it from the curriculum in favour of literacy education. Technical education is referred to as training in theoretical and practical basic science skills and knowledge related to careers

Successful completion of such program lead to labour-market relevant vocational qualifications acknowledge as occupational-oriented by the relevant national authorities and / or the labour market. According to the definition by UNESCO and the International Labour Organization (ILO), Technical and Vocational Education (TVE) refers to “aspects of the educational process involving, in addition to general education, the study of technologies and related sciences, and the acquisition of practical skills, attitudes, understanding and knowledge relating to occupants in various sectors of economic and social life” UNESCO and ILO, (2001). . With this definition, TVE can be acquired before, during and after the academic education including polytechnic and university. Therefore it is independent of students academic status, sex and age; in fact, it is even better and advisable for academically good student or graduate to go for TVE because they will be able to bring in creativity and innovation.

Problems of Technical colleges’

The certificate rating in Nigeria makes it easy for graduates with academic qualifications to get jobs than for those with technical qualification, the rating of the certificate and the level

or salary attached to it make a mess of technical qualifications and discourage people taking up the profession. In fact, trade test certificates 1, 2 and 3 do not have any value like OND, NCE and SSCE. In advertising for jobs, either in government or industries, trade test certificate has disappeared as selection criteria. Another factor that creates the inferiority complex is the selection process for the colleges; citizens were made to understand that students with low marks (poor academic performance) were to be pushed to technical colleges either from primary school or from junior secondary schools. The students with highest marks would scamper for few spaces in the federal government colleges, the unity schools or the gifted schools fully funded by the federal government. With these barriers place on technical college no students are eager to apply for study in technical colleges to study any trades most especially woodwork.

Creativity and innovation in woodwork is the ability to imagine, develop, express, encourage, and apply ideas in ways that are novel, unexpected, or challenge existing methods and norms. For example, we use this skill to discover better ways of doing things, develop new products, and deliver services in a new way. Creativity involves having the idea; innovation involves getting it to market as a product or service creativity and innovation skills help students come up with new, unique, or “outside the box” ideas, or to approach something differently than in the past— both at work and outside work. A curious mindset that finds inspiration from a broad range of experiences and perspectives helps develop creativity and innovation skills. Employers are increasingly seeking people who can apply creativity and innovation skills to come up with new solutions or approaches to tackling challenges. With

strong creativity and innovation skills, instructors can also support and inspire others to develop their own creativity and innovation in woodwork. Skill competences (2021)

Creativity is the spark that ignites innovation, but other skills—like collaboration— provide the fuel that keeps it going. Being innovative involves many other important skills. Innovative people are: Adaptable, Collaborative, Communicators, Problem Solvers, Creative, innovative people face walls all the time. It could be a supervisor who does not want the extra work of trying new things, or investors who are afraid of risk. Overcoming these barriers takes persistence, courage, and self belief, but this can be hard in a world that sometimes is stacked against people. Race, gender, and sexual orientation can all be walls that people have to climb, but how do people do that? 1. Be true to your values and principles. 2. Find others like you. 3. Don't struggle alone, get help. 4. Take the long view. Walker (2002)

The “3i” creativity model developed by Natalie Nixon, explains that creativity requires three capabilities: a. INQUIRY: The ability to ask questions, re-frame questions to address gaps in information, and discuss different ideas with others in an open-minded way.

b. IMPROVISATION: The ability to observe carefully and use those observations to build ideas without being held back by existing concepts, rules, structures, and practices.

c. INTUITION: The ability to listen to your subconscious (receive a ‘gut feeling’), and use the feeling to help you do things like find patterns in things that seem unrelated. Along with inquiry, improvisation and intuition, Nixon stresses that truly creative people have a powerful combination of WONDER and RIGOR. Wonder being

open to ask, ‘what if...?’ It requires an open mind that sees beyond what is, and allows consideration of what might or could be. Rigour understanding students subject fully so that they can make sound judgements about creative ideas that might go outside the norms. In other words, to think ‘outside the box’ students must have a good understanding of what is in the box! Rigor also speaks to having the perseverance needed to get the level of understanding to help students move through creativity to successful innovation. The interplay of wonder and rigor is also important. As Nixon suggests, (2020) opportunities for WONDER are found as students pursue a RIGOROUS understanding of a field, and students can't sustain that effort for RIGOR without the joy of WONDER. Michalko (2011) suggests the “SCAMPER” checklist to help students think creatively and innovate. Think about a subject from the simple (like, how to improve the ordinary paperclip), to the complex (like, how best to reorganize your business), and apply the “SCAMPER” checklist of questions. SCAMPER means: S Substitute, C Combine, A Adapt, M Modify, and P Put to another use, E Eliminate, R Reverse.

Students in woodwork should try some of the following tips to build creativity

1. Try new things: Being open to experience stimulates your curiosity and emotions. Try to break habits (new furniture, new bed shows, new routes to work).
2. Just do it: Don't think about it too much, try it! You are more likely to be creative if you try more things. Not everything will work, but the odds are in your favour.
3. Reflect Think about each creative experience: Did it work? Why not? The more you allow yourself to

- feel deeply, the more likely you can connect to your creativity.
4. Journal Keep a record of your ideas and reactions to the day so student remember inspirations and use them in new ways.
 5. Think outside the box: The more students recognize the boundaries of their own experience and comfort zone, the more students will explore outside it. Avoid worn paths of thought. Listen to other people. Don't rely on your first answer to a problem.
 6. Students should let their subconscious do its thing Often creative ideas emerge when they are relaxing or having their "down time" like exercising, having a shower, daydreaming, or sleeping.

Work environment that supports creativity and innovation:

Creativity and innovation should be able to:

- celebrate and supports students and their work.
- encourage the expression of students interests and personalities (celebrates diversity).
- seek input from students regarding decisions and considers that input.
- encourage debate (allows both expression and a diversity of views).
- Provides respectful consideration of ideas and a rationale for decisions taken.
- make the workspace comfortable, interesting, and flexible if possible.
- Gives time for reflection and wonder.
- encourage adaptive processes and is open to change
- accept that creativity brings risk. Failures can spark great creativity!

- provide opportunity for learning on the job.

The challenge for leaders is to learn how to think differently — and even more powerfully, how to think differently together. Udall, (2014)

The term creativity and innovation are often used to mean the same thing, but each has a unique connotation.

Creativity

Creativity is "the ability to bring something new into existence". This definition emphasizes the "ability", and not the "activity", of bringing new things into existence. A person may therefore conceive of something new and envision how it will be useful, but does not take the necessary action to make it a reality. Creativity is characterized by to perceive the world in new ways, to find hidden patterns, make connections between seemingly unrelated phenomena and to generate solutions Ezemno and Offor, (2012). It is a phenomenon whereby something new is created which has some kind of subjective value, turning new and imaginative idea into reality. It is also the tendency to generate or recognize ideas, alternatives or possibilities that may be useful, ability to transcend traditional ideas, rules, patterns, relationships or the like, to bring new products. Creativity is defined as the ability to develop ideas that are unique, useful and worthy of elaboration. It involves the use of ideas (working on ideas) until something comes out of it. Creativity is the ability to solve problems, fashion products and define new questions in a particular cultural setting. This implies that what is considered creative in one setting, may be a regular occurrence in another. The key word to creativity therefore is an insight which emphasizes the mighty or ability to see a new thing (Ohizees, 2006). Creativity ensures that

individual is involved in initiating new projects, creating opportunities while solving problems. Creativity also ensures that individuals learn to produce practical solutions to newly defined initiatives. These and other things are what creative problem-solving in the realm of creativity encourage. In getting creative people to work together, heterogeneous mix of preferred creative process style outperforms teams with homogeneous mix in innovative work (Don. 2004). The creative process, a complicated process, involves the ability to generalize, evaluate, design, troubleshoot, Academic Excellence make decisions, create, modify, simplify, synthesize, hypothesize, and learn new skills. These new skills can be learnt through Technical and vocational Education and Training and in Technical colleges in Nigeria.

The Creative Process

Clearly, action by itself has no meaning; it is of little value to simply “do things” without having inspiration and direction. Entrepreneurs need ideas to pursue, and ideas seldom materialize accidentally. Isaac Newton may have been hit on the head by a falling apple, but he discovered gravity through a lifetime of scientific investigation. Ideas usually evolve through a creative process whereby imaginative people germinate idea, nurture them, and develop them successfully. Various labels have been applied to stages in the creative process, but most social scientists agree on five stages that label: an idea germination; preparation, incubation; illumination, and verification. In each stage, a creative individual behaves differently to move idea from the seed stage of germination to the last stage of verification, and as we can see, behaviour varies greatly among individuals and their ideas. Creativity

has been highlighted as essential skills for the 21st century in Nigeria, especially if we consider that the skill can promote human potential by eliciting positive aspects of the individual

Creativity is the intellectual ability to make creations, inventions, and discoveries that brings novel relations, entities, and/or unexpected solutions into existence. Creativity is a gifted ability of humans in thinking, inference, problem solving, and product development. Wang (2013). Creativity at work is the process, outcomes, and products of attempts to develop and introduce new and improved ways of doing things. The creativity stage of this process refers to idea generation, and innovation to the subsequent stage of implementing ideas toward better procedures, practices, or products. Creativity can be understood as being a multidimensional construct, involving cognitive variables, personality characteristics, family, educational aspects, and both social and cultural elements. These dimensions interact with each other according to individual thinking and creative styles and are therefore expressed and found in many different ways. Stenberg (2010), Creativity and innovation can occur at the level of the individual, family, work team, organization, or at more than one of these levels combined. Whereas creativity has been conceived of as the generation of novel and useful ideas, innovation has generally been argued to be both the production of creative ideas as the first stage, and their implementation. Neil, A et al. (2014) Therefore, the creative phenomenon has been studied under the most different approaches

1. Idea Germination, The germination stage is a seeding process. It is not like planting as a farmer does to grow maize, but

more like the natural seeding that occurs when pollinated flower seeds, scattered by the wind, find fertile ground to take root. Exactly how an idea is germinated is a mystery; it is not something that can be examined under a microscope. However, most creative ideas can be traced to an individual's interest in or curiosity about a specific problem or area of study.

2. Preparation or Concentration- you need to concentrate on the information and become immersed in it. Much of the information refers to facts, inference, speculation and opinion, all must be treated in its own merit. And dreaming up the alternative without refining or evaluating them
3. Incubation- Indicates that during the period of incubation, no voluntary or conscious thinking of the problem occurs. Incubation may be facilitated when the problem in hand is deliberately set aside from consciousness by a period of rest or by handling other problems. He regards the second as more economical since it could set in motions a series of incubation leading to several
4. Illuminations or Insight – Research shows that letting your mind wander in this way leads to

Idea generation, the new seeding stage of a new idea recognition

greater

Preparation conscious search for knowledge radicalization

Incubation subconscious assimilation of information finalization

Illumination recognition of idea as a being feasible, realization

Verification application or less

creativity , This is extremely important stage because sometimes it takes days, weeks, months, even years, this period, the problem conquering solution flashes into person mind at an unexpected time, it spark the creativity epiphany, it fosters intuition for new products and creative execution.

5. Verification and applications- the process of verification is continuous and very often we find that creative individuals, revise, modify, or change their idea. The individual tries to verify whether the solution is correct, valid and reliable in terms of existing knowledge. Verification procedure includes gathering support evidence, using logical persuasions and experimenting with new idea. The above process is a systematic process of applying creativity and innovation to the needs and opportunities in the market place; an innovation is the ability to apply creative solutions to those problems and opportunities in order to enhance people's lives. As an Entrepreneur, you must be disciplined in carrying out this task.



to prove idea has
value validation

Fig 1 Creativity process

Innovation

Innovation has been valued as a necessary individual characteristic in the global Innovation: Taken as a concept of multidisciplinary interest, research on this phenomenon has been developed in several areas of knowledge including administration, education, economics, psychology and sociology, among others. As a concept, innovation has been defined as the development of the product or practice of new and useful ideas to benefit individuals, teams, organizations or a broader range of society. Bledow, R. et.al (2009). Innovation is the process of doing new things. This distinction is important. Ideas have little value until they are converted into new products, services or processes. Innovation means a deep thought that brings new ideas, renewing, changing or generate new plans or theories. It also means a vision which tends to creating new prototypes, either from extinct products or present ones, this serves as a platform in which new ideas are being created. Throughout history, great innovations have periodically occurred to thrust humankind forwarded with new technologies, new industries or new economic system. Technical and vocational students need to be groomed on how to fathom new ideas basically for improvement in their field of study. Innovation therefore is the transformation of creative ideas into useful applications, but creativity is a prerequisite to innovation. The Organization for Economic Cooperation and Development (2016), The Oslo Manual

for measuring innovation defines four types of innovation: product, process, marketing and organizational innovation.

Product innovation: A good or service that is new or significantly improved. This includes significant improvements in technical specifications, components and materials, software in the product, user friendliness or other functional characteristics.

Process innovation: A new or significantly improved production or delivery method. This includes significant changes in techniques, equipment and/or software.

Marketing innovation: A new marketing method involving significant changes in product design or packaging, product placement, product promotion or pricing.

Organizational innovation: A new organizational method in business practices, workplace organization or external relations.

Creativity and innovation skills have been a critical for achieving success in any trade and profession. Albert Einstein said that “insanity is the process of doing the same thing over and over again and expecting different result”. While creativity is the ability to produce new and unique ideas, innovation is the implementation of that creativity – the introduction of new idea, solution, process or products. It is advisable to introduce creativity and innovation to the curriculum of TVE schools so as to prepare the mind of the students about the challenges and the prospects of

technical education, just like the entrepreneur study was introduced to secondary and tertiary education in Nigeria. They would be trained on ways of solving problems, implement solutions, There is absolutely nothing

that creativity cannot be applied to, either through procedure, practices and the products, most of the creativity in vogue today is the packaging of the products, that makes the goods stands out among others

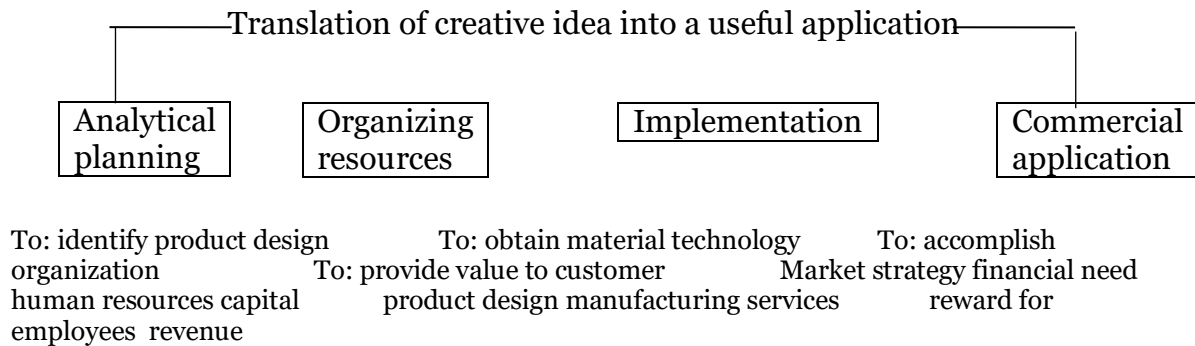


Fig 2: Elementary innovation process

The problems facing creativity and innovation in woodwork

Creativity and innovation in woodwork can face various challenges including

- Traditional methods: woodworking has a rich tradition of using established techniques and design, which can sometimes stifle creativity and innovation of artisans are reluctant to deviate from these norms
- Limited access to materials: depending on the region, woodwork may have limited access to diverse and sustainable wood types, which can limit their creative possibilities
- Skills and educational gaps: developing innovative woodworking techniques often requires specialized skills and knowledge, which may not be readily available to all artisans.
- Market demand: commercial woodworkers may be constrained by market demand, which may over prioritize traditional or mass-produced items over unique, creative pieces

- Safety regulations: safety standard and regulations in woodworking can limit the use of certain materials or processes, affecting creativity Design trends: rapidly changing design trends and consumer preferences and can make it challenging for woodworkers to keep up and remain innovative

The strategy involved in enhancing creativity and innovation in woodwork

Woodworking creativity and innovation involve a combination of traditional techniques and new ideas. These are some strategies to foster creativity and innovation in woodworking

- Learn the basics: start by mastering fundamental woodworking skills and techniques, a solid foundation is essential for exploring creative ideas
- Experiment with materials: don't limit yourself to just one type of wood, experiment with different types, grain, and finishes to discover new possibilities.

- Sketch and plan: before starting a project, sketch your design ideas and create detailed plans, this helps you visualize and refine your concept.
- Up-cycle and repurpose: give new life to old or discarded wood by repurposing it into functional and artistic pieces
- Incorporate other materials: integrate non-wood elements like metal, glass or resin into your projects for added flair
- Joinery techniques: explore various joinery methods beyond the standard one, dovetails, mortise, and other joints can be adapt and combined creatively
- Mix styles: blend tradition and contemporary woodworking styles to create unique and innovation pieces.

Conclusion

Creativity and innovation can set in to improve on their various trades and professions; many developed countries have survived through this method Gang (2004) stated that there is need for reformation of educational system, he emphasized on re-design of syllabuses and curricula approach. A comprehensive reform towards technical and vocational education and a deliberate attempt to uplift the program is the only means to technology retrogression in the Nigeria Ojimba (2012). Educational curriculum should portray creativity for the country to develop technologically and alleviate poverty in the country.

Creativity and innovations have variously been associated with major cultural and intellectual movements, types of educational institutions and the facilitating role of government. Therefore, creativity and innovation

rests on the people, educational institution and the government. Arora (2015) emphasis upon more formal scientific and technical training in educational institutions provided a breeding ground for creativity and experimentation in Woodwork industry in the late twenty century. The British 'industrial revolution' from the late nineteenth century was closely associated with the beginnings of a shift from a cottage system of outworkers using hand tools in cotton manufacture to the deployment of machine tools located in centralized factories. Therefore, for technical colleges and a nation to survive, Nigeria need to go back to the basics, develop the technical college's educational system and encourage creativity and innovation.

Recommendation

Technical and Vocational Curriculum must includes hand-made works, starting from modification which enable the students to create new products. Appraisals of the Instructors in technical and vocational colleges should include "what they produce in a session" which will allow the students to liaise with their lectures and brings new ideas. Standard and well equipped workshop and laboratories must be built in each technical colleges of Education. Students of the technical colleges should be compelled to go for industrial attachment programs in the industries based on their field of study, in order for them to learn more and have a tangible idea of what to do and how to make new things. Technical and vocational students' final project must be construction not research or abstract write-up which must be strictly monitored by their supervisors. Board for Adult, Technical and Vocational Education should make provision for affordable materials and

components for practical out of the departmental fee paid by the students to aid the less buoyant one. Workshop and trainings should be organized for students and instructors while the instructors should be sent out for trainings for them to be conversant with the new development in their field because technology advances on daily basis. Therefore

- i. Government should restructure technical college's educational system by paying attention to TVET and make appropriate policy that would create new dynamics for technical and technological training in Ondo state, Nigeria.
- ii. Elementary skills and principles should be introduced in primary schools to orient the children early enough towards technical and vocational education, the training and career guidance needs to be strengthened in all the primary and post primary institutions on the importance of technical colleges so as to bring to attention of the learners the opportunities that exist in these areas of study.
- iii. Creativity and innovation to be included in the curriculum of Technical colleges Education system, as it is a learning skills that require understanding and specific skills.
- iv. It is recommended that government should give orientation and campaign on the importance of technical colleges in Ondo state for the development of the country through its art exhibitions, mass and social media. The government should also acknowledge and reward innovation to encourage others.
- v. Development of industrial sector would make jobs available for graduates of technical colleges in Ondo state and in Nigeria as a whole.

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WORKSHOP MAINTENANCE SKILLS NEEDED BY MOTOR VEHICLE MECHANICS CRAFTSMEN IN TECHNICAL COLLEGES IN ONDO STATE, NIGERIA.

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Abstract

The study was carried out to determine the workshop maintenance skills needed by motor vehicle mechanic works' craftsmen in technical colleges in Ondo State. The study adopted descriptive survey design. The population for the study comprised 18 motor vehicle mechanic works teachers and 56 motor vehicle mechanic works' final year students of technical colleges in Ondo State. A structured questionnaire item was used for collecting data from the respondents. The instrument was validated by three experts. Cronbach alpha reliability method was employed to determine the internal consistency of the questionnaire items and 0.82 was obtained as the reliability coefficient. Two research questions was raised to guide the study while two null hypotheses formulated were tested at 0.05 level of significance. Mean was used to answer the research questions while t-test statistics was used to test the hypotheses of no significant difference at 0.05 levels of significance. The findings revealed that workshop craftsmen are not adequate and the available ones lack maintenance skills. It was also revealed that most of the available workshop maintenance facilities and equipment are not functional effectively. The study therefore recommends that all the workshop maintenance skills identified in the study should be used to train the MVMW craftsmen in technical colleges in Ondo State. In addition, government should make provision for periodic repair and maintenance of the available facilities and equipment in MVMW workshops in technical colleges in Ondo State.

Keywords: Workshop, Maintenance Skills, Motor Vehicle Mechanics Works, Craftsmen, Technical College.

Introduction

Technical Colleges are post basic institutions where students are giving full vocational training that will enable them acquire relevant knowledge, skills and attitude for paid or self-employment in various occupations in the world of work. Technical colleges according to Olakotan (2021) are post-basic education institutions where students are exposed to programmes targeted towards acquiring relevant knowledge and skills in different trades for self-reliance, and employment in the world

of work. Technical colleges constitute a vital aspect of the Nigerian education system as the goal of their establishment dwelt on the production of competent manpower for the nation at craftsmen and master craftsmen level (Oke & Olakotan, 2020).

Technical colleges admit Junior Secondary School leavers and provide them with a full vocational course of three years. However, National Board for Technical Education (NBTE 2011) reported that the quality of academic programmes in technical colleges is regulated by its body of curriculum

development, supervision and periodic accreditation visits while the National Business and Technical Examinations Board (NABTEB) is responsible for the examination and certification of the occupational trades leading to the award of National Business Certificate, National Technical Certificate (NTC), Advanced National Business Certificate (ANBC) and Advanced National Technical Certificate (ANTC).

Technical colleges provide specialized education and training in various vocational fields such as: Block laying and Concreting Works, Plumbing and Pipe Fitting, Carpentry and Joinery, Painting and Decorating, Electrical Installation and Maintenance Work, Radio and Television Repairs, Fabrication and Welding, Mechanical Engineering Craft Practices, Motor Vehicle Mechanics Works

Motor vehicle mechanic works is a vocational trade offered in the technical college, which involves the acquisition of scientific knowledge in design, selection of materials, construction, operation and maintenance of motor vehicles. Motor vehicle mechanic works was designed to produce competent auto mechanics craftsmen in various automobile trades such as repairs and maintenance of brake, transmission, engine, fuel, cooling and lubricating systems on a motor vehicle.(NABTEB,2011). Olayinka (2009) also posited that MVMW was designed to produce competent auto mechanics craftsmen for Nigeria technological and industrial development. .

Motor vehicle mechanics craftsmen are competent and skillful personnel that repair and maintain different brands of motor vehicles. According to Baba, Jacob and Issifu (2018), motor vehicle mechanics craftsmen are personnel that diagnoses

the problem of motor vehicle accurately and quickly which can save owners time and potentially a substantial amount of money. Motor mechanics craftsmen are expected to test, diagnose service and completely repair any fault relating to the conventional automobile assembly main units and systems to the manufacturers specification (NBTE,2001).

Motor Vehicle Mechanic craftsmen (MVMC) in the content of this study are those personnel who maintain and repair a wide range of vehicle including cars, buses and trucks among others. Their responsibilities include inspecting, assessing, repairing, diagnosing and maintaining the engine components of a motorized vehicle. Motor mechanics craftsmen employed for the purpose of directing and instructing the students on practical activities in the technical colleges' workshops.

Workshops are designated areas for the purposes of practical skill acquisition in technical colleges. Technical college workshop for motor mechanics, students engaged practical activities where they learn to diagnose, inspect, maintain, and repair vehicles. These workshops are equipped with various tools, equipment, and simulated or real vehicles to give students practical experience in working with different automotive systems. Motor mechanic workshops offered training in various areas, such as engines refurbishment, electrical systems, diagnostics, brake system, transmission systems and general vehicle maintenance.

Maintenance is crucial for keeping vehicles running smoothly..Okwelle, Beako and Ajie, (2017), stated that maintenance is a repair activity carried out on equipment, vehicles or other machineries to keep them unaltered,

and if altered, to restore them to their original state. Maintenance in the content of this study is the process at which motor vehicles parts get serviced or change the parts before they break down. The knowledge, altitude, competencies and abilities required by craftsmen for proper maintaining of motor vehicles is maintenance skills.

Maintenance skills involve the ability to identify troubleshoots, and repair issues in various system or machinery. These skills encompass knowledge of tools, equipment and techniques required to keep things in working order. In motor vehicle mechanic works, maintenance skills involve expertise in diagnosing issues, inspecting vehicles, conducting regular servicing, and repairing vehicles. This includes knowledge of engine systems, electrical components, brakes, and suspension and transmission systems.

Unfortunately, workshop craftsmen in technical colleges who supposed to carried out maintenance of different brands of vehicles seems to lack maintenance skills. Therefore, the study seek to identify the workshop maintenance skills needed by motor vehicle mechanics craftsmen in technical colleges in Ondo State.

Statement of the Problem

Despite the major role motor vehicle mechanics craftsmen play in the maintenance and repair of different brands of vehicles, there is a growing concern about the inadequate of workshop maintenance skills among majority of them.. This setback may be due to some factors such as lack of workshop maintenance skills, lack of exposure to modern diagnostic equipment, lack of modern workshop tools and equipment, poor maintenance training, and so on. Consequently, this may lead to substandard maintenance and repair or breaking down of a vehicle on the

road due to lack of competent motor vehicle mechanics craftsmen . Therefore, it is essential to identify and address the workshop maintenance skills needed by motor vehicle mechanics craftsmen in technical colleges in Ondo state, Nigeria.

Purpose of the Study

The main purpose of this study is to determine the workshop maintenance skills needed by motor vehicle mechanic craftsmen in technical colleges in Ondo state. Specifically, the study intends to:

- i. Identify the workshop maintenance skills needed by Motor Vehicle Mechanics craftsmen for diagnosing vehicle in technical colleges.
- ii. Ascertain the workshop maintenance skills needed by Motor Vehicle Mechanics craftsmen for performing routine inspection in vehicles in technical colleges.

Research Questions

- i. What are the workshop maintenance skills needed by Motor Vehicle Mechanic craftsmen for diagnosing vehicles in technical colleges?
- ii. What are the workshop maintenance skills needed by Motor Vehicle Mechanic craftsmen for performing routine inspection in vehicles in technical colleges?

Research Methods

The study adopted descriptive survey research design. A survey research according to Olaitan and Nwoke (1993) is one in which the entire population or representative sample is studied by collecting and analyzing data from the group through the use of questionnaire. The population for the study was 74 made up 18 motor vehicle mechanics work's teachers and 56

motor mechanics vehicle final year students of technical colleges in Ondo State.. The entire population was used, hence there was no sampling. The instrument for data collection was a structured questionnaire. The instrument was divided into three sections – A, B and C. Section A sought for information of the respondents, . Section B contained 20 items developed to find workshop maintenance skills needs by motor mechanics work craftsmen for diagnosing vehicles and . Section C consisted 20 items designed to find out workshop maintenance skills needs by motor mechanic works craftsmen for performing routine inspection in vehicle. The questionnaire response options were formulated based on 5-point Likert Scale. The response categories for sections B and C were Strongly Needed (SA), Needed (N), Undecided (U), Slightly Needed, (SN), Not Needed (NN). These response categories were assigned numerical

values of 5, 4, 3, 2, and 1 respectively. The data collected from the respondents were analyzed by using mean to answer the two research questions. The two null hypotheses were tested using the t-test at 0.05 level of significance. Based on the five point Likert scales, items with mean of 3.00 or above were regarded as needed while items with mean below 3.00 were regarded as not needed. A null hypothesis was accepted when a t-calculated value is less than the table t-value. Also the null hypotheses were rejected if the table t value is less than t calculated value.

Results and Discussions

Research Question 1: What are the workshop maintenances skills needed by motor mechanics works craftsmen for diagnosing vehicles in the technical colleges? The data for answering research question 1 are presented in Table 1

Mean Responses of the Respondents on the workshop maintenance skills needed by Motor Vehicle Mechanic craftsmen for diagnosing vehicle in technical colleges.
N = 74

SN	Item statements	X	SD	Remark
1.	Understanding engine components	4.01	0.80	Needed
2.	Familiarity with vehicle wiring	3.91	0.86	Needed
3.	Ability to use scanners	4.06	0.78	Needed
4.	Diagnosing brake related problem	3.87	0.88	Needed
5.	Identifying issues with shock absorbers		3.96	0.83 Needed
6.	Recognizing transmission issues		4.03	0.80 Needed
7.	Diagnosing heating and cooling system problems		4.01	0.84 Needed
8.	Identifying and fixing electrical	3.68	0.80	Needed
9.	Diagnosing problems related to fuel injection and delivery		3.79	0.84 Needed
10.	Diagnosing battery issues and replacing when necessary	4.02	0.85	Needed
11.	Checking and maintaining fluid levels for various system		3.91	0.88 Needed
12.	Noting symptoms accurately to pinpoint problems		3.96	0.76 Needed
13.	Diagnosing steering problems	3.91	0.84	Needed
14.	Using service records to aid diagnosis	3.88	0.80	Needed
15.	Identifying tire wear patterns and wheel related issues	4.10	0.81	Needed
16.	Troubleshooting electrical issues and circuits	3.96	0.87	Needed
17.	Assessing handing and alignment problems	4.02	0.81	Needed
18.	Identifying problems in fuel delivery and injection systems.	4.05		0.79 Needed
19.	Identifying abnormal noise or vibration	3.95	0.83	Needed
20.	Understanding issues related to spark plugs and ignition coils	3.90		0.88 Needed
GRAND MEAN		3.95		Needed

X = Mean, SD=Standard deviation , N= Number of Respondents

The data presented in Table 1 revealed that all the 20 workshop maintenance skill needs for diagnosing vehicles have their Mean value ranged from 3.68 to 4.06. This showed that Mean value of each item was above the cut-off point of 3.00, indicating that all the 20 workshop maintenance skills needed by motor mechanic works craftsmen for diagnosing vehicle in technical college. The table also showed that the standard deviation of

the items are within the range of 0.78 to 0.88, this indicated that the values of the respondents were not far from one another in their responses.

Research Question 2: What are the workshop maintenance skills needed by Motor Vehicle Mechanic craftsmen for performing routine inspection in vehicle in technical colleges?

The data for answering research question 2 are presented in Table 2:

Mean Responses of the Respondents on the workshop maintenance skills needed by Motor Vehicle Mechanic craftsmen for performing routine inspection in vehicle in technical college.

N = 74

S/N	Item statements		X	SD	
	Remarks				
1.	Ability to assess levels and conditions of engine oil Needed			4.00	0.79
2.	Check tire pressure, tread depth and overall tire condition Needed			3.98	0.84
3.	Examine brake pad, and brake lines		3.80	0.83	Needed
4.	Inspect battery terminals, check electrolyte levels Needed			3.86	0.81
5.	Check the condition and tension of belts in the engine compartment	4.03	0.78	Needed	
6.	Assess the cleanliness and condition of the air filter Needed			4.07	0.84
7.	Inspect exhaust pipes, mufflers, and catalytic converters Needed			3.96	0.83
8.	Examine shock absorbers, and struts		3.95	0.83	Needed
9.	Wheel alignment inspection	4.01	0.79	Needed	
10.	Check all exterior lights, including headlights, and break lights	3.56	0.85	Needed	
11.	Inspect wiper blades for wear and replace		4.03	0.83	Needed
12.	Check radiator, hoses, and thermostat for leakages Needed			3.87	0.78
13.	Assess transmission fluid levels and condition		3.95	0.89	Needed
14.	Ensure proper functioning if ignition components like coil and wires	3.98	0.84	Needed	
15.	Assess power steering fluid levels and condition		4.00	0.82	Needed
16.	Look for any loose, damage or improperly connected components throughout the vehicles	4.00	0.7	Needed	
17.	Conduct battery voltage and charging system tests Needed			4.10	0.81
18.	Check and adjust engine belts for wear and tension		3.97	0.85	Needed
19.	Test and replace bulbs as needed in the lighting system		4.01	0.77	Needed
20.	Inspect heating, ventilation, and air conditioning systems for functionality	3.89	0.80	Needed	
	GRAND MEAN		3.95	Needed	

The data presented in the Table 2 revealed that all the 20 workshop

maintenance skills have their Mean value ranged from 3.56 to 4.10. This

showed that the Mean value of each item was above the cut-off point of 3.50, indicating that all the 20 workshop maintenance skills were required by motor mechanic works craftsmen. The table also showed that the standard deviation (SD) of the items are within the range of 0.77 to 0.89, this indicated that the means values of the respondents were not far from one another in their responses.

Testing of Hypotheses

Hypotheses 1

There is no significant different between the mean responses of motor mechanic works teachers and motor mechanic works final year students on the workshop maintenance skills needed by motor mechanic works craftsmen for diagnosing vehicles.

Table 3

The t-test Analysis of the Mean Responses of the Respondents on the workshop maintenance skills needed by motor mechanic works craftsmen for diagnosing vehicles.

S/N	Item statements	X ₁	S ₁ ²	X ₂	S ₂ ²	t-test	Remarks
1.	Understanding engine components	3.90	0.81	4.04	0.77	0.81	NS
2.	Familiarity with vehicle wiring	4.09	0.71	3.97	0.92	0.65	NS
3.	Ability to use scanners	3.69	0.66	4.09	0.77	1.25	NS
4.	Diagnosing brake related problem		3.76	0.84	3.95	0.99	0.84
5.	Identifying issues with shock absorbers	3.53	0.82	3.86	0.69	1.27	NS
6.	Recognizing transmission issues	3.60	0.95	3.65	0.55	0.25	NS
7.	Diagnosing heating and cooling system	3.53	0.56	3.72	0.89	0.83	NS
8.	Identifying and fixing electrical	3.40	0.89	2.86	0.85	0.66	NS
9.	Diagnosing problems related to fuel						
	Injection and delivery	3.69	0.70	3.93	0.66	0.28	NS
20.	Diagnosing battery issues and replacing						
	when necessary	3.39	0.77	3.86	0.73	0.82	NS
20.	Checking and maintaining fluid levels for						
	various system	3.58	0.53	3.77	0.98	0.76	NS
12.	Noting symptoms accurately to pinpoint						
	problems	3.88	0.83	3.72	0.99	0.72	NS
13.	Diagnosing steering problems		3.78	0.68	3.60	0.67	0.38
14.	Using service records to aid diagnosis	3.81	0.79	3.43	0.78	0.55	NS
15.	Identifying tire wear patterns and wheel						
	related issues	3.66	0.83	3.65	0.69	0.45	NS
16.	Troubleshooting electrical issues and circuits	3.74		0.73	3.59	0.76	0.43
17.	Assessing handling and alignment problems	3.89		0.69	3.56	0.92	0.62
18.	Identifying problems in fuel delivery and						
	injection system	3.61	0.76	3.72	0.60	0.59	NS
19.	Identifying abnormal noise and vibration		3.77	0.69	3.78	0.78	0.45
20.	Understanding issues related to spark plugs						
	and ignition coils	3.51	0.95	3.59	0.75	0.51	NS
GRAND MEAN		3.69		3.72			

Data presented in Table 3 revealed that each of the 20 workshop maintenance skill had their calculated t-values

ranged from 0.25 to 1.27 which were less than t-table value of 1.98 at 0.05 level of significance and at 273 degree

of freedom (df). This indicated that there was no significant difference between Mean responses of motor mechanics works teachers and motor

mechanics works final year students on the workshop maintenance skills needed by motor mechanics works craftsmen.

Table 4
The t-test Analysis of the Mean Responses of the Respondents on the Workshop maintenance skills needed by motor mechanic works craftsmen for performing routine inspection in vehicles

S/N	Item statements	X_1	S^2_1	X_2	S^2_2	t-test	Remarks
1	Ability to assess levels and conditions of engine oil	4.34	0.85	4.04	1.08	1.52	NS
20.	Check tire pressure, tread depth and overall tire conditions	4.20	1.06	4.10	1.12	0.54	NS
3.	Examine brake pad and brake lines	4.27	0.82	4.08	1.14	0.07	NS
4.	Inspect battery terminals and check electrolyte levels	3.47	1.12	3.42	1.23	0.24	NS
20.	Check the condition and tension of belts in the engine compartment	3.85	0.87	3.93	1.02	0.50	NS
20.	Assess the cleanliness and condition of the air filter	3.86	0.90	3.92	1.02	0.50	NS
20.	Inspect exhaust pipes, muffler and catalytic converters	3.45	1.08	3.24	1.23	1.03	NS
8.	Examine shock absorbers and struts	3.70	0.895	3.80	0.88	0.56	NS
9.	Wheel alignment inspection	3.19	1.015	3.22	1.14	0.13	NS
10.	Check all exterior light including headlight and backlights	3.47	1.16	3.28	1.16	0.89	NS
11.	Inspect wiper blades for wear and replace	3.50	1.07	3.56	0.86	0.32	NS
12.	Check radiator, hoses and thermostat for linkage	3.43	1.11	3.52	0.99	0.45	NS
13.	Assess transmission fluid levels and condition	3.23	1.20	3.34	1.11	0.48	NS
14.	Ensure proper functioning of ignition components like coil and wires	3.72	1.15	3.64	0.94	0.41	NS
15.	Assess power steering fluid levels and condition	3.77	1.23	3.98	1.03	0.94	NS
16.	Look for any loose damage or connected components	3.58	1.32	3.27	1.35	1.21	NS
17.	Conduct battery voltage and charging system tests	3.26	1.29	3.18	1.28	0.35	NS
18.	Check and adjust engine belts for wear and tension	3.63	0.98	4.00	0.87	0.12	NS
19.	Test and replace bulbs	3.68	0.73	0.82	0.83	0.12	NS
20.	Inspect heating and ventilation systems	3.98	0.67	3.82	0.78	0.57	NS
GRAND MEAN		3.68		3.66			

Data presented in Table 4 revealed that each of the 20 workshop maintenance skills had their calculated t-values ranged from 0.07 to 1.52 which were less than t-table value of 1.98 at 0.05 level of significance and at 273 degree of freedom (df). This indicated that there was no significant difference.

Discussion of Findings

The findings of the study were discussed based on the research questions and answered and hypothesis tested. The finding of the study with regard to research question one revealed that the motor vehicle mechanic craftsmen needed workshop maintenance skills to diagnose vehicles in technical colleges. All the 20 items were found to be needed.

Finding of the study with regard to research question two revealed also

revealed that the motor vehicle mechanic craftsmen needed workshop maintenance skills to perform routine inspection on vehicle in technical college. All the 20 items were found to be needed.

Finding of the study with regard to hypothesis one revealed that there was no significant difference between Mean responses of motor mechanics works teachers and motor mechanics works final year students on the workshop maintenance skills needed by motor mechanics works craftsmen in for diagnosing vehicles in technical colleges in Ondo state. This indicated that calculated t-values ranged from 0.25 to 1.27 which were less than t-table value of 1.98 at 0.05 level of significance.

Finding of the study with regard to hypothesis two revealed that there was no significant difference between Mean responses of motor mechanics works teachers and motor mechanics works final year students on the workshop maintenance skills needed by motor mechanics works craftsmen for performing routine inspection on vehicles in technical colleges in Ondo state. This indicated that their calculated t-values ranged from 0.07 to 1.52 which were less than t-table value of 1.98 at 0.05 level of significance.

Conclusion

Based on the findings of the study, the following conclusions were drawn:

It is concluded that the identified workshop maintenance skills should be included into the curriculum of technical colleges programmes. Inclusion of the identified workshop maintenance skills into the curriculum will benefit the students in many ways. It will prepare them for self employment after graduation and therefore reduce youth unemployment.

Recommendations

Based on the findings of the study, the following recommendations were made:

1. All the workshop maintenance skills identified in this study should be used to train craftsmens and student of MVMW.
2. Government and administrators of technical colleges should organize seminar and workshop for motor mechanics works teachers and craftsmen on how to diagnose vehicles with On Board Devices(OBD).
3. Motor vehicle mechanics craftsmen in technical colleges should be exposed to some training/ programmes regarding worshop maintenance skills through in house training.

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COLLABORATION BETWEEN AGRICULTURAL SCIENCE TEACHERS AND EXTENSION AGENTS IN MANAGEMENT OF IN-SCHOOL YOUTH ORGANISATIONS IN EKITI STATE SECONDARY SCHOOLS

by

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Abstract

This study assessed the extent of collaboration between Agricultural Science teachers and extension agents in the management process of In-School Youth Organisation programmes in Ekiti State secondary schools. The study adopted a descriptive research design of the survey type. The population consisted of 772 respondents comprising of all the 697 teachers of Agricultural Science in all the 207 secondary schools in Ekiti State and 75 extension agents from the Ministry of Agriculture in Ado-Ekiti, Ekiti State. The sample for the study comprised of 252 Agricultural Science teachers and all the 75 extension agents. Data collected was analyzed using descriptive statistics to answer the research questions raised. Inferential statistics such as Students t-test and ANOVA were used to test the formulated hypotheses. All the hypotheses were tested at 0.05 level of significance. The finding of study revealed among others, that there is a significant difference in the mean response of extension agents and Agricultural Science teachers on the need for in-school youth clubs in agriculture in Ekiti State secondary schools. It was further indicated that there is a significant relationship between the roles performed by Agricultural Science teachers and agricultural extension agents and the management of in-school youth club in Ekiti State secondary schools. Based on the findings of this study, it was concluded that the most of the available in-school youth organization in secondary schools in Ekiti State are not functioning as expected. This is due to the series of challenges faced by the stakeholders in managing the clubs. Based on the findings of this study, it was recommended, functional in-school youth organization should be established in each secondary schools in Ekiti State.

Keywords: *Management, In-school youth organizations, Agricultural Science Teachers, Extension Agents and collaboration.*

Introduction

Agricultural science was introduced into secondary school curriculum to stimulate students' interest in agriculture at the junior

secondary school level and to further sustain their interest in agriculture at the senior secondary school level. Agricultural science in secondary schools consists of five integral

components or phases which include: classroom instructions, supervised agricultural experience programmes or students' practical, field trips, farm mechanisation and In-school youth organisation activities and clubs. The in-school youth organisation and clubs are supposed to serve as extra curricula activities to complement classroom instructions and stimulates students' interest in agriculture.

In-school youth organisations in Agriculture is an educational association or professional club with the aim of encouraging students of agricultural science to learn by doing, utilising problem solving approach and experimental learning situations to develop productive skills in agriculture and farming (Owolabi, 2021). The objective of the in-school youth organisation are to motivate students through activities that will stimulate their interest in agriculture, prepare students for further training in agriculture and provide students with agricultural information on new technological input which youths can transfer to their parents and utilise for self fulfilment and self reliance in Agriculture (Famiwole, Olaitan & Okorie, 2019). The emphasis is to encourage learning by doing, doing to earn and earning to live.

One of the prominent youth clubs in agriculture in secondary school used to be the Young Farmers' Club. Young Farmers' club is an organisation in which young people of about age nine to twenty-one years are given informal training and encouraged to learn about better farming and home making under the guidance of the agricultural extension personnel and local volunteer leaders. Members of the club carryout worthwhile projects and activities in farming, home making and community development (Ajayi, 2017). Young Farmers' Club is an informal voluntary

organisation meant for out of school youths. The members of the club are out of school youths who are aiming to become established farmers, old enough to form good habits, ideas, and appreciation related to farming by attending informal classes.

It was observed that only little has been achieved in the development of students' interest and entry level skills in agriculture through the one time existing Young Farmers' Club in secondary schools. Several reasons could be adduced for the little achievement in the development of students' interest and entry level skills acquired by secondary school youths' through the existence of the Young Farmers' Club. The Young Farmers' Club appears not to stimulate the interest of secondary school youths in Agricultural Science because the activities are not necessary complementary to classroom instruction in agricultural science and the planning is independent of Agricultural Science teachers (Famiwole, Olaitan & Okorie, 2020).

The Young Farmers' Club seems not to be surviving in schools due to absence of in-school youth organisations and activities in agriculture, ineffective policy and criteria to determine the club's framework, objectives, guiding principles, sharing authority and evaluation of performance of both the club and students' achievements. Also, there appears to be distinct communication gaps and no relationship between the extension agents in charge of the programmes of Young Farmers' Club and agricultural science teachers in secondary schools, and there seems to be no relationship between the programmes of Young Farmers' Club and agricultural science curriculum in secondary schools. The Clubs' activities also appears not to complement classroom instruction in

agricultural science in secondary schools, which is observed to have glaringly caused the partial non-involvement of teachers at the implementing and evaluation stages of the club. As a result of these, many students in secondary schools seem to have a poor approach towards agriculture as the consequences of the futility of the activities of Young Farmers' Club in the schools.

Protagonist of Vocational Agriculture have stressed that agricultural science curriculum in secondary schools should contain two essential agricultural education components which include classroom instructions and school based youth organizations in agriculture, (NUC, 2022). School based youth organisation is a professional organisation in which students of Agricultural Science in secondary schools are encouraged to learn by doing, utilise problem-solving approach and experimental learning situations to develop productive skills and competencies in agriculture and farming. The organization activities and programmes are to compliment classroom instructions, motivate the students and help them to develop interest and competencies in agriculture through interest stimulating activities and programmes in agriculture in secondary schools in Ekiti State.

It appears that, for an organisation in agricultural science to be functional and production oriented in secondary schools the club should not be organised in isolation of the teachers of agricultural science and the agricultural science curriculum. Agricultural Science teachers are professionals responsible for the implementation and management of in-school youth club in Agricultural Science in secondary schools. They are responsible for planning,

implementation and managing of the curriculum, school programmes and youth clubs in Agricultural Science. Adeyanju (2022) remarked that teachers of Agricultural Science are the best determinant of core content to include in the instructional unit for effective learning outcome than any other individual. This is supported by Famiwole and Kolawole (2013) that vocational education programmes in agriculture are as effective as the teachers of agriculture make them. Hence, a teacher's role as an implementer and manager of Agricultural Science programmes in the secondary schools should not be misunderstood. Other Agricultural stakeholders which include instructors from agro-allied companies and agricultural extension agents are supposed to work in collaboration with Agricultural Science teachers in implementing the programmes or activities of in-school agricultural youth organisation in secondary schools.

Agricultural extension agents are agricultural advisors employed by the government to assist adults in rural areas with methods of farming and home making. The agents help in youth development by assisting in the management of agricultural youth clubs, strengthening and supporting youth organisations. It is observed that both teachers and extension agents possessed related qualities that may aid their cooperation in managing Agricultural Youth Clubs and Societies in Agricultural Science in secondary schools.

The working together of the two major stakeholders could ensure the successful implementation and management of in-school youth clubs in secondary school. Collaboration between Agricultural Science teachers and extension agents seem not to be well defined or appear not to be

complementing each other in the planning, implementation and evaluation of youth clubs secondary schools in Ekiti state. Olaitan (2016) opined that for an organisation to be functional, there is the need for the individual stakeholders to cooperate and operate as a team for the purpose of encouraging team programme planning, evaluation process and develop good management strategies which will ensure a functional organisation that is capable of surviving in secondary schools. The main thrust of the study therefore, is to establish the extent of collaboration between Agricultural science teachers and extension agents in the management of in-school youth organisations in Agricultural Science in Ekiti State secondary schools.

Statement of the Problem

Agricultural science is taught in secondary schools as pre-vocational and vocational at both junior and senior secondary school respectively. The junior secondary school agriculture is to stimulate students' interest in agriculture through exposure to agricultural knowledge and practical skills while the senior secondary school curriculum is to further sustain the interest and orientate the students towards the fulfilling career in Agriculture through a youth organization in Agriculture (Olaitan, Okorie & Famiwole, 2020). It was observed that only little has been achieved in the development of students' interest and entry level skills in agriculture through the one time existing Young Farmers' Club in secondary schools. Several reasons could be adduced for the little achievement in the development of students' interest and entry level skills acquired by secondary school youths' through the existence of the Young Farmers' Club. The Young Farmers'

Club appears not to stimulate the interest of secondary school youths in Agricultural Science because the activities are not necessary complementary to classroom instruction in agricultural science and the planning is independent of Agricultural Science teachers (Famiwole, Olaitan & Okorie, 2020).

Good management makes modern organization perform since the youth club are based in school, it appears they are supposed to play the same key roles to ensure the clubs sustainability and productivity towards the students' independent survival after school. In the light of the highlighted problems, the study provided answers to the research questions with a view to proffering pragmatic measures that have remarkable influence on the collaboration between Agricultural science teachers and extension agents in the management of in-school youth organisations in Agricultural Science in Ekiti State secondary schools.

Purpose of the Study

The study is conducted specifically,

- i. To ascertain the existence of in-school youth clubs in agriculture in secondary schools in Ekiti State.
- ii. To examine the expected collaborative roles of teachers of Agricultural Science and extension agents in the management of in-school youth clubs in agriculture in Ekiti State.
- iii. To examine the collaborative roles of extension agents in the management of in-school youth organisations in agriculture in secondary schools in Ekiti State.
- iv. identify the challenges encountered in the management of in-school youth organisations in agriculture in secondary schools in Ekiti State
- v. identify the management strategies to be put in place to improve in-

school youth organisations in agriculture in secondary schools in Ekiti State.

Research Questions

The following research questions were raised to guide the study:

- i. Does In-School Youth Clubs in agriculture exist in secondary schools in Ekiti State?
- ii. What are the collaborative roles of teachers of Agricultural Science and extension agents in the management of In-School Youth Clubs in agriculture in Ekiti State secondary schools?
- iii. What are the challenges encountered in the management of In-School Youth Clubs in agriculture in Ekiti State secondary schools?
- iv. What are the management strategies to be put in place in the management of In-School youth Clubs in agriculture in Ekiti State secondary schools?

Research Hypotheses

HO1: There is no significant difference in the mean responses of extension agents and Agricultural Science teachers on the need for In-School Youth Clubs in agriculture in Ekiti State secondary schools.

HO2: There is no significant relationship among the roles performed by Agricultural Science teachers, Agricultural extension agents and the management of In-School Youth Clubs in Ekiti State secondary schools.

Research Methodology

The descriptive design of the survey type was adopted for this study. Survey design is suitable for the study because it has a wide range of scope and coverage, hence, generalisation is possible. Therefore, the design would

enable the researcher to collect data from sample and generalise its findings on the whole population.

The total population for this study consisted of 772 respondents comprising of all the 697 teachers of Agricultural Science in all the 207 secondary schools in Ekiti State and 75 extension agents in the Ministry of Agriculture in Ado-Ekiti, Ekiti State (Ekiti State Ministry of Education, 2022, Ekiti State Ministry of Agriculture, 2022). The sample size consisted of the 75 extension workers but 252 Agricultural Science teachers were selected using multi stage sampling procedure. Firstly, three (3) LGAs were sampled from each of the three Senatorial Districts in the state using random sampling method, thereby making a total of nine (9) LGAs. Secondly, seven public secondary schools were selected from each of the nine (9) LGAs making 63 schools using stratified random sampling technique. Thirdly, purposive sampling technique was used to sample four (4) Agricultural Science teachers in all the 63 schools, making a total of 252 Agricultural Science teachers. Finally, the total population sampling technique was used to sample 75 extension agents from the Ministry of Agriculture, Ado-Ekiti. In essence, the study consisted of 327 respondents.

The instrument used for collection of data was self-constructed questionnaire titled Level of Collaboration between Agricultural Science Teachers and Extension Agents Questionnaire (LOCASTEAQ). The questionnaire items were face validated to ascertain its suitability for use in data collection by an expert in this field. The reliability of the instrument was established using split-half reliability method. The instrument was administered on 20 Agricultural Science teachers and 10 extension

agents outside the sample and their scores was split into two equal parts. Cronbach's Alpha reliability test was used to determine its reliability coefficient which was 0.89 co-efficient. This means that the instrument was reliable for the study.

The research instrument was personally administered by hand to the sampled Agricultural science Teachers and Extension Agents in Ekiti State after obtaining permission to administer the instrument from the management of prospective sampled senior secondary schools and extension offices in Ekiti State. The complete filled collected questionnaires were decoded into statistical data package and analysed

Table 1: Percentage Response of Respondents on the existence of In-school Youth Clubs in Agricultural Science in Secondary Schools in Ekiti State

S/N		Yes		No		Rmks
		Frq.	%	Frq.	%	
1	Does in-school youth organizations/clubs exist your schools?	139	58.1	100	42.9	Existing

n=239

Data contained in Table 1 revealed that In-school youth organizations/clubs in Agricultural Science exist (58.1%) in secondary schools in Ekiti State. However, 42.9% of the respondents indicated that, it does not exist in their schools.

Table 2: The expected collaborative roles of teachers of Agricultural Science and extension agents in the management of in-school youth clubs in agriculture in Ekiti State secondary schools

S/N	Agricultural Science teachers should:	$\bar{x}$	SD	Remarks
1	Collaborate with the extension agents to set clubs' goals and objective	3.03	0.57	Agreed
2	Establish agricultural clubs in secondary schools.	2.27	0.72	Disagreed
3	Take students on field trip.	2.08	0.84	Disagreed
4	Plan club's programmes and activities.	2.21	0.77	Disagreed
5	Agricultural science teachers are expected to organize extracurricular activities for members.	2.29	0.73	Disagreed
6	Carry out practical agricultural science on school farms	2.98	0.61	Agreed
7	Evaluates students' activities regularly.	3.39	0.52	Agreed
8	Share opinions and ideas on how to effectively manage in-school youth clubs.	2.19	0.85	Disagreed
9	Agricultural Science teachers and extension agents should collaborate in implementing in-school youth clubs activities.	2.28	0.75	Disagreed
10	Extension agent should serve as resource person only	3.67	0.48	Agreed
	GRAND MEAN	2.47		

using descriptive statistics of frequency counts, percentage, mean and standard deviation and inferential statistics of t-test and ANOVA at 0.05 level of significance

Data Presentation, Analysis and Findings

Research Question 1: Does in-school youth clubs in agriculture exist in secondary schools in Ekiti State?

In answering this question, frequency and percentage of respondents on the exiting in-school youth clubs in agriculture in secondary schools in Ekiti State were computed and compared. The result is presented in Table 1.

Research Question 2: What are the expected collaborative roles of teachers of Agricultural Science and extension agents in the management of in-school youth clubs in agriculture in Ekiti State secondary schools?

n=312

Table 2 indicates that the mean ($\bar{x}$) scores ranges from 2.19 – 3.67 above the parameter mean scores of 2.50, showing that the respondents agreed with three (3) items and disagreed with seven (7) items. Respondents agreed ($\bar{x}$ = 3.67, SD= .48) that, extension agent should serve as resource person only. They disagreed ($\bar{x}$ = 2.08, SD= 0.84) that, Agricultural

Science teachers should collaborate with the extension agent to take student on field trip.

Research Question 3: What are the challenges encountered in the management of school youth clubs in agriculture in Ekiti State secondary schools?

Table 3: Challenges encountered in the management of school youth clubs in agriculture in Ekiti State secondary schools

S/N	Items	$\bar{x}$	SD	Remarks
1	Poor collaboration between agricultural science teachers and extension agents	3.27	.73	Agree
2	Lack of relationship between Young Farmer's Club programmes and agricultural science curriculum.	2.69	.58	Agree
3	Inadequate numbers of agricultural science teachers for practical agriculture	3.69	.71	Agree
4	Inadequate tools to work on the school farm	3.63	.65	Agree
5	Poor motivation of agricultural science teachers	2.29	.55	Disagree
6	Inadequate space within the school premises to carry out agricultural practices	3.56	.69	Agree
7	Problem of long vacation on club's projects	3.67	.63	Agree
8	No definite policy or guiding principles for operation of youth organizations.	3.27	.73	Agree
9	Inadequate remuneration for agricultural science teachers	3.03	.55	Agree
10	Poor funding and finance of youth organization projects in Agricultural Science in Secondary Schools	3.71	.65	Agree
11	Inadequate follow up of students after graduation	3.27	.73	Agree
12	Communication gap between agricultural science teachers and the extension agents	3.08	.59	Agree
13	Clash of interest between stakeholders in the management of In-school Youth Organizations/Clubs in Secondary Schools	3.93	.48	Agree
14	Inadequate time for agricultural science practicals on the school timetable.	2.19	.51	Disagree
15	Poor supervision of farm work.	2.32	.57	Disagree
16	Inadequate in-service training for teachers or agricultural science	3.63	.65	Agree
GRAND MEAN		3.55		

n=312

Table 3 shows that the mean scores ($\bar{x}$) ranged from 2.19-3.93. The parameter mean score was 2.50, indicating that the respondents agreed with eleven (11) items and disagreed with five (5) items. Respondent agreed that ($\bar{x}$ = 3.97, SD= .67) there was clash of interest between the stakeholders in the management of In-school Youth Organizations/Clubs in Secondary

Schools. They disagreed ($\bar{x}$ = 2.19, SD= 0.51) that there was inadequate numbers of agricultural science teachers for practical agriculture in secondary schools in Ekiti State.

Research Question 4: What are the activities involved in the management of in-school youth clubs in agriculture in Ekiti State secondary schools?

Table 4: The strategies to be put in place in the management of in-school youth organizations in agriculture in Ekiti State secondary schools

<i>S/N</i>	<i>Items</i>	$\bar{x}$	<i>SD</i>	<i>Remarks</i>
1	There should be effective policy statement on management of In-school youth organization in Secondary School.	3.69	.75	Agreed
2	Regular training and retraining of agricultural science teachers on youth clubs in agriculture.	3.26	.69	Agreed
3	Establishment of functional Agriculture clubs and organizations	3.03	.42	Agreed
4	Attracting students interest with agricultural exhibitions or shows.	3.67	.63	Agreed
5	Allocating enough time for youth clubs and programmes on the school calendar.	3.39	.50	Agreed
6	Regular evaluation of youth clubs programmes in secondary schools	3.01	.41	Agreed
7	Allowing students to benefit from the returns of the farm projects	2.13	.52	Disagreed
8	Provision of administrative support for agricultural science activities and programmes in secondary schools.	2.78	.63	Agreed
9	Provision of logistic and financial support for club programmes	2.74	.62	Agreed
10	Adequate supervision of farm work	2.98	.58	Agreed
11	Complementary of club programs with agricultural science curriculum.	3.56	.67	Agreed
12	Allowing competition on projects between youth clubs at local, state and national level.	3.13	.69	Agreed
13	A better working relationship should be worked out between the roles of the ministry of education and Agriculture.	2.59	.40	Agreed
GRAND MEAN		3.16		

n=312

Table 4 shows that the mean ($\bar{x}$) scores ranged from 2.13-3.69 of which the parameter mean score was 2.50, showing that respondents agreed with (12) twelve items and disagreed with (1) one. The most agreed strategy ($\bar{x}$ = 3.69, SD= .75) was that, there should be an effective policy statement on management of In-school youth organization in Secondary School in Ekiti State. They disagreed ($\bar{x}$ = 2.13,

SD= 0.52) that schools should allow students to benefit from the returns of the farm projects.

Test of Hypotheses

Hypothesis 1: There is no significant difference in the mean response of extension agents and Agricultural Science teachers opinion on the need for in-school youth clubs in agriculture in Ekiti State secondary schools.

Table 5: t-test Analysis of the extension agents and agricultural science teachers opinion on the need for in-school youth clubs in agriculture in Ekiti State secondary schools

	<i>N</i>	$\bar{x}$	<i>SD</i>	<i>df</i>	<i>T</i>	<i>P-Value</i>	<i>Remark</i>
Extension Agents	75	3.63	1.276				
Agricultural Science Teachers	252	2.87	0.382	325	1.354*	0.0024	Significant

P<0.05

Table 5 shows that the *df* is 325, *t-cal* is 1.354 and *p* value is 0.0024 at 0.05 alpha level of significance. Since the *p*-value is less than 0.05 alpha level, ($= < 0.05$), therefore, the null hypothesis is rejected and the alternative accepted. This implies that, there was a significant difference in the mean response of extension agents and Agricultural Science teachers on the

need for in-school youth clubs in agriculture in Ekiti State secondary schools.

Hypothesis 2: There is no significant relationship between the roles performed by Agricultural Science teachers, agricultural extension agents in the management of in-school youth club in Ekiti State secondary schools.

Table 6: ANOVA analysis showing the relationship between the roles performed by agricultural science teachers, agricultural extension agents in the management of in-school youth club in Ekiti State secondary schools

Source of Variations	SS	Df	MS	R-Cal	Sig.	Decision
Between Groups	21.3754	125	7.2894			
Within Groups	109.2847	300	5.8261	1.6384	0.059	Accept Ho

Source: Output of Data Analysis (2023)

Table 6 reveals the relationship between the roles performed by agricultural science teachers and agricultural extension agents in the management of in-school youth club in Ekiti State secondary schools. The table revealed that *r-cal* = 1.6384 and *P* value = 0.059 at 0.05 alpha level of significance. Since the *P* value > 0.05 , the null hypothesis was therefore accepted. This implies that there was no significant relationship between the roles performed by agricultural science teachers and agricultural extension agents in the management of in-school youth club in Ekiti State secondary schools.

Discussion of findings

The findings of the study showed that In-School Youth

Organizations in agriculture exist in secondary schools in Ekiti State. This is in line with the findings of Osundare (2018) who concluded in his study that In-school Youth Clubs in Agriculture are still in existence in secondary schools. On the contrary, Ajayi in Afolabi (2023) observed that the existing in-school youth organizations/ clubs in Agricultural Science are seemingly not well managed or operated in most secondary schools in Ekiti State.

Table 2 indicates that, Agricultural Science teachers and extension agents should Collaborate to set clubs' goals and objectives for effective management of in-school youth clubs in Agricultural Science in secondary schools in Ekiti State. This outcome agrees with the findings of Asogwa in Afolabi (2023) that extension agents collaborate with the agricultural

science teachers in impacting skills and knowledge requires to achieve the millennium goals in agriculture.

Table 3 indicates that, there is clash of interest between the stakeholders in the management of In-school Youth Organizations/Clubs in Secondary Schools in Ekiti State, however, inadequate time for agricultural science practical on the school timetable is not a general problem applicable to all secondary schools in Ekiti State. Oyesusi (2019) posited that the most challenging constraint affecting the sustainability of in-school youth club is non-availability of some farm tools and equipment. Also, Famiwole in Oyesusi (2019) concluded that inadequate availability of farm tools and funds affect the efficiency of both the Agricultural Science teachers and extension agents. Corroborating this, Afolabi (2023) concluded in his study that several measures such as availability of adequate and standard working tools and implementation for agricultural activities are to be put in place to improve productivity by the teachers of Agricultural Science.

Result in table 4 reveals that, there should be effective policy statement on management of In-school youth organizations in Secondary Schools in Ekiti State. Effective policy statement should be made by the ministry of Education and Agriculture in Ekiti State towards stimulating adequate contribution of Agricultural Science Teachers and Extension Agents towards effective management of in-school youth organizations in secondary schools in Ekiti State.

The findings in Table 5 revealed that there was a significant difference in the mean response of extension agents and Agricultural Science teachers on the need for in-school youth clubs in agriculture in

Ekiti State secondary schools. This outcome agreed with the conclusion of Oyesusi (2018) that there is a significant difference in the view of both Agricultural Science teachers and extension agents due to their different specialties. The result in Table 6 also indicated that there was no significant relationship between the roles performed by agricultural science teachers and agricultural extension agents in the management of in-school youth club in Ekiti State secondary schools. This finding is supported by Ajilosun (2016) that significant relationship failed to exist between the roles carried out by the Agricultural Science teachers and extension agents on the sustainability of in-school youth clubs. Though, Abayomi (2017) criticised this conclusion that the independent role of Agricultural Science teachers and extension agents significantly influence the sustainability of in-school youth clubs in Ogun State. Both Agricultural Science teachers and agricultural extension agents aim at imparting the required skills and knowledge to Agricultural Science students. Thus, this aim stimulates the existence of in-school youth clubs in Ekiti State secondary schools. The significant effect might be due to the constant practical classes that motivate the students to partake in the in-school youth clubs' activities.

Conclusion

School based youth organisation is a professional organisation in which students of Agricultural Science in secondary schools are encouraged to learn by doing, utilise problem-solving approach and experimental learning situations to develop productive skills and competencies in agriculture and farming. Based on the findings of the study, it could be concluded that in-

school youth clubs exist in secondary schools in Ekiti State. Also, it was established that the expected collaborative role of the teachers and extension agents is that agricultural extension agents collaborate with Agricultural Science teachers to take students on field trip. Furthermore, it was established that there is a significant difference in the mean response of extension agents and Agricultural Science teachers on the need for in-school youth clubs in agriculture in Ekiti State secondary schools. A significant relationship exists between the roles performed by Agricultural Science teachers and agricultural extension agents and the management of in-school youth clubs in Ekiti State secondary schools.

Recommendations

Based on the findings of the study, the following recommendations were suggested:

- i. Functional In-school Youth Organisations / Clubs should be established by teachers of Agricultural Science in each Secondary Schools in Ekiti State to stimulate and sustain students interest in Agricultural Science.
- ii. A viable working relationship should be developed between the roles of the ministry of education and ministry of agriculture in the operation of the In-school Youth Organization in Secondary School in Ekiti State.
- iii. There should be policy statement to ensure effective establishment and management of in-school youth organization in secondary school should be put in place by government at state and national level.
- iv. Effective management of in-school youth clubs should be included in the job description of Agricultural science teachers.
- v. The government at all levels should provide adequate funds and material resources needed to manage in-school youth clubs in agriculture in secondary schools.

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IMPACT OF CLIMATE CHANGE ON AGRICULTURAL PRODUCTIVITY ON SCHOOL FARMS IN NIGERIA

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Abstract

The paper reviewed the causes, consequences and impacts of climate change in the Nigerian agricultural sector. The paper found out that, notwithstanding the existence of modern agricultural technologies, climate change which occurs with different weather varieties hamper productivity levels of both crops and animals in recent time in the country. Although there is information about the negative impacts of climate change in the country, much of this information are not on the doorsteps of the rural agricultural producers due to minimal existence of adequately trained change agents. As Nigeria is currently experiencing increasing incidence of disease, declining agricultural productivity, increasing number of heat waves, unreliable weather patterns, declining rainfall in already desert-prone areas, these gave ways to paradigm shift in the agricultural sector especially in the rural communities. Due to these increases, there is decline in production of agricultural produce/products which is consequence of climate change. This paper recommends among other things that there is need for a systematic collaborative approach involving all the stakeholders - science experts and researchers, governments at all levels, policy makers, farmers associations, youths and women groups, private sectors: non-governmental and civil society organizations to work together in turning the critical challenges posed by climate change into opportunity/opportunities.

Keywords: Climate Change, Agricultural Productivity, Causes, Adaptation

Introduction

Climate change is one of the prevailing environmental problems in the world and has gained universal discourse in recent time because its effects are multi – faceted. It is a single problem which has given birth to numerous known issues such as sea level rise, ocean warming, increasing temperature, rainfall variability, increasing evaporation and increasing tropical storms among others. These effects have also metamorphosed into some impacts such as the decline in agricultural activities, drought, migration, health problems, crises among farmers and herds - men, flooding, erosion, hunger and poverty

among others and other numerous problems yet to manifest.

Concept of Climate Change

Weather is a key factor in carrying out agricultural productions, in spite of technological approaches and development such as use of inorganic fertilizers, modern land preparation and planting of early season crops, mechanization in farming, effective usage of agrochemicals, improved seed varieties, expansion of irrigation systems, genetically modified organism, among others. Weather is the short-term state of the atmosphere at a specific time and place in terms of

precipitation, temperature, wind, humidity, among others. The weather condition changes according to the weather of each location. The long-term manifestation of weather and other atmospheric conditions in a given area is called climate.

Climate is the general weather conditions in an area over a long period and one of the major influential factors in agriculture (Ani et al., 2022). It influences the type of crops cultivated at any specific location on earth, livestock farming and determines what types of land use are possible. Precipitation, temperature and sunlight have been noted as some influential climate factors that have direct effect on plants and animals farming and determine the spread of pests and diseases among other effects (Agbola and Fayiga, 2016; Osuji et al, 2023). Thus, climate is critical in agricultural crop cultivation and productivity.

The survival of agriculture is dependent on good climate, and both agriculture and climate are both inter-related because they both take place globally as recorded by Adejuwon, (2006). Nigeria is experiencing adverse climate conditions with negative impacts on the welfare of millions of people. Climate fluctuation is putting Nigeria's agricultural system under serious threat and stress. Nigeria's agriculture is mostly rain-fed, therefore changes in climate affects productivity. In Nigeria, varieties of food crops are produced and are all dependent on rainfall, so that where rainfall is abundant, rain-fed crops are planted and in drier parts of the country, crops that do not require much rainfall are planted.

According to Ngigi (2009) defined climate change as a change in climate that is attributable directly or indirectly to human activities, that alters the atmospheric composition of

the earth which leads to global warming. An Intergovernmental Panel on Climate Change (IPCC) in (2007) reported that climate change is a change in the state of the climate that can be identified (e.g., by using statistical tests) by changes in the mean and/or the variability of its properties and that persists for an extended period typically decades longer.

Climate change had been attributed to severity to changes in global warming. Climate change is considered as the most pressing environmental problem facing the globe today, affecting patterns of life and general living conditions. Climate change is a significant and lasting change in the statistical distribution of weather patterns over periods (that may range from decades to millions of years). It is usually caused by factors such as: biotic processes (such as humans, animals, etc.), variations in solar radiations received by earth, volcanic eruptions etc. Climate change has repercussions such as upsetting seasonal cycles, harming ecosystems and water supply, affecting agricultural farming systems and food production, causing sea-levels to rise etc.

Nonetheless, agriculture is very sensitive to weather and climate and depends heavily on water, land, and other natural resources affected by climate (Gowda et al., 2018; Anabaraonye et al., 2022). Climate change has both positive and negative effects. For instance, while it could lengthen the growing season or encourage multiple cropping in some regions due to increase in rainfall, it could also make agricultural practices more difficult in others due to high temperatures (Odenkule, 2014; Adamaagashi et al, 2023). Thus, a significant cost of the damage caused by climate change impacts is mostly felt in the areas of agriculture.

According to Mba et al. (2020), the combined effect of food crisis and the global financial downturn has forestalled progress in rural development as a result, leading to high hunger and malnutrition trends.

Studies have revealed that high rainfall, desertification and flooding are extreme climatic conditions that adversely affect food production (Enize and Agala, 2023). In addition, productive agriculture is important to feed the increasing population and for sustainability of modern civilization, but it has been affected by climate change. Given the impacts of climate change in agriculture, its study is important, because the livelihood patterns of millions of people are dependent on agriculture and it is on this record that agriculture is the mainstay of the Nigerian economy.

Major Forms and Causes of Climate Change

According to Botkin and Keller (2010), the phenomenon of climate change is linked to both natural and human causes' i.e., natural events and human activities are believed to contribute to the increasing climate change. Primarily, climate change is caused by increase in greenhouse gases and even changes in ocean currents among others. Due to nature of science, not every single detail is ever totally certain and not all questions are yet to be answered. Below, are some of the causes of climate change and they include: -

- i. **Changes in the earth orbits:** changes in the shape of the earth's orbit and precession affects the amount of sunlight received on the earth surface.
- ii. **Changes in the sun's intensity:** changes occurring within or inside the sun can affect the intensity of sunlight that reaches the earth's surface.

The intensity of the sunlight can cause either warming (for stronger solar intensity) or cooling (for weaker solar intensity).

iii. **Volcanic eruption:**

Volcanoes can affect the climate because they can emit aerosols and carbon dioxide into the atmosphere.

- **Aerosol emissions:** volcanic aerosols tend to block sunlight and contribute to short term cooling. They do not produce long term changes because they leave the atmosphere not long after they are emitted.
- **Carbon oxide emission:** Volcanoes also emit carbon dioxide (CO₂), a greenhouse gas which has a warming effect. The level of carbon dioxide (CO₂) has risen since the last past millions of years.

The human factors that emit large amounts of greenhouse gases includes: industrialization, burning of fossil fuel, gas flaring, urbanization, changes in global patterns of land use and agriculture. Furthermore, human activities that reduce the amount of carbon sinks as reported by (IPCC, 2007, and Nzeh, 2008) are deforestation, alterations in land use, water pollution and agricultural practices. These human activities have been proven to contribute to the ongoing climate change in Nigeria.

Effects and Consequences of Climate Change

These identified are the major effects according to Nzeh et. al. (2016):

- a) Effect of climate on Farm Operations
- b) Effect of climate on Farmers
- c) Effect of climate on Farm Productivity

- d) Climate change and its effects on Crop Production
- e) Climate change impacts on Animals

a) Effect of climate on Farm Operations

Farming operations mean plowing, cultivating, planting, harvesting, and similar operations routine to most farms and that are performed on a farm. Climate change affects planting and harvesting periods. Due to this, there are occasional shifting seasonal rainfall patterns and severe precipitation events and flooding, delay planting and harvesting of plants. Climate change has effects on soil water balance which leads to changes of soil evaporation and plant transpiration; consequently, the crop growth period may shorten in the future, causing crops yields to decrease according to Nzeh et al, (2016). Climate change also decreases the crop rotation period, so farmers` needs to consider varieties sowing dates, fertilization levels when planting crops. Challenges when harvesting due to excessive moisture on the farm, farm output is affected when crops that are ready to be harvested or about to ripen, get soaked in excessive rainfall (Adams 2019).

b) Effect of climate on Farmers

Majority of the rural population in Nigeria survive through the production of agricultural products. Drying up of lakes, streams among others affect fishing. Also crops that are dependent on rainfall are affected. Climate change is a big threat to Nigerian food security, affecting both subsistence and commercial farming. Climate change causes an increase of diseases and pests, thereby declining agricultural production. Declining rainfall in northern areas of Nigeria is causing increasing desertification. This is supported by (Nzeh et al, 2016) that

the former food basket of the nation is now empty and people in the coastal areas who used to depend on fishing have their livelihoods destroyed by the climatic changes. As reported by Ikpi (2010), the increasing effects of climate change in agricultural production have led to the migration of people from rural areas to urban areas. This is so because, people who used to depend on agricultural production have been disappointed and so they have to look for better jobs or means to survive.

c) Effect of climate on Farm Productivity

Climate change has significant effects on farm productivity, influencing crop yields, livestock health and overall agricultural output. As reported by Ikeme (2009), Nigeria is currently experiencing increasing incidence of disease, declining agricultural productivity, increasing number of heat waves, unreliable weather patterns, declining rainfall in already desert prone areas, in the north causing increasing desertification decreasing food production in central regions and destruction of livelihoods by rising water in coastal areas where people depend on fishing and farming. Climate change may change the types, frequencies and intensities of various crops and livestock pests, also the availability and timing of irrigation water supplies and the severity of soil erosion, Challinor and Wheeler (2008). The qualities of grasses are affected by higher temperatures, which may lead to drying up of grasses, thereby reducing the nutritional values of livestock feeds.

d) Climate change and its effects on Crop Production

The most immediate consequence of drought is a fall in crop production, due to inadequate and

poorly distributed rainfall. Farmers are faced with harvests that are too small to both feed their families and fulfil their other commitments. A lack of rainfall can cause entire crops to fail or result in a very small crop, even for farmers who irrigate their fields (Adams, 2019). In turn, low crop production leads to losses in other industries that rely on agricultural products in order to stay in business. The drought has led to increased prices for hay, feeds and even grocery produce.

e) Climate change impacts on Animals

There have been some notable and significant impacts of climate changes on livestock production. According to Nzeh et al, (2016) there are two types of effects which are; Direct and Indirect effect. Direct effect is the constant exposure of animals to high temperatures, which causes reduction in growth and productivity, decline in feed intake, weight loss, etc. For instance, when cattle are under heat stress, they are subjected to the following conditions: Reduced grazing time (because animals may be seeking shade). Reduced feed intake. Indirect effects the quantity and quality of forage available to the animals is determined by climate. In high rainfall areas, plants grow faster. In arid regions or areas, lack of rainfall limits plant growth. High temperature and humidity provide a favorable breeding environment for external and internal parasites, fungi and bacteria.

Climate Change Adaptation Issues

Climate change adaptation refers to adjustment in ecological, social, or economic systems to reduce the negative or enhance the positive impacts of climate change. Numerous and various conditions will dictate the extent of adaptation. According to

Nzeh et al, (2016), climate change adaptation aims at mitigating and developing appropriate coping measures to address the negative impacts of climate change on agriculture. An important limitation to the effective adoption of climate change information in Nigeria's agricultural sector is the lack of a comprehensive baseline. Given the different interests, risk and resources faced by various stakeholders in agriculture, there is likely to be an extensive typology of adaptive responses that may be appropriate for different agricultural zones. The different types of farming systems, tenure system, access to financial resources, level of skills, extent of support (i.e., from extension agents) etc. also can affect adaptations to climate change.

Climate change adaptation is increasing on the agenda of researchers, policy makers and program developers who are aware that climate change is real and threatens to undermine social and ecological sustainability.

Measures to address the negative impacts of Climate Change in Nigeria

The following are the major solutions to the challenge of agriculture due to climate change as reported by Adams (2019):

- i. Provision of a plentiful supply of clean and cool drinking water for livestock during drought and excessive heat
- ii. Water management during drought is also necessary for some crops such as rice and vegetables to thrive well
- iii. Adequacy and accuracy of weather forecast to enable proper preparedness of farmers towards the next season

- iv. Suitable shade or shelter is required for livestock during the period of high rainfall
- v. Agricultural funding for research and technology development
- vi. Provide access to high quality forage
- vii. Trade Liberalization and Market
- viii. Development Funding and infrastructure development
- ix. Consistency in government policy

Conclusion

It has been discussed that farmers (mostly in the urban areas) that their awareness on weather patterns is changing as manifested in increasing flooding and changes in rainfall patterns. Others are on increase in temperature, high incidence of pests, diseases and weeds and even decrease in crop yields among other incidence. Meanwhile, their understanding of the concept of global climate change with regard to greenhouse emissions, ozone layer depletion etc. is still limited. It is therefore necessary that they have full knowledge of what climate change really is as it is perhaps the most serious threat to the fight against hunger, malnutrition, diseases and poverty in especially in Nigeria where its negative effects on agricultural production lead to more increase in the poverty level of the farmers at both urban and rural areas. It is therefore necessary for us to understand the knowledge of climate change and the best way to adapt to climate change depending on agricultural zones. However, some solutions have been proffering to these negative effects of climate change on agricultural production, this includes: Preparedness of farmers towards the next season, Adequacy and accuracy of

weather forecast, Availability of veterinary doctors, Agricultural funding for research and technology development, Trade Liberalization and Market Development, Funding and infrastructure development and Consistency in government policy.

Recommendations

Based on the issue discussed in this presentation, the following are recommended;

1. Mainstream climate change adaptation considerations into national agricultural policies and strategies.
2. Agricultural productivity can be increased and sustained by developing agricultural technologies that are environmentally sensitive.
3. Strengthen agricultural extension services to support farmers in adapting to climate change.
4. Farmers' access to loans and grants to enable them scale up their land holding as well as engage in mechanized farming or use new agricultural technologies to boost their productivity.
5. Involvement in Climate Smart Agriculture (CSA) such as small-scale irrigation, conservation agriculture, agroforestry, integrated pest management and integrated crop-livestock systems, that enhance resilience to climate change while improving productivity and sustainability.
6. Subsidies in the areas of improved climate change-resistant plants/fertilizers by the government. These plants can withstand the shock caused by prolonged dry season or delayed rainy season.
7. Collaborate with international organizations to access climate change funding and expertise.

8. Provide farmers training on climate-resilient agricultural practices.
9. Establish climate information services to provide farmers with accurate climate data.

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ACCOUNTING SKILLS REQUIRED BY GRADUATES IN MEETING THE EXPECTATIONS OF EMPLOYERS

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Abstract

This study investigates the emphasis placed on technical and generic skills developed during undergraduates accounting courses from both graduates and employers perspectives. It is motivated by two issues. Calls by the accounting profession and international education committees regarding the professional adequacy of graduates. The result of the work will bridge the gap between the employer and employee by redirecting the committee necessary for accounting curriculum to refocus, remodel and redirect the syllabus or course of outline given to employee in their undergraduate days in order for them to meet up with the challenges of employment and the employers will find them worthy of being given necessary tasks to be accomplished. The topic of this study is accounting skills required by graduates in meeting the expectations of employers. Research has shown that the skills required of accounting graduates are not possessed and these are making employers to cry loud of the inadequacies and deficiencies observed during the course of their relationship with employees. The accounting graduates cannot perform salient things in the course of work such as data analysis and interpretations, Digital literacy and creativity, Global perception and cultural awareness, emotional intelligence and self-awareness, project management etc. New global business model and the digital age have shifted expectations of the work of accountants. Over 20 years, many accounting graduates felt comfortable claiming job success was largely attributed to the level of specialist knowledge (technical skills) acquired by the accountant in their business roles. With the passage of time, more recent studies have challenged the assertion that technical skills rank above those generic skills to the extent that where many now claim technical skills are presumed and it is the transferable generic skills that are associated with career success. The results revealed that existing undergraduates programme are failing in attempt to provide a broad-based general education together with a specialized professional education to meet the needs of employers of accounting graduates. The finding from this study suggests that employers regard technical skills as presumed in accounting graduates that the more quality for employability and career advancement.

Keywords: Accounting Skills, Employers, Generic Skills, Digital literacy

Introduction

The context and dynamics of the global business environment has resulted in changes in the skills set required by accountants seeking to add value for their clients. These new business models have meant the

horizon and scope of business is no longer limited by national boundaries. As suppliers of business information the international business environment has implications for accountants as 'knowledge professionals' helping to drive

businesses forward. Many corporate entities now seek business opportunities in the global market place. Changing markets and advances in technology have manifested themselves in rapid changes for all stakeholders where business practices, markets and capital adjust and/or move as part of a relentless quest for marginal revenue.

In times of such change and development few would deny that the role of the traditional accountant as a mere score keeper is no longer a viable contributor to business. The changing role of the accountant has seen many commentators over the last 20 years from around the world criticise the skills set developed by students as graduates of under-graduate business courses. Some of the most vocal critiques have come from calls by accounting education committees in the USA. These observations in the USA have been mirrored by recommendations in Australia by professional accounting bodies. Collectively, these groups have called for change in the way in which accountants are educated. The need for change is based on a number of deficiencies identified in the skill sets that graduates typically bring to the workplace. see, CPA Australia, 1996; 2005; and other commentators, Henderson, 2001; Mathews, Jackson and Brown, 1990; Birkett, 1993; ICAA, 1998a, 1998b; 2001).

There is some consensus which suggests that the skills of knowledge professionals cannot be nurtured efficiently in university courses where the curriculum is dominated by a raft of specialised technical skills. Some argue that requisite skills required by tomorrow's business leaders will include transferable technical skills along with generic, professional, ethical, and lifelong learning skills. 'Generic skill' as a label appears to be

problematic as its definition has evolved in the literature over time and lacks precision. In the past the term generic skills was broad in that it was usually associated with those skills developed outside of the 'technical curriculum' and included, for example, general writing and interpersonal skills. (Bennett, Dunne and Carre, 2000; Lucas, Cox, Croudace and Milford, 2004; Whitefield and Kloot, 2006).

More recently the scope of the term generic skills has expanded to emphasize relevance to graduate outcomes in terms of the world of work and, more specifically, employability (Barrie, 2004). Articulated the current trends and the use of terms within the discourse when he wrote of more recent developments in the literature which called for professionals to be more generalist with specialist knowledge. He went further to cite examples of job descriptions that seek accountants with specific industry knowledge along with a range of generic skills which enable them to think 'outside the box'. The mixture of skills is seen as being necessary by employers as it helps them solve the diversity of business challenges. This raises the issue of whether there is convergence between accounting graduates' skills and skills sought by employers of graduates. This in turn raises two important questions: first, is there divergence between graduates and employers in terms of the skills developed in accounting courses? Secondly, if this is indeed the case, how do universities provide the accounting profession with suitably qualified graduates.

A review of the literature suggests few studies have undertaken a systematic review of this divergence, to the extent where the skills which employers deem important are compared with those skills which

graduate accountants perceive to have been provided in their undergraduate accounting studies. To address this paucity in the literature, this study reports on accounting graduates' perceptions of the level of preparedness for employment of their attribute set acquired in their university studies. This investigation subsequently compares and contrasts the graduates' perceptions of skills developed in undergraduate studies and employers' perceptions of the desired graduate accountant's attribute set, in terms of convergence and divergence of skill sets, (Albrecht and Sack, 2000; Henderson, 2001)

Accounting Skills Required Accounting graduates

New global business models and the digital age have shifted expectations of the work of accountants. Over 20 years ago many accounting graduates felt comfortable claiming job success was largely attributed to the level of specialist knowledge (technical skills) acquired by the accountant in the business role. With the passage of time, more recent studies have challenged the assertion that technical skills rank above those generic skills to the extent where many now claim technical skills are presumed and it is the transferable generic skills that are associated with career success. Collectively the authors of these studies have lamented calls by employers generally, who argue that accounting education has failed to deliver suitably qualified graduates to meet their needs. The extent of the problem is largely manifest in the notion that graduates do not possess important generic skills. This skill set typically includes mastery of communication, teamwork, and leadership qualities.

Following on from the earlier studies which identified the paucity of

the generic skills displayed by accounting graduates, a plethora of more recent investigations examined ways in which generic skills are best developed during undergraduate courses. Typically, these commentators have challenged educators to revisit their pedagogy and have questioned the relevance of course content (Tempone and Martin, 2003).

In the light of the preceding discussion it is clear that the general debate centres on the premise of researchers, practitioners and professional bodies that generic skills and job success in accounting are explicitly linked. Furthermore, some influential stakeholders have 'flexed their muscle' to ensure that the actual development of generic skills are clearly articulated in undergraduate course guides and taught within undergraduate accounting courses. One example is that of CPA Australia which, with 110,000 members, requires universities as part of their professional accreditation—to report how they incorporated generic skills into their courses using a generic skills matrix (http://www.cpacareers.com.au/study_options/acc_pol_guide.as). Consistent with this line of thinking, universities have developed policies that attempt to promote educational excellence and deliver business savvy graduates with the intellectual capacity required to make a contribution to society. An example of such a policy is one by Deakin University, Australia. The Deakin Advantage seeks to develop scholarship in technical skills in related disciplines, as well as skills and personal qualities which will serve graduates in their working lives beyond graduation.

The primary qualities identified in the Deakin Advantage aim to promote generic skill development consistent with those required of

various stakeholders. Clearly, such directives and policies demonstrate a will to develop a desired skill set for graduates which encompasses inter alia, lifelong learning, technical skills training, along with oral, written and interpersonal communication skills as well as exposure to organisational skills and technology. Further to these skills, some researchers have noted the rise in prominence of ethical behaviour in the desired skill set and reported the importance of professionalism and ethical conduct in a range of discipline areas. (Barrie, 2004). Howieson (2003)

According to Dr. Olaoye 2015, the following are the skills, graduates should further seek for:

- Communication skills
- Team work and collaboration skills
- Problem-Solving and analytical skills
- Time management and organizations skills
- Leadership and motivation skills
- Adaptability and flexibility
- Critical thinking and creativity
- Digital literacy and technical skills
- Data analysis and interpretations
- Global perception and cultural awareness
- Emotional intelligence and self awareness
- Project management
- Business acumen and commercial awareness

Promoting Ethical Behaviour as Part of Accounting Skills

The spate of high profile corporate collapses in the USA and other parts of the world have seen commentators challenge the role of accountants and their ability to act in the best interest of broader society (Leitsch, 2006). Employers have responded by revisiting their skill preference set to incorporate high

standards of ethical conduct on the part of their employees. Practical necessity brought about by changes in legislative pronouncements has meant that unacceptably low standards of ethical behaviour can leave corporate managers exposed to litigation and severe penalties.

In an effort to raise the standard of ethical reasoning by graduates, a suggested renewed emphasis in teaching ethics in accounting courses has the potential to restore credibility to the accounting profession. Clearly, researchers are of the unified opinion that accounting educators and university curriculum have for too long overlooked the need for heightened ethical conduct as a core graduate skill. Evidence that the employee market place is changing regarding the level of moral reasoning is supported by the findings of the British Columbia Business Council in its biennial employee skills survey. In the 2002 survey results from employers showed 'ethical and honest' behaviour ranked fourth, whereas two years later (2004), honesty and ethics climbed to the highest ranking.

Despite the efforts of various stakeholders within higher education to develop generic skills, some have argued that it is unrealistic for universities to guarantee that graduates will possess the necessary generic skills to meet the demands of employers (Lucas et al., 2004; Cranmer, 2006). More specifically, argued that, at best, universities should only guarantee that students have the opportunity to learn and develop generic skills and abilities during undergraduate study. Studies such as Cranmers (2006), examining the university sector's contribution to the development of generic skills (identified in the UK as employable skills), casts doubt on the assumption

that these skills can be effectively developed within the classroom.

Adding to this debate a study by Robley, Whittle and Murdoch-Eaton, (2005), examined alternate pedagogy of 'embedding' and 'in parallel' (generic) skill development within a medical programme of study. They concluded that the embedded approach with appropriate skills development mapping was the superior skill developmental approach. By way of contrast Cranmer (2006) suggests that academic efforts to teach employable skills are at best producing mixed results and therefore resources would be better utilized in increasing employment based training and work experience for recent graduates. Indeed, some universities offer accounting courses that include, as part of their core, a period (up to 12 months) of practical placement. It is envisaged that this exposure to the work environment assists in the development of a range of skills including technical and generic skills. The notion that it is difficult to develop generic skills in a university setting is a view that would seem to be supported by the work of Lucas et al (2004). Who reported the results of a qualitative study in the UK, claimed that generic skill development is a tacit process, developed over life and as such it is best not developed in standalone modules.

They went further to claim that 'consequently the concept of 'skills development' in the sense in which it has been adopted by UK higher education has yet to be fulfilled within the experience of students. Barrie, S. C. (2004) A research-based approach to generic graduate attributes

Stakeholders Expectations

The preceding discussion identifies a diversity of stakeholder needs, where universities for their part

'produce' accounting graduates to the best of their abilities and within resource constraints. Once students have progressed through their course, employers seek 'work ready' graduates who are able to add value to their business. Adding an additional layer of complexity to this relationship is heightened competition by universities for school leavers. Competition for commencing students leaves universities that offer accounting majors struggling to find the best students as some students are drawn to alternative business majors (Albrecht and Sack, 2000). Researchers have noted that reduced demand for accounting courses in some countries is a product of many factors including an accounting curriculum that is outdated and unable to prepare students to be future business leaders.

In recognition of this reality, shared concern over the last 20 years has seen an array of accounting education change initiatives, which have attempted to address the problem. In Australia, for example, the seminal work of Mathews et al. (2010) saw a thorough review of the (then) 49 publicly funded institutions and their ability to deliver competent graduates to a rapidly changing business environment. Using a range of qualitative and quantitative data the findings of the Mathews report recommended, inter alia, additional resources for the cash strapped sector and the need to realign the range of generic skills developed in accounting programmes. Sadly, with the passing of more than 15 years, some commentators are still wondering why many of the Mathews reforms have not made their way into government policy. This is not to say that nothing has been achieved, but rather educators and universities seem to chase an evolution of systematic

change where the educational environment remains at least one step behind employment market needs.

As students and employers are key stakeholders in the future of the accounting profession this investigation has a dual focus. First, it seeks to examine which skills recent accounting graduates thought were important to acquire in their undergraduate studies in order to achieve success in the accounting profession. Specifically, the study re-examines some of the issues raised by the Mathews Report, particularly those related to the emphasis placed on technical and generic skill development in undergraduate accounting courses from the perspective of recent graduates. *Education for Business*, 76(4), pp. 193–198.

Convergence and Divergence Views on Accounting Skills

Most business schools around the world would include somewhere in their mission statement the desire to educate graduates to a level where they meet the requirements of their profession (in this case the accounting profession) and needs of potential employers, that is to be ‘work ready’. To understand more fully the implications of this relationship the scope and purpose of this study is to identify and report on accounting graduates’ perceptions of the level of preparedness for employment of their skill set, largely acquired during their time at university, Clanchy and Ballard (1995) argued that, at best.

Comparing and contrasting graduates’ and employers’ perceptions of the desired graduate accountant’s inconclusiveness. It is evident that the expectations of employers in terms of the skills required from graduates are not in line with those skills developed in university.

It could be argued that graduates perceived that there was sufficient emphasis placed on these technical skills in their courses. Employer representatives also believed that graduates were sufficiently prepared in terms of these technical skills to commence work as a graduate accountant. These were the only two skill areas of convergence. Although graduates also viewed computer skills as being sufficiently emphasised, employers were not as preoccupied with this technical skill, thus it was labelled as a source of divergence between the two groups. In making this assertion, it should be noted that feedback from some employers indicated that the organisation was prepared to provide training specific to their business needs in terms of computer skills and applications, Clanchy and Ballard (1995)

The generic skills emphasised by employers were team skills, leadership potential, verbal communication and interpersonal skills. Research has also shown a clear gap between graduate perceptions of skills acquired in their university studies and employer expectations. There would appear to be divergence between the development of generic skills in undergraduate courses and the emphasis placed on the acquisition of these skills by employers. Overall, there were no generic skills that provided convergence between accounting course emphasis and employers’ expectations.

The previous analysis has demonstrated that graduates perceived that there was an under-emphasis on generic skill development in their degree studies. (Lucas et al., 2004) This is a seemingly problematic finding in this study given that key stakeholders (including, educators, employers and professional accounting bodies) are unified in their call for the

greater development of such skills in graduates, (Lucas et al., 2004)

Sills Required for Career Advancement

In an effort to understand more comprehensively the importance of generic skills required by graduates, additional analysis was undertaken to test the importance that recent graduates placed on technical and generic skills to advance their careers. The purpose of this analysis was to test the importance of the generic skills for graduates and, as such, may lend further support to a review of the academic and professional pathways to develop such skills. (Albin and Crockett, 2011)

Interestingly, technical skills in the form of 'key accounting and associated skills' ranked fifth in terms of skills for career progression well below the two more frequently cited skills of 'communication' (ranked first) and 'problem-solving' skill (ranked second) categories. Therefore, it would appear that graduates perceive various generic skills as being amongst the most important qualities required for a successful accounting career. (Albin and Crockett, 2011) This finding concurs with those from other studies which have found that the accounting profession, which was once driven by a body of specialist technical skills, has now moved on, where technical accounting skills have now given way to a broader more generic skills set.

In a similar vein, Opinions of graduates have it that ethical reasoning is ranked relatively low in importance by graduates for desired skills for career progression. This finding is a little bewildering as a number of other studies have reported the rise to prominence of ethical values as a desired skill since the spate of high profile corporate collapses (Earley and

Kelly, 2004). Thus, it appears that recent graduates see the value of emphasis on ethical reasoning, relative to the other skills, as being less important. This finding lends some credibility to the findings of Eynon and Stevens (2016) who suggested that the empathy of accounting students toward moral reasoning is lower than those of other graduates. Further, this finding is somewhat disturbing as some of today's graduates may well be tomorrow's business leaders and, in view of recent well documented corporate failures, they need to be made aware of the notion that ethical reasoning is a vital skill for the future of business

Conclusions

The study reveals differences between what graduates feel is taught in their university course and the skills required for career progression when compared with the skills employers are seeking in graduates. The nature of this divergence illustrates that there needs to be greater emphasis on generic skills as preparation for employment in accounting. The results also reveal that existing undergraduate programmes are failing in attempts to provide a broad-based general education together with a specialised professional education to meet the needs of employers of accounting graduates. The findings from this study suggest that employers regard technical skills as presumed in accounting graduates and it is the generic skill development in graduates that are the more veiled quality for employability and career enhancement.

If this were the case, reduced pressure on the curriculum would allow universities to refocus their energies on a more broadly- based course structure that enhances the educational experience and the

development of generic skills of accounting graduates. If this approach were adopted accounting education would take on two distinct phases. During the first phase, at university, the primary objective of the course would be to 'educate' and as such develop a range of generic skills. In contrast phase two, largely administered by the professional accounting bodies would be to 'train' graduates. It is during the training phase that students would learn a range of technical skills applicable to the accounting profession. If this holistic model of accounting education were adopted students would be firstly educated and subsequently trained. As a result of the realignment of accounting education between universities and professional bodies, it may well be that accounting graduates educated in this manner would be better equipped to meet the demands of employers and the market place.

Recommendations

The following recommendations are made:

1. People with structured work experience and employer of labour should be involved in degree course design and delivery. This can be done when the committee for curriculum planner is set up and should be included
2. Some Accounting skills for self development and business growth are best developed outside the university setting and nurtured over time. Skills such as data analysis, emotional intelligence and self awareness, business and Project management etc should be sought after at Accounting Professional bodies Centre
3. Other possible ways that should be investigated in a collaborative

fashion, to develop further the skills of new graduates.

4. Moving technical accounting skills and some educational requirements to the education brief of the professional accounting bodies is also recommended as solutions to the problems of skills deficiencies in graduates. Professional bodies like ICAN, ICAA, CPA etc will be ready to incorporate it, into their curriculum design

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ARTIFICIAL INTELLIGENCE AND JOB PERFORMANCE OF SECRETARIES IN PUBLIC SERVICE IN EKITI STATE

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Abstract

This paper examines the impact of Artificial Intelligence (AI) on the job performance of secretaries in Nigerian public service. The paper focused on the concepts of Artificial Intelligence, secretaries and their roles, job performance of secretaries in public service, integration of AI in Office Technology and Management curriculum, AI tools for enhancing job performance of secretaries and the impact of AI on the job performance of secretaries in public service. As AI technologies reshape administrative roles, understanding their effects on secretarial work is crucial. The paper explores how AI tools enhance efficiency in tasks such as document management, scheduling, and communication. However, challenges such as infrastructure limitations, skills gaps, and data privacy concerns hinder widespread adoption. The study also highlights the evolving nature of secretarial roles, emphasizing the need for continuous professional development to adapt to AI-driven work environments. Recommendations include expanded research on AI training programs, cost-effective implementation strategies, and long-term impact assessments. This paper contributes to the understanding of AI's role in transforming secretarial work and provides insights for policymakers and educators in preparing the workforce for the future of administrative roles in Nigeria's public sector.

Keywords: Artificial Intellectual, Job Performance, Secretaries, Public Service

Introduction

The integration of Artificial Intelligence (AI) is reshaping the roles and responsibilities of secretaries in public services in Nigeria, as they are the backbone of administrative operations and play crucial roles in ensuring that institutions run smoothly and efficiently. But with the introduction of AI technologies, secretarial positions are changing in previously unheard-of ways, thus it's critical to comprehend how this technology affects secretaries' performance.

Historically, secretaries have been responsible for a broad range of duties, such as handling letters, setting up appointments, keeping track of

documents, and acting as the main point of contact for different parties (Adebisi, 2019). Nonetheless, throughout the past few decades, technological advancements have had a major impact on the nature of secretarial employment. A change in secretarial responsibilities started in the 1980s and 1990s with the introduction of personal computers. Typewriters and paper-based file systems were gradually replaced by word processing software, spreadsheets, and email systems. In many areas of secretarial work, this first wave of digitization increased accuracy and efficiency (Omotosho, 2021). But the advent of artificial intelligence (AI) and other cutting-

edge technology tools ushers in a much more significant change, one that is fundamentally altering the nature of secretarial jobs, particularly in governmental offices.

One way to characterize artificial intelligence (AI) as a field of study in science is the application of machines to solve complicated problems in a way that is closer to human thought. This usually entails taking traits of human intellect and using them in computer-friendly ways like algorithms. Artificial intelligence (AI) systems are computational models that do perceptual or cognitive tasks in the real world that were previously performed by thinking, evaluating, and reasoning humans. (Leslie *et al.*, 2021). Artificial intelligence (AI) is another name for machine-based systems that may provide a set of human-defined objectives and make decisions, forecasts, or suggestions that affect both real and virtual surroundings, as well as the secretarial profession (UNICEF, 2021).

Artificial Intelligence demonstrates transformative potential in public service secretarial roles by substantially enhancing operational efficiency, streamlining administrative processes, and significantly improving overall productivity through advanced technological interventions. A secretary can now focus on more strategic and value-added activities by automating or streamlining routine tasks that previously took up a significant amount of their time. AI-driven document management systems, for example, can efficiently arrange and locate files, saving time compared to manual filing and searching. AI solutions enable secretaries to organize complicated projects and engage with various stakeholders more efficiently, even in distant or hybrid work contexts (Eze & Chinedu-Eze, 2021). The significance

of digital skills and technology approach lies in the fact that they form the foundation of modern work practices. In fact, digital skills are now considered vital for many modern professions (Olaniyi, 2022). Accuracy in many areas of secretarial work can be increased with the use of these digital abilities.

There is a notable lack of study examining the specific impacts of AI technology on secretarial performance within the context of public service. The problem lies in the uncertainty surrounding how the technology advancement is influencing the day-to-day performance of secretaries. The study seeks to provide valuable insights that can inform a more effective integration of AI enhanced secretarial performance, and contribute to the overall improvement of administrative efficiency in public service in Ekiti State.

Concept of Artificial Intelligence

A number of facets of industry and human life have been completely transformed by artificial intelligence (AI), which has become one of the most revolutionary technologies of the twenty-first century. Although artificial intelligence has been there since the middle of the 20th century, significant advancements have been made in the field in recent years. John McCarthy first used the term "artificial intelligence" in 1956 at the Dartmouth Conference, which is largely credited with launching AI as a legitimate field of study (Russell & Norvig, 2020). Since then, artificial intelligence (AI) has gone through numerous stages of development, from the "AI winter" periods of decreased funding and interest to the present AI renaissance powered by big data, algorithmic discoveries, and advances in computing power. In the early years, AI research focused on developing

systems that could mimic human reasoning and problem-solving abilities.

Artificial intelligence (AI) stands as an advanced technological frontier, simulating human intelligence through machine learning algorithms, neural networks, and natural language processing (NLP). Its transformative impact extends across diverse industries, encompassing healthcare, finance, and manufacturing. In recent years, AI has emerged as a potent force in educational management, revolutionizing the learning landscape. It contributes to enhancing the learning process, elevating student outcomes, and streamlining administrative tasks. Positioned at the forefront of the fourth educational revolution, AI represents a key driver of technological progress, reshaping societies and economies globally (Verma, 2018). Rooted in computer science, AI focuses on designing intelligent systems that emulate human behaviors associated with reasoning, language processing, perception, vision recognition, and spatial processing (Ocana *et al.*, 2019).

Concept of Secretaries and Secretarial Roles

Secretaries in the office settings carry out routine administrative and secretarial tasks. In addition to inputting data and creating documents, their duties often involve making appointments and reporting to management. They could be employed by the government, educational institutions, businesses, law firms, or medical facilities. Consequently, the term "Secretary" applies to the Executive Assistant, Personal Secretary, or Secretary and could be used interchangeably with the aforementioned titles. Under supervision, the Secretary handles a range of secretarial, administrative, and confidential tasks for

the chief executive, department head, and professional and supervisory staff. This secretary, also known as a personal assistant, supports management executives by helping one or more employees by applying a variety of project management, communication, and organizational abilities. Additionally, the Secretary works as an executive's assistant and is skilled in office procedures. He or she may take on responsibilities without direct supervision, show initiative, use sound judgment, and make judgments within the bounds of their authority. He completes the plethora of everyday tasks that eat up executive time. The secretary, who serves as the primary support with administration in the office, enhances the efficacy of staff programs by managing the office's paper flow and performing the regular administrative support tasks necessary to complete the organization's tasks (Onifade, 2015).

Ahukunnah and Ugoji (2019) posited that secretaries' general responsibilities encompass the following: take notes and type them up on a computer; mail letters; complete the filing; launch fresh files; handle the phone and place outgoing calls; read and sort mail; accept messages make and maintain records of the boss's appointments; serve as a reminder for the manager; write letters and assist with report preparation; purchase office supplies; type documents derived from handwritten or brief notes; make travel plans, including reservations for hotels; maintain accounting records and manage interim accounts; create the meeting's agenda and send it out to the participants; format for meeting minutes; format the contents that will be published; perform local shopping and personal banking; save documents, data, and a scrapbook pertaining to the interests of your employer; serve as the boss's point of contact; manage the office and oversee other staff members; take notes on speeches given at

conferences, seminars, etc. record and write up board and tribunal hearings; give advice as required. examine travel schedules and create itineraries for the supervisor; verify each and every travel document; do errands for the supervisor; modify the date on the calendar each morning; prepare pertinent interview-related briefs for the supervisor; send out invites and respond to those that you have received; when appropriate, send messages of congratulations or condolences and check the email on the website.

Job Performance of Secretaries in Public Service

Secretaries in public service in Nigeria deal with a variety of issues that affect how well they perform their jobs. Secretarial efficiency was significantly impacted by a lack of training opportunities, inadequate technology infrastructure, and ambiguous job descriptions (Oluwole *et al.*, 2023). According to Oluwole *et al.* (2023), just 45% of secretaries in federal ministries said they had access to the resources they needed to do their duties well. The COVID-19 epidemic also had a major impact on secretaries' workplaces. The difficulty many secretaries had adjusting to remote work and digital communication platforms was brought to light by Adebayo and Nwankwo (2024). With only 30% of public sector secretaries showing confidence in using advanced digital technologies, this shift showed gaps in digital literacy.

Recent initiatives by the Nigerian government show promise in addressing these challenges. In late 2023, the Federal Ministry of Labour and Employment launched a comprehensive training program aimed at upgrading the skills of secretaries across all levels of government. This program, known as the "Digital Secretariat Initiative," focuses on enhancing digital competencies, modern office management techniques, and effective communication skills (Federal Ministry

of Labour and Employment, 2023). Furthermore, a recent policy brief by the Nigerian Institute of Management (2024) emphasized the need for a clear career progression path for secretaries in public offices. The brief argued that establishing a structured career ladder could significantly improve job satisfaction and, consequently, job performance among secretaries (Nigerian Institute of Management, 2024).

Despite these challenges, there are notable examples of excellence in secretarial performance. The Office of the Head of Civil Service of the Federation reported in its 2024 annual review that secretaries played a pivotal role in improving document management and inter-departmental communication efficiency in several key ministries (Office of the Head of Civil Service of the Federation, 2024). While secretaries in Nigerian public offices face significant challenges that affect their job performance, recent initiatives and policy recommendations show a growing recognition of their importance. Addressing infrastructure gaps, providing continuous training, and establishing clear career paths are crucial steps towards enhancing the performance of secretaries in Nigeria's public sector.

Integration of Artificial Intelligence into OTM Curriculum

To prepare students for this changing landscape, Nigerian tertiary institutions are beginning to incorporate AI-related content into their OTM programs. Adebayo and Ogunleye (2024) argue that exposing students to AI concepts and tools is crucial for developing a workforce capable of leveraging these technologies effectively. This integration may include introduction to AI fundamentals and their applications in office settings, hands-on experience with AI-powered office software and tools, and exploration of ethical considerations

surrounding AI use in business environments.

The inclusion of AI in OTM education offers several advantages for Nigerian students:

- **Enhanced employability:** Familiarity with AI tools can make graduates more competitive in the job market (Eze & Chukwu, 2024).
- **Improved problem-solving skills:** Exposure to AI concepts can foster critical thinking and innovative approaches to office challenges.
- **Preparation for future technological advancements:** Understanding AI principles equips students to adapt to ongoing technological changes in the workplace.

The integration of AI into Office Technology and Management education in Nigerian tertiary institutions represents a significant opportunity to prepare students for the evolving demands of the modern workplace. While challenges exist, proactive measures to update curricula, improve infrastructure, and enhance faculty expertise can ensure that Nigerian graduates are well-equipped to harness the power of AI in their future careers. As the field continues to evolve, ongoing research and adaptation will be crucial to maintain the relevance and effectiveness of OTM education in the AI era.

Artificial Intelligence Tools for Enhancing Job Performance of Secretaries

The integration of Artificial Intelligence (AI) has revolutionized traditional secretarial roles, enhancing efficiency, productivity, and the overall scope of responsibilities. Historically, secretarial roles were primarily focused on administrative tasks such as typing, filing, and managing schedules. However, the digital age has dramatically reshaped these responsibilities. Modern secretaries, often referred to as administrative assistants or executive assistants, are

now expected to possess a diverse skill set that includes proficiency in various software applications, project management, and even basic data analysis (Kuhn, 2018).

The various types of AI tools that are revolutionizing secretarial work, with a focus on recent developments and research include the following.

• **Natural Language Processing (NLP) for Communication Management**

Natural Language Processing has become a game-changer in managing communication for secretaries, especially email management. NLP powers email management systems which increases email processing efficiency by 35% among administrative professionals (Zhang, 2023). AI tools like IBM's Watson or Google's Smart Reply use NLP to automatically categorize and prioritize emails, helping secretaries manage inboxes more effectively. These tools can generate contextually appropriate email responses, saving time on routine correspondence. In scheduling and calendar management AI, AI-driven scheduling tools have significantly reduced the time secretaries spend on arranging meetings and managing calendars. AI algorithms can predict scheduling conflicts and suggest optimal meeting times based on historical data and preferences.

• **Voice Recognition and Dictation Software**

Advanced voice recognition technology has transformed how secretaries handle dictation and transcription tasks. A study in the International Journal of Human-Computer Interaction (Brown & Lee, 2024) found that AI-powered voice recognition tools improved transcription accuracy by 28% compared to traditional methods. Tools like Otter.ai and Google's Live Transcribe can provide real-time transcription during meetings, significantly reducing post-meeting documentation time. Many modern voice recognition tools offer

multilingual support, enhancing the capabilities of secretaries in global organizations.

- **Task Management and Workflow Automation**

AI-driven task management tools are helping secretaries streamline workflows and manage complex projects more efficiently. Research by Martinez (2023) in the Journal of Administrative Management demonstrated that AI-powered project management tools increased task completion rates by 22% among administrative staff.

Intelligent Task Prioritization:

Tools like Asana and Monday.com use AI to suggest task priorities based on deadlines, importance, and team capacity.

Automated Workflow Creation: AI can analyze recurring tasks and suggest automated workflows, reducing manual input and potential errors.

- **Document Processing and Management**

AI has revolutionized document handling which is a core aspect of secretarial work. A report by Gartner (2024) predicted that by 2025, 50% of all document processing in large organizations will be handled by AI, up from 10% in 2023.

Intelligent Document Scanning:

Tools like ABBYY FineReader use AI for Optical Character Recognition (OCR), converting scanned documents into editable, searchable text.

Automated Document

Classification: AI can automatically categorize and file documents based on content, streamlining document management processes.

- **Virtual Assistants and Chatbots**

AI-powered virtual assistants are increasingly supporting secretaries in handling routine inquiries and tasks. A study in the International Journal of Human-Computer Studies (Wang & Johnson, 2024) found that implementing AI chatbots for basic administrative queries reduced secretaries' workload by up to 30%.

Customer Service Support; Chatbots can handle basic customer inquiries, freeing up secretaries for more complex tasks. Internal Query Management; AI assistants can manage internal queries about company policies, procedures, or schedules.

- **Data Analysis and Reporting**

While not traditionally associated with secretarial roles, AI-driven data analysis tools are expanding the capabilities of modern administrative professionals. The Harvard Business Review (2024) reported that 45% of executive assistants now regularly use AI tools for basic data analysis and reporting.

Automated Report Generation:

Tools like Tableau and Power BI use AI to generate insightful reports from raw data with minimal human input.

Predictive Analytics: Some AI tools can provide predictive insights, helping secretaries anticipate future trends or needs in their organization.

Impact of Artificial Intelligence Technology on the Job performance of Secretaries in Public Offices in Nigeria

The integration of Artificial Intelligence (AI) technologies in Nigerian public offices has begun to reshape the role and performance of secretaries with multifaceted impact on secretarial work in Nigeria's public sector, highlighting both the opportunities and challenges presented by this technological shift:

- **Enhanced Efficiency and Productivity**

Recent studies indicate that AI technologies have significantly improved the efficiency of secretarial work in Nigerian public offices. According to a 2023 report by the Nigerian Bureau of Statistics, public offices that have implemented AI-driven document management systems have seen a 30% increase in document processing speed (Nigerian Bureau of Statistics, 2023). This improvement is particularly notable in ministries dealing with large volumes

of paperwork, such as the Ministry of Interior and the Ministry of Justice. Adebayo and Ogunleye (2024) conducted a survey across 50 federal government offices in Abuja and found that secretaries using AI-powered scheduling tools reported saving an average of 5 hours per week on calendar management tasks. This time saving has allowed secretaries to focus on more strategic tasks, enhancing their overall job performance.

- **Improved Accuracy in Data Management**

AI has significantly reduced errors in data entry and management, a crucial aspect of secretarial work in Nigerian public offices. A study by Nwosu (2023) in the African Journal of Public Administration revealed that AI-driven data verification tools reduced data entry errors by 40% in the Federal Ministry of Finance. This improvement in accuracy has had a ripple effect on policy-making and resource allocation, as decision-makers now have access to more reliable data.

- **Language Processing and Translation**

In a multicultural and multilingual country like Nigeria, AI's natural language processing capabilities have proven invaluable. Oluwole and Ibrahim (2024) highlighted in their research that AI-powered translation tools have improved inter-departmental communication in federal offices by 25%, particularly in regions where multiple local languages are spoken alongside English. This has not only enhanced the efficiency of secretaries but also improved overall organizational cohesion.

Challenges in AI Adoption

Despite these positive impacts, the adoption of AI in Nigerian public offices faces significant challenges. A report by the Nigerian Information Technology Development Agency (NITDA, 2024) identified several key issues:

Infrastructure Limitations: Many public offices, especially in rural areas, lack the necessary technological infrastructure to support advanced AI systems.

Skills Gap: There is a significant skills gap among secretaries in public offices. The NITDA report found that only 35% of secretaries in federal offices felt confident using AI-powered tools.

Cost of Implementation: The high cost of implementing and maintaining AI systems poses a challenge for many public offices operating on limited budgets.

Data Privacy Concerns: The use of AI in handling sensitive government documents has raised concerns about data privacy and security.

Conclusions

The integration of Artificial Intelligence (AI) in Nigerian public offices has significantly transformed the role and performance of secretaries. This technological shift has brought about both opportunities and challenges. AI has enhanced efficiency and productivity, with studies showing substantial improvements in document processing speed and time savings in calendar management tasks. The technology has also improved accuracy in data management, reducing errors and contributing to more informed decision-making processes. AI's language processing capabilities have proven particularly valuable in Nigeria's multilingual context, improving inter-departmental communication. However, the adoption of AI faces significant hurdles, including infrastructure limitations, a notable skills gap among secretaries, high implementation costs, and data privacy concerns. The changing landscape necessitates a shift in the skill set required for secretarial roles, with an increasing emphasis on higher-order skills such as data analysis, strategic planning, and advanced communication. This evolution in job requirements underscores the need for continuous

professional development and adaptation to new technologies.

Recommendations

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

1. There should be expanded research on AI training programs for secretaries as current literature suggests a significant skills gap among secretaries in using AI tools.
2. Investigate cost-effective AI implementation strategies as the high cost of AI systems is a major challenge for many public offices. This could include studies on open-source AI tools or cloud-based services that require less upfront investment.
3. Examine the long-term impact of AI on secretarial job roles which could help in future workforce planning and curriculum development for secretarial studies.
4. There should be assessment of how AI integration affects job satisfaction among secretaries and examine if and how AI is creating new career opportunities or pathways for secretaries.
5. Many public offices, especially in rural areas, lack the necessary technology infrastructure and should focus on innovative solutions to overcome these limitations.

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ASSESSMENT OF EMPLOYERS' PERCEPTION OF SECRETARIAL SKILLS POSSESSED BY OFFICE TECHNOLOGY AND MANAGEMENT GRADUATES IN EKITI STATE, NIGERIA

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Abstract

The study investigated assessment of employers' perception of secretarial skills possessed by Office Technology and Management graduates employed in Ekiti State, Nigeria. The descriptive survey research design was adopted for the study. Three research questions guided the study. The population of the study consist of 156 chief executives/Director who have confidential secretaries in the civil service of Ekiti. The simple random sampling technique was used to select 103 chief executives/Directors who have secretaries. The instrument used for data collection was a structured questionnaire titled "Employers' Perception of the Secretarial Skills Possessed Questionnaire" (EPSSPQ). The instrument was validated by three experts in Business Education Unit of Vocational and Technical Education Department, Ekiti State University, and one in Test and Measurement Department of the Faculty Education, Ekiti State University, Ado Ekiti. Test-retest method was used to determine the reliability of the instrument. The data collected were analyzed using mean and standard deviation. The findings of the study revealed that the three secretarial skills were moderately possessed by OTM graduates for job performance. It was concluded that practicing secretaries in the Ekiti State civil service moderately employable as they possess secretarial skills needed for job performance. However, digital and technical skills are least possessed. Based on the findings and conclusion of the study, it was recommended that Office Technology and Management (OTM) graduates should be exposed to training in digital and technical skill aspects to enable them meet the challenges of automated office, among others.

Key words: Employers, Secretarial Skills, Office Technology and Management, organization Skills, Digital Skills, Technical Skills

Introduction

The establishment of both private and public organizations is to achieve some specific objectives. Private establishments are to provide services for human development to make profit while public establishments are regulated and controlled by government to achieve

set objectives with little or no consideration for profit. For these organizations to achieve their goals and objectives, there is need to engage different categories of personnel in different cadres and professions who will work together as a team for goal attainment. Among the personnel

employed in any organization are the secretaries.

There are different types of secretaries such as Administrative Secretary, Executive Secretary, Professional Administrative Assistant, Confidential Secretary, Personal Secretary, Parliamentary Secretary and Hospital Secretary, just to mention few. For the purpose of this study, confidential secretary is the focus. Confidential Secretaries are graduates of Office Technology and Management programme who are expected to perform secretarial jobs. They are those who are trained in the art of record keeping, office procedure and correspondences with good knowledge of office skills such as keyboarding, shorthand, filing and human relations in order to assist their bosses in achieving the goals of the organization. They are expected to possess some skills and attitudes that can make them indispensable in any organization.

The word secretary is derived from Latin word 'Secretarius' meaning confidential officer, (Udeh, 2011). Thus, confidential secretary can be described as a skilled personnel who is specialized in secretarial duties/office administration. Therefore, a confidential secretary is defined as a "high level administrative assistant who provides administrative support to senior executive, managers or high ranking official in an organization, in which they possessed, mastery of office skills and ability to assume responsibilities without direct supervision, who displays initiatives, exercises judgment and makes decisions within the scope of his/her authority".(IAPP,2022). It implies that a secretary is regarded as a "confidant", one who is entrusted with the secret matters of the chief executives or a keeper of secrets, whose work are confidential in nature. A secretary's work is multitasking

which allow her to have direct contact with visitors or customers who are coming to the office for one reason or the other and their contact with the secretary is expected to bring positive relationship to the organization. The secretary, therefore, is expected to be an indispensable companion to top management staff in facilitating administrative and business transactions. Secretaries working closely with top management are expected to be highly involved in promoting the efficiency and effectiveness, reduce the bulk load of her boss routine work, ensuring the smooth running of the office by providing vital information for easy decision making.

In the past, before the advent of Information and Communication Technology, most of the secretarial duties were done manually by secretaries through the use of typewriters memo, letters, manuscripts, circulars, invitations which involving note taking in shorthand and transcribing it into mail able correspondence which are at once dispatched to their destinations. The duties of these secretaries include filling of records are done in alphabetical order in the file tray, keeping petty cash book for the boss, recording of incoming and outgoing mails in mail register for monitoring of files, attending to visitors and callers for official purposes, keeping of vital information for easy retrieval. In addition, preparation for meeting and other logistics for positive deliberation, requisition for stationeries for smooth running of the office, supervision of junior staff for effective performance among others are some of the duties performed manually which made their work slow and strenuous. With the development of information and communication technology, Office Technology and Management

Education students are expected to be equipped with the competencies that will ensure their good job performance, after graduation. By this, Ahukannah (2018) noted that Office Technology and Management programme should be able to produce graduates who can:

- produce office documents and reports using word processing,
- produce numerical information using spreadsheet,
- Produce office data in graphic form, manipulate access and retrieve information from computer based system,
- Access a wealth of information on internet through the knowledge of web pages

The advent of information, communication and technology has brought transformation to all human aspects of life, in which secretarial profession is not left out. It has made today's secretarial work environment more attractive, provide sophisticated office equipment, and a more interesting place to work. It has increased secretarial efficiency tremendously and easy accessibility of information for quick decision making. For instance, electronic typewriters that have replaced the manual ones, Word processing with multi-purpose facilities, computer and other office machines are provided for modern secretaries.

Today, the duties of secretary vary from one organization to another but there are some common duties such as keyboarding, receiving mails, receiving visitors and preparing daily itinerary for the boss among others. Uchechi, et. al (2022) stated that the minimum educational qualification for a secretary should be Diploma/National Diploma/Higher National Diploma with minimum of

two years of studies and four years for Degree and coupled with an industrial training experience in between the years of studies. Graduates of Office Technology and Management are produced from Universities, Polytechnics, Colleges of Education and Government Secretarial Training Schools. Florence, (2022) opined that graduates of Office Technology and Management programme are called Office Technology Managers, Professional secretaries or Professional Administrative Assistant Officers, Executive assistant, Front Managers, Confidential Secretaries, Office Manager, Office Coordinators and so on.

In today's office, automation has taken over the traditional duties of record keeping, reprography and other clerical duties. The focus now is shifting from the usual traditional secretarial skills to digital secretarial practice. Based on the foregoing, there are some skills that are expected to be possessed by the office technology management graduates in order to enhance their official duties. These include the demonstration of expertise on digital skills, organization and content skills in order to enhance the growth of their organizations.

Digital Skills are defined as the ability to find, evaluate, use, share and create using electronic device such as computer, smartphone and so on for job performance. The relevance of digital skills in the 21st century cannot be under estimated. Thus, possession of digital skills that are highly valued now, will likely continue in the future for modern workplace and employment recruitment. Digital skills are very vital skills required in meeting the need of customers and organizational growth. Digital skills enable people to be self-reliant, create, share information, collaborate, and solve problems without much stress,

convenience, and self-fulfillment in life learning, work and social activities at large (Yvonne, 2022). Modern office workers make use of digital skills like view web pages, staying save online, communication online, online banking, e-commerce, booking of hotel accommodation for boss online and use of internet, computer programme, which make work easier and knowledge more accessible through the use of I-phone and internet services. Possessing Digital Skills in 21st century workforce has increased the use of electronic information system and helped managers in modern organization to direct, control, communicate, plan, formulate policies and make quick decisions (Nwangwu & Okeke, 2022). The possession of digital skills may likely promote quick transfer of information, storage, arrangement, management of meetings and retrieval of documents within and outside organizations.

Apart from possession of digital competencies, organization skill may also have its contribution towards enhancing secretaries' performance. Organizational skills are referred to as skills that allow employees to use his/her ability and office resources efficiently and effectively. It is regarded to as a strong ability to organize, keep a clear track of essential files or documents before its deadline. To be organized can be conceived as the ability to manage someone's time, energy and workspace well and able to achieve the set objective successfully. Organization skills that may enhance one's job performance include, time management, setting goals, delegation, self-motivation, decision making to mention few. These are called soft skills, which are personal abilities and transferable to any type of job and help employees to succeed in a wide range of different tasks or job (Fritz & Arthur, 2017).

Also, Technical skills are also known as content or employability skills, job specific, vocational skills include those that relate specifically to your line of work, (Andres, 2022). They are referred to as tools and knowledge used in solving problems in ones area of field work or study. In fact, many fields, industries have level of technical skills required in accomplishing their work such as cloud computing in Google Drive and navigating social media platforms, key skills, core skills. Also known as hard skills which involve the practical knowledge used in order to complete tasks such as Data analysis, Web development, computer programing language, financial management, Bookkeeping, UX design, Graphic design, such as construction of views and display in the use of word processing, financial spreadsheet maintenance and presentation creation. Proper use of office machines such as fax machine, photocopier and multiline telephone. In addition, he/she must serve as the information technology desk officer for his boss.

These skills are expected to be of great help to secretaries in Ekiti State but it seems reverse is the case. For example, some secretaries in Ekiti State seem not to be familiar with the use of ICT in their place of work, they seem to live in the traditional orientation because they are unable to operate and manipulate high-tech-equipment, software packages that can protect their work from hackers, boost their morale and give them job satisfaction. Also, they seem not well organized at work as most of them continue to search for records and document for long because of their inability to keep proper records. Their bosses do at times complain about their abilities to produce error-free and mail able documents. By this, some

executives in Ekiti State seem to prefer processing their mails by themselves, instead of giving their secretaries to type. In view of the foregoing, the researcher is worried and thus interested in the study in order to find out employers' perception of the secretarial skills possessed by the secretaries in public organizations in Ekiti state, Nigeria.

Statement of the Problem

There has been complaints from executives about the inability of their secretaries to cope and perform official duties to their expectations. Some chief executives seem to prefer carrying out their secretarial work by themselves instead of involving their secretaries despite the advantages embedded in office technology and management programme which has increased efficiency, effectiveness on job performance of secretarial personnel.

Secretaries in public organizations in Ekiti State seem not to have acquired needed skills that can make them to be more proficient and more current in discharging their duties. This is observed in the way by which some secretaries find it difficult to produce error-free documents on computer without wasting papers and other office stationeries, poor image making, inappropriate use of words in oral and written communication, misplacement of important documents due to poor filing system, poor organization skills leading to unnecessary delay.

In view of the above, the researcher is in doubt whether this category of officer possessed the required skills that will make them fit into the ICT compliant office work environment. It is on this note that the researcher investigated whether the secretaries in today's office environment possess adequate

secretarial skills needed by their employers in Public Organizations of Ekiti State, Nigeria

Purpose of the Study

The main purpose of this study was to find out employers' perception of secretarial skills possessed by secretaries in public organizations in Ekiti State, Nigeria. Specifically, the purpose of the study are:

- (a) To find out the level of digital skills possessed by the secretaries in Public Organizations in Ekiti State, Nigeria
- (b) To investigate the level of organization skills possessed by the secretaries in Public Organizations Ekiti State, Nigeria.
- (c) To examine the level of technical/content skills possessed by the secretaries in Public Organizations Ekiti State, Nigeria.

Research Questions

- (a) What is the level of digital skills possessed by secretaries in Public Organization Ekiti State?
- (b) What is the level of organization skills possessed by secretaries in Public Organizations Ekiti State ?
- (c) What is the level of technical skills possessed by secretaries in Public Organizations Ekiti State/?

Methodology

Descriptive survey design was used for the study. It is a design which describes what exists or reveal the present position of what is being investigated (Ali, 2023). The goal here is to obtain and describe the opinion of the Chief Executives on the secretarial skills possessed by OTM graduates employed in Ekiti State. The population of this study consists of 156 Chief executives/ Directors who have confidential secretaries and their

Secretaries in the civil service of Ekiti State in Ado-Ekiti, Ekiti State. Simple random Sampling technique was used to select 103 Chief Executives/Directors from Ekiti State Civil service as the sample for the study.

Validity of the instrument was carried out by three experts in Business Education, Department of Vocational and Technical Education, Ekiti State University, Ado Ekiti and one from Test and Measurement from the same institution. Their corrections and comments were incorporated into the final copy of the instrument which enhanced the validity of the instrument. Test-retest method was used to determine the reliability of the instrument. A total number of 20 respondents who are directors with secretaries in the civil service in Ekiti State who were not part of the sample were used for the test. The instrument was administered on them twice within two weeks. The data collected were analyzed using Pearson product Moment Correlation. The correlation coefficient of 0.70, was obtained, which was high enough to ensure validity.

A self-designed research instrument containing 31 items was

used for collection of data. The instrument was titled "Employers' Perception of Secretarial Skills Possessed Questionnaire (EPSSPQ)" which was administered on the respondents by the researcher with the help of two research assistants. They were engaged in the distribution and retrieval of the instrument. The instrument was divided into four sections – section A, B, C and D. Section A sought for information on bio-data of the respondents while section B to D sought for information on questions raised for the research questions base on 4 points rating scale of Highly Possessed (HP) = 4, Moderately Possessed (MP) = 3, Rarely Possessed (RP) = 2, Not Possessed (NP) = 1. In taking decision, any mean response value of 2.5 and above was regarded as highly possessed while any mean response that is below 2.5 point was regarded as not possessed.

Data Analysis

This section discussed the analysis of data collected on the research questions.

Research Question 1: What is the level of digital skills possessed by secretary in Ekiti State, Nigeria?

Table 1: Analysis of Digital Skills Possessed by Secretaries in Ekiti State

S/N	Items	X	SD	Decision
1.	My Secretary makes use of various computer software like word and excel packages	4.50	0.59	highly Possessed
2.	My secretary makes use of other electronics digital gadgets for effective communication	4.90	0.63	highly Possessed
3.	Secretary in my office organizes Zoom meeting and goggle meetings for effective job performance	3.13	1.25	highly Possessed
4.	Secretary in my office access internet facilities with ease	3.35	1.48	highly Possessed
5.	My secretary makes use of dictating machine when necessary	2.49	1.05	highly Not Possessed
6.	My secretary do link other websites for information while searching	3.25	1.48	highly Possessed
7.	My secretary has good knowledge of electronic filling for easy retrieval of information	4.49	0.68	highly Possessed
8.	My secretary uses storage devices such as flash drive, for storing information well	4.59	0.87	highly Possessed
9.	My secretary organizes, sorts, calculates, Analyzed data electronically, competently.	1.95	1.22	Not Possessed
10.	My office secretary uses electronic security tools effectively in discharging office duties	4.40	0.63	highly Possessed
11	The projector in my office is operated by my secretary effectively and efficiently	2.40	1.02	Not Possessed
Grand Mean		3.59	0.99	highly Possessed

From the table above, four items (1, 2, 6, and 8) were rated by the employers to be highly possessed. Out of 11 items. Items (3, 4, 7, 9 and 10) were rated moderately possessed, Items (5), (9) and (11) were rated as not possessed with a mean rating of less than 2.50. The employers agreed

that digital skills possessed by secretarial secretaries in their respective organizations were moderately possessed.

Research Question 2: What is the level of organization skills possessed by Secretarial Practitioners in Ekiti State, Nigeria?

Table 2: Analysis of Organization Skills Possessed by Secretaries in Ekiti State

S/N	Items	X	SD	Decision
12	My secretary prepares notice of meeting correctly	4.48	0.92	highly Possessed
13	My secretary prepare meeting's agenda in conjunction with me to time	4.54	0.32	Possessed
14	My secretary takes minutes of meeting well	3.49	1.45	Possessed
15	My secretary communicates fluently in official language	4.68	0.57	Possessed
16.	Secretary in my office has good telephone manner	4.59	1.04	Possessed
17.	My secretary can works independently without supervision	4.74	0.45	Possessed
18	My secretary displays good initiative	4.59	1.04	Possessed
19	My secretary can works under pressure without offending others	4.34	0.28	Possessed
20	Secretary in my office display spirit of team work	4.61	0.68	Possessed
21	My secretary supervises both human and material resources appropriately	4.66	0.62	Possessed
22	My secretary is a very time consuming in achieving targets.	3.48	1.12	Possessed

Grand mean:	4.02	0.77	highly Possessed
Table 2 above shows that the mean ratings of the respondents' responses on four points scale indicate that respondents highly possessed organization skills in the discharged of their duty. This is because all the mean scores exceeded the cut-off point of 2.5 and above. Displaying a spirit of team work, preparation of agenda of	meetings, working without supervision, ability to adapt to new situation, ability to display initiative are well possessed by secretarial practitioners in Ekiti State, Nigeria.		
	Research Question 3: What is the level of technical/content skills possessed by Secretaries in Ekiti State, Nigeria?		

Table 3: Analysis of Technical Skills Possessed by Secretaries in Ekiti State

S/N	Items	X	SD	Decision
23.	My secretary use clock alarm as a reminder for daily important appointment	2.54	1.05	highly Possessed
24.	My secretary is versatile in keyboarding skills	4.11	1.22	Possessed
25.	My Secretary is good at Note taking (Shorthand writing)	2.54	1.05	Possessed
26.	My secretary has ability to use business law for organizations' operations	4.34	0.53	Possessed
27.	My Secretary has ability to use office technological equipment with repair of minor faults	4.34	0.53	Possessed
28.	My secretary has ability to do multi-task activities at once to solve organization critical problem	4.10	0.62	Possessed
29.	My secretary has ability to integrate new Experience/idea	4.40	0.68	Possessed
30.	My Secretary has ability to determine appropriate form for office use	2.40	1.08	Not Possessed
31.	My secretary has ability to forecast Future occurrences	2.54	1.13	Possessed
	Grand mean	3.47	0.87	Possessed

Table 3 above shows the responses of the employers of secretarial practitioners in Ekiti State, Nigeria on the technical skills possessed. The result of the analysis revealed that items 24,25,27, were highly possessed while item 30 was not possessed. Items 23,26,28,29 and 31 were moderately possessed by secretarial practitioners. The grand mean on the level technical skills possessed was 3.47. Thus, it can be revealed that these skills are possessed by most of the secretaries in the public Service in Ekiti State.

Discussion

The findings of the study regarding the first research question indicated that Office Technology and Management Programme has greatly influenced the students acquisition of digital skills for enhanced of job performance secretaries in the modern office workplace. The result of the study showed that 8 out of 10 items such as use of computer skills, electronic filling system skill, electronic communication skills, electronic security tool, access internet facilities, software applications listed as the digital skills are highly

possessed by office technology and management graduates and secretarial practitioners which has improved their organizational efficiency in public sector in Ekiti State. This finding corroborates with the findings of Chaouchi, (2020) where the scholar reported that digital skills are hottest skills highly possessed in recent time by employees to remain relevant in their chosen career and to boost their business activities like share content information online, using online platform.

The finding in respect of the second research question showed that the respondents agreed on all the 10 items that Office Technology and Management personnel highly possessed of organization skills for efficient and smooth running of modern offices. The finding is also in support of Arthur and Jr.'s (2023) when they observed that skills are the abilities to effectively sending messages, organizing meeting, physical and electronic filing systems, handling sensitive information with discretion and maintaining privacy, time management.

The findings on research question three showed that the respondents agreed that Office Technology and Management personnel in Ekiti Public Service possessed technical skills to a high extent level as only one out of nine items was not highly possessed. This finding is in line with Nwokike & Eya (2023) who identified shorthand skills, keyboarding skills, technological skills, and knowledge in business law, and organization legal law possessed by OTM graduates/secretaries have made them relevant in the business world. Technical skills in today's office have helped the business organizations to achieve the aims and goals, hence, the need for office technology and management graduates to possess

relevant and necessary skills to meet the challenges of modern secretarial practice and employability.

Conclusion

Based on the findings of this study, it is established that Office Technology and Management (OTM) graduates are well equipped with the skills studied as majority of the skills are highly possessed to ensure effective job performance in the Public Service of Ekiti State Nigeria.

Recommendations

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

1. Secretaries should always advance their knowledge of digital skills as technological invention on office equipment are being advanced.
2. Office Technology and Management personnel in the Public Service of Ekiti State should maintains the level of organization skills possessed in order to further enhance their productivity
3. It is also recommended that secretarial professionals in the Public Service of Ekiti State should improve on their technical skills by attending conferences and seminars as well as learn from their senior professional colleagues in order to enhance their job performance

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WORKSHOP SKILL PRACTICAL ACQUIRED AND DISPLAYED IN ELECTRICAL INSTALLATION AND MAINTENANCE AMONG TECHNICAL COLLEGE STUDENTS IN ONDO STATE, NIGERIA.

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Abstract

The study focused on workshop skills acquired and displayed in electrical installation and maintenance among technical college students in Ondo State, Nigeria. A descriptive research design of the survey type was adopted for the study. The population for the study comprised two hundred and thirty-nine (239) the sample of the study comprised two hundred three (203) which included 164 students and 39 staff who handled the trade course in year two and year three in the electrical department. Two research questions and one null hypothesis were developed and formulated respectively to guide the study. Data collected were analyzed using the mean and standard deviation. While a t-test was used for testing the null hypothesis, the hypothesis formulated for the study was tested at a 0.05 level of significance. The findings of the study indicated, that the most acquired skill by the students was domestic installation, followed by industrial installation and averagely acquired skill in cable joining while students acquired the least skill in the winding of electric machines. Moreover, findings showed that domestic and industrial installations were the most skilled while the least skilled was in winding electrical machines. It was therefore recommended that the government should intensify efforts in providing adequate training materials that would enable students to acquire and display more skills and students of technical colleges should be encouraged to display skills in electrical installation and maintenance practice, particularly in winding of electric machines.

Keywords: Workshop, Skills Acquired and Skills Displayed, in Electrical Installation trades'

Introduction

The focus of governments at all levels has been on Technical and Vocational Education and Training (TVET) due to its ability to forestall skill shortages and enhance manpower development. The Federal Government of Nigeria (FGN, 2004) conceptualized TVET as a comprehensive term referring to those aspects of the educational process in addition to general education involving the study of technologies and the acquisition of practical skills, attitudes, understanding, and knowledge in various sectors of economic and social life. Oke and Olakotain (2018) stress that the training of students in technical colleges would enable them to acquire vocational and technical skills, explore them as an individual to career awareness by exposing useable options in the world of work, also stimulate creativity or creative thinking skills among the youth (FRN, 2013). The technical and vocational training is based on the production of technicians and craftsmen for the sustainable development of society at large.

School workshops serve as compartments where all practical and training facilities are kept for practical works and manual training of students (Danjuma, 2008; Amenge, 2013). They are places where students can acquire practical skills that would enable them to fit for employment opportunities and be employable in the world of work (Ogundola & Bakara, 2010). To equip students with practical skills, the school's workshop facilities and training materials cannot be overemphasized. Therefore teachers would prepare their students and equip them with adequate practical skills. Likewise, the researcher has observed that inadequate workshop facilities may have some negative

effects on the acquisition of students' practical skills.

Skill is an acquired attitude and behavior after exposure to the principles of operational theories, often applied to workshop practices in the field of electrical installation and maintenance practice. Nwokike (2013) cited in NTEB (2001) reported that the goals of electrical installation and maintenance practice is to give adequate workshop skills that may make students to be fitted in the world market. Skill is the capacity to do something or create things in different ways with a degree of proficiency, resulting from certain attitudinal patterns to speed, and accuracy (Okoro 2006, Nwokike, 2014). Skill acquisition in technical college varies from one trade to another. In electrical installation and maintenance practice, there are various skills that students can specialize in, because it is a broad trade that comprises practical skills, such as; domestic installation, industrial installation, cable jointing, and winding of electrical machines (NBTE, 2001)

The goals of the National Board for Technical Education (NBTE, 2001) on cable jointing is to provide students with the appropriate techniques and knowledge of various procedures of cable jointing, terminations, installation of underground cables, practices of overhead wires, and cable installation. Therefore to achieve these skills, different kinds of tools, equipment, and machines with different types of cable sizes, such as; 1.5mm², 2.5mm², 4mm², and 16mm² among others are needed (IEE, 2005). According to NBTE (2001), the specific goal of Technical College is to provide learners with adequate knowledge and sufficient practical skills that would enable students to wind or rewind both AC and DC rotating motors, with good working conditions and functional

tools, equipment, and machines. Therefore, at any technical college where training materials are not available, the wrong approach will be applied to the teaching and learning process, especially during practical activities. Also, teaching will be inefficient and students will be ill-equipped with practical skills. Electrical installation and maintenance practice being one of the trade courses offered at technical colleges, exposes students to various skills. According to Okechwu and Reagen (2017), Electrical Installation and maintenance practice is a programme introduced to expose students to the practical maintenance of the electrical systems in electrical installation, inspection, and test procedures.

According to the National Board for Technical Education (NBTE) (2001), electrical craftsmen and technicians are expected to acquire practical skills that would enable them to test, diagnose, service, install, and completely repair any fault on electrical machines and equipment, using the manufacturer's manual. NBTE use the most recent publication from NBTE also reported that the goals of electrical installation and maintenance practice are to give training and impact to students the necessary skills that would lead to the production of technicians, craftsmen, and other skilled personnel who will be enterprising and self-reliant.

Therefore, students, who undergo training in electrical installation and maintenance practice are expected to possess the relevant practical skills that would enable them to carry out domestic installation, industrial installation, installation of machines and equipment, maintenance of machines and equipment, winding of electrical machines, testing and inspection of

electrical installation, repair of electrical machines among others.

Acquisition of practical skills according to Awotunde in Azonwu (2017) refers to expertise practical ability, dexterity, and tact. It is on the sequence of actions proficiency executed and usually displaying a flexible habit of acting, creative thinking, and behaving in such a way that the process becomes natural to individuals through repetition and practice. However, despite the goals of electrical installation and maintenance practice, various researchers have shown that technical college students studying electrical installation and maintenance practice have little or no skills to compete favorably with their counterparts around the globe on the field (Nwokike, 2014) ; (Azonwu, 2017)

Hence, it becomes imperative to investigate workshop skill acquisition acquired and displayed in electrical installation and maintenance practice among technical college students in Ondo State, Nigeria.

Statement of the Problem

Technical colleges are designed to prepare individual students to acquire practical skills, basic scientific knowledge, and attitude required as craftsmen and technicians at sub-professional levels. Thus, the pivot on which the practical skills acquired and displayed hinges in Vocational and Technical Education programmes is on facilities. In Ondo State, the researcher observed that electrical installation and maintenance practice students poorly displayed skills in electrical installation and maintenance practice. This might be due to the lack of adequate workshop facilities and the use of obsolete tools and equipment in the workshop. All these put together appear to be the major constraint of effective skills acquired and displayed

by the students in electrical installation and maintenance practice.

Purpose of the Study

The major purpose of the study was to investigate the workshop skill acquisition acquired and displayed in electrical installation and maintenance practice among technical college students in Ondo State, Nigeria.

- examined the skills acquired by students of electrical installation and maintenance practice in technical colleges in Ondo State, Nigeria,
- determined the skills displayed by students of electrical installation and maintenance practice in technical colleges in Ondo State, Nigeria
- investigate the relationship between the skills acquired and skills displayed by students of electrical installation and maintenance practice in technical colleges in Ondo State, Nigeria,

Research Questions

The following research questions were formulated to guide the study.

- What are the skills acquired by students of electrical installation and maintenance practice in technical colleges in Ondo State, Nigeria?
- What are the skills displayed by students of electrical installation and maintenance practice in technical colleges in Ondo State?

Hypothesis

H₀: There is no significant relationship between skill acquired and skill displayed by students of electrical installation and maintenance practice in technical colleges in Ondo State Nigeria.

Methodology

Research Design

A descriptive research design of the survey type was adopted for the study. Hence, the study focused on the observations and perceptions of the existing situation, describing and interpreting what concerns issues, conditions, practices, relationships, views, beliefs, and attitudes that were held on a workshop skills acquisition in electrical installation and maintenance practice among students in technical colleges in Ondo State, Nigeria.

The population was two hundred and thirty-nine (239) respondents from government technical colleges in Ondo State, Nigeria. The sample and sampling techniques consist of two hundred and three (203) which comprises one hundred and sixty-four (164) students, both in year three and year two, and (39) teachers that handle electrical installation and maintenance practice. The samples were chosen through a simple random technique. A structured questionnaire was developed by the researchers, Questionnaire (SADEIMPQ) for students, while Skill Acquired in Electrical Installation and Maintenance Practice Questionnaire (SAEIMPQTP) was designed for teachers. The questionnaire was validated by three experts from the Tests and Measurement, Vocational and Technical Education Department in the Faculty of Education, Ekiti State University, The instruments were structured on a five-point Likert scale type of Strongly Agree (5), Agree (4), Undecided (3), Disagree (2) and Strongly Disagree (1). The reliability of the instruments was ensured using Cronbach's Alpha reliability coefficient and the scores obtained are 0.78 and 0.75 for SADEIMPQ and SADEIMPQTP respectively. Copies of the questionnaire were distributed to the teachers and students by the

researchers and the research assistants appointed from each of the technical colleges in Ondo State.

Data collected were analyzed, using descriptive statistics, frequency counts, mean and standard deviation of t-test statistics. The research questions were answered, using frequency counts, mean and standard deviation. The hypothesis was tested with t-test statistics. The hypothesis

formulated for the study was tested at 0.05 level of significance.

Results

Research Question 1:

What are the skills acquired by students of electrical installation and maintenance practice in technical colleges in Ondo State, Nigeria?

Table 1: Mean ratings of practical skills acquired by students of electrical installation and maintenance (N = 203)

Skill acquired	Mean	S.D	Ranking
Domestic installation	3.71	0.73	1 st
Industrial installation	3.62	0.79	2 nd
Cable jointing	3.54	0.83	3 rd
Winding of electric machines	3.38	0.84	4 th

The table 1 shows that the mean rating on electrical installation skills acquired by the students ranges from 3.38 to 3.71. The most acquired skill was domestic installation. This is closely followed by industrial installation and average students acquired in cable jointing, while the students acquired the least skill in the winding of electric machines. However, the standard deviation which ranges from 0.73 – 0.84 indicated that the respondents are very

close in their ratings. This implies that practical skills acquired by students of electrical installation and maintenance practice range from domestic installation to the winding of electric machines.

Research Question 2:

What are the skills displayed by students of electrical installation and maintenance practice in technical colleges in Ondo State, Nigeria?

Table 2: Mean ratings on skill displayed by students of electrical installation and maintenance practice (N = 164)

Skill Displayed	Mean	S.D	Level of display	Ranking
Domestic installation	2.94	0.73	Medium	1 st
Industrial installation	2.94	0.79	Medium	1 st
Cable jointing	2.68	0.83	Medium	3 rd
Winding of electric machines	2.58	0.84	Medium	4 th

Table 2 shows that all the items on electrical installation skills were displayed by students at medium level. The mean rating which ranges from 2.58 – 2.94 indicated that domestic and industrial installation were the most displayed skills, followed by cable jointing, while the least displayed skill was in winding of electrical machines. Also, the standard deviation

which ranges from 0.73 – 0.84 shows that respondents were very closed in their ratings. This implies that skills displayed at a moderate level by students of electrical installation range from domestic installation to winding of electric machines.

Hypothesis

H₀: There is no significant relationship between skill acquired and skill displayed by students of electrical installation and

maintenance practice in technical colleges in Ondo State Nigeria.

Table 3: T-test analysis of the relationship between skill acquired and skill displayed by students and teachers in Electrical installation and maintenance practice in technical colleges in Ondo State Nigeria.

Status	N	Mean	R	P	Remark
Skill Acquired	164	4.41	0.960	0.00	significant
Skill Displayed	39	4.40			

$P < 0.05$. ($r = 0.960$, $P < 0.05$).

Data contained in Table 3 revealed that the mean and standard deviation for the skill acquired and skill displayed by the students and teachers of electrical installation and maintenance practice was 4.41(0.00) and 4.40(0.00) respectively. The r- r-calculated value was 0.960. Since the p-value of 0.000 was less than 0.05 level of significance, indicating a positive relationship between skills acquired and skill displayed. This implies that the skills acquired by the teachers and students were the skills displayed by both students and teachers. Thus the null hypothesis was rejected. This implies that there is a significant relationship between the skill acquired and the skill displayed by the students and teachers of electrical installation and maintenance practice in Government Technical colleges in Ondo State, Nigeria.

Discussion and Findings

The findings shown in Table 1 revealed that the skills acquired by the technical college students of electrical installation trades in Ondo State, Nigeria. The findings show that the most acquired skill by the students of electrical installation was domestic installation. Followed by industrial installation and average students acquired cable jointing, while the students acquired the least skill in winding electric machines. These findings align with the position of NBTE (2001) which maintained that

electrical craftsmen and technicians are expected to acquire practical skills that would enable them to test, diagnose, service, install, and completely repair any fault of electrical machines and equipment, using the manufacturer's manual. The findings were in line with the view of Nwokike (2013) who reported that the goals of electrical installation trades are to give adequate training and impact the necessary skills to the students that would enhance their production as qualified Technicians, Craftsmen and other skilled personnel who will be enterprising and self - reliant.

The findings from the study also revealed the skills displayed by students of electrical installation and maintenance practice in technical colleges in Ondo State, Nigeria. The findings were corroborated by the position Nwokike (2013) who noted that students who undergo training in electrical installation and maintenance practice are expected to possess the relevant practical skills that would enable them to carry out domestic installation, industrial installation, installation of machines and equipment, maintenance of machines and equipment, winding of electrical machines, testing and inspection of electrical installation, repair of electrical machines. Also, the findings agreed with the view of Okechuwu and Reagan (2017) that electrical installation and maintenance practice is a programme introduced to expose

students to practical maintenance of electrical systems to be able to display acquired skills. Finally, the findings in the hypothesis revealed that there is a significant relationship between the skill acquired and the skill displayed by the students and teachers of electrical installation and maintenance practice in Government Technical colleges in Ondo State, Nigeria.

Conclusion

Based on the findings from the study, it could be concluded that skills acquired and displayed by students of electrical installation range from domestic installation to winding of electric machines. Practical skills acquired and displayed in electrical installation by students in technical colleges in Ondo State are highly dependent on adequate training materials.

Recommendations

Based on the findings of this study the following recommendations were made:

- The government should intensify efforts in providing adequate training materials that would enable students to acquire more skills in electrical installation and maintenance practice.
- Students of technical colleges should be encouraged to display skills in electrical installation and maintenance practice, particularly in the winding of electric machines.

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LIBRARIANS' INTERPERSONAL RELATIONSHIP AND UNIVERSITY LIBRARY SERVICES DELIVERY IN SOUTHWEST, NIGERIA

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Abstract

Interpersonal relationship among librarians play a critical role in shaping the quality of services delivered in university libraries. This study investigates the influence of these relationships on service delivery, focusing on communication, collaboration, and team dynamics. The study adopted a descriptive research design of the survey type using quantitative methods. The population of the study comprised of 251 librarians, using all as respondents through complete enumeration sampling techniques eighteen (18) public universities purposively selected Southwest, Nigeria. Three research questions were raised and one hypothesis formulated to guide the study. Well validated questionnaire was used as instrument for data collection. The reliability of the instrument was ensured using the split-half method, and, Cronbach Alpha Statistics to calculate the two responses with overall reliability coefficients of 0.99 at 0.05 level of Significance. Data collected were analyzed using descriptive statistics of percentages, mean, and standard deviation, while the hypothesis was tested using inferential statistics of Pearson Product Moments Correlation Analysis and multiple regression to identify the area of significant difference among the variables. It was found that bibliographic compilation, abstracting and indexing, reprographic, e-library, referral, serials, current awareness services, selective dissemination of information, editing, language translation among others were available to users, librarian's level of service delivery in terms of empathy, assurance, responsiveness, reliability and tangible with high level of interpersonal relationship among librarians. The hypothesis showed a significant positive relationship between interpersonal relationship and service delivery. The study concluded that the existence of cordial relationship among librarians dictates the level of achievement of library service delivery, and the respective factor of communication, social support, team building, relational-justice plays crucial roles in making interpersonal relationship among librarians influence library services delivery. It was recommended that professional development and clear communication through seminars, workshops, training and retraining of library staff be regularly carried out on interpersonal relationships.

Keywords: University libraries, librarians, library services delivery, interpersonal relationships, users' satisfaction

Introduction

All libraries globally strive to deliver the highest quality services that fully meet the expectation and information requirements of their

clienteles. The library offers its customers many services, including orientations, tours and demonstrations, book and journal circulation privileges, interlibrary loan

services, remote computer access to the library computer system, access to computerized literature searches, access to audiovisual materials and equipment, and other services. The academic library has traditionally been seen as the heart of the university, which serves the academic community of its parent institution and occupy central position in their any academic environment (Virkus & Metsar, 2004). The traditional role of the library is to select and acquire, classify, catalogue and make it available for users to get the information they need for their academic and research purpose. Consequently, each university library is a collection of learning and research resources, through which various information services are provided to faculty, researchers and students to support learning, teaching and research activities (Vishala & Bhandi, 2009). In connection with this, high level library user satisfaction is a fundamental goal, and academic libraries of higher education institutions are required to provide faculty and students with facilities necessary for equipping them in their subjects of study, techniques, skills and how to think through situations relating to their teaching or research or learning. The conventional libraries confined within a physical space are slowly transforming into digital information resources centers for effective library services. According to Ankrah and Amponsah (2021), despite the technological, human resources and funding challenges however, library staff must still continually see themselves as crucial mediators between library resources and users and continue to portray good values and attitudes toward ensuring high quality information services.

University library as the center of academic activities provides information resources and services to support the

teaching, learning and research needs of parent institution. Its users are the students, lecturers, researchers and other scholars who need current and up-to-date information resources to carry out their assignments, researches and for day-to-day decision making. Therefore, the success of a university library largely depends on the quality of services it renders to its users. In essence, university library is part of a service organization which delivers information products personally to the users, and dedicates resources to them. It formulates a strategic plan and focuses on providing the best services possible, and as well reaches a state of continuous improvement. According to Olanlokun (2013), service delivery in the university library is the effort librarians put in place within and outside available resources to facilitate results towards every user's query, and meeting their overall information needs. They added that functions of library services arise from circulation services, reference services, online information services, inter library loans, and information literacy skills training. These are the resources activities, programs and so on. which are provided by librarians to enable users meet their information needs. Libraries offer services to the users according to their identified needs and libraries' success is generally measured by the satisfactions of users.

Service delivery in university library requires the full cooperation and commitment of all the employees in the library including management. Velmurugan (2016) affirmed that inter personal relationship is an important aspect of every organization including the library, while the staff are valuable assets, the library wants to improve its efficiency in order to survive and compete with other libraries. The study added that interpersonal relationship could only be achieved through human relations. This is an indication that human relations motivates individuals in institutional setting to develop the

work which accomplished individual as well as meet the organizational goal effectively. According to Reddy (2017), performance of the libraries as the information system mainly relates to accuracy of the services, adequacy of and need-based services, and timeliness of the services. Library services are routine services rendered to users of academic libraries. These services are the provision of various information sources and resources to library clienteles for learning, teaching and research purposes. Bshorun, Omopupa and Dahiru (2020) listed library services to include but not limited to collection development, cataloguing and classification, reference services, current awareness services (CAS), selective dissemination of information (SDI), Inter library loan (ILL), information and referral service, and other bibliographic services. Librarian's Registration Council of Nigeria Standard and Guidelines for Academic Libraries in Nigeria- LRCN (2019) stated that, library services include circulation services, reference information service, Current Awareness Services (CAS), Selective Dissemination of Information (SDI), Literature Searching, On-Demand Service, Inter Library Loan Services/Library cooperation, Library services for people with special needs e.g. Prisoners, hospital patients, rural dwellers etc. Readership Campaign, Exhibition, Advocacy etc. In view of Zhong and Alexander (2007), library services are circulation services, electronic reserves, print reserves, pay-to-print library reference area, interlibrary loan, renewing books online, and renew books in person. A study by Anaeme and Anyaegbu (2010), listed Library services to include listing services, catalogue bibliographic display, current awareness services, internet-on-line facility services, photocopy(reprography) inter-library loan service, reference services, binding services, provision of reading carrels and seats, coordinating more closely with

local schools, offering free literacy programme to help young children, having more comfortable spaces for reading, working and relaxing, and offering a broader selection of e-books. In the digital age, Ahiauzu (2008) reiterated that library services in Nigeria include provision of library services to rural populace as well as devising effective marketing strategies of available library/information services to end users, and equipping of library schools with modern ICTs in order to meet users' demands and expectations in the emerging digital information environment.

The performance of any library is usually a reflection of how effectively and efficiently the human and other productive resources of the library are galvanized and managed by the library management. According to Agba (2018), interpersonal relationships and communication can serve as an important mechanism through which the effectiveness, efficiency and quality of services rendered by the libraries are gauged, evaluated and measured. It is, therefore, imperative for university libraries to observe, assess and analyse how their staffs relate with one another, the users and the society. Interpersonal communication skills in the administration of library service delivery occupy the integral position of university library management especially library service delivery. Posigba, Etebu and Godfrey (2018), Anyim (2020) conducted research on interpersonal communication in academic libraries agreed that interpersonal communication in the library is a vital tool in information services delivery. Rahyadi (2021) rated interpersonal communication among librarians in service delivery belongs to high category and the vital purpose of the library to provide satisfaction to the users of the services, facilities and collections contained in the library. A healthy employee relationship ensures a positive environment at work and also helps the

employees to achieve their targets at a much faster rate. Bhatti (2009) identified that, good library services totally depend on trained and efficient library staff. The librarians thus perhaps need to develop positive working relationships. The librarian will have to maintain good interpersonal relationship and acquire good teaching skills in order to contribute positively to the educational process.

Fapohunda (2013) study towards effective team building in the workplace and specified that, in a team-oriented environment, individuals contribute to the overall success of the organization. They work with other members of the organization to produce desired products and services. The unity, cooperation, understanding and team spirit that bind the workers together usually help the organization to achieve goals and objectives for which the business was established. Velmurugan (2016) posited that interpersonal relationship usually involves some level of interdependence. People in relationship tend to influence each other, share their thought and feelings, and engage in activities together. Because of their interdependence, most things that change or impact one member of the relationship will have some level of impact on their member. Velmurugan (2016) stressed that interpersonal relationship has direct effect on the organization culture, and that misunderstandings and confusions lead to negativity at the work place, conflicts lead people to nowhere but in turn spoil the work environment. Anjum, Abbas and Hussain (2020) asserted that interpersonal relationship builds interactions between relations, co-workers/ managers, librarians and their users.

Since organizations are majorly characterized by the presence of human resources to coordinate and manage the activities of the organization, interpersonal relationships are inescapable concrete realities of modern

organization including the library. Agba (2018) posited that the effects (positive and negative) of interpersonal relationship in the workplace are largely conditioned by the nature of interpersonal relationships existing between and among workers in the organizations. If such interpersonal relationships are cordial, purposeful, and effective, then its effect on the performance of the organization and workers will be positive. Negative interpersonal relationships in the workplace if not properly managed and handled by the parties involved and the human resource department could result in depression, anxiety, boredom, labour turnover, poor performance, physical restlessness, reduction in quality of life, and negative behavioural changes which impair workers' performance (Agba, 2018). Interpersonal relationship in the workplace has been found to affect behavioural attitude of workers.

As librarians evolve to meet the changing demands of technology, digital resources, and user expectations, strong interpersonal relationships among staff members are crucial. This helps in fostering an environment where staff can easily share knowledge, adapt to new systems, and provide continuous learning and development for better service delivery. Librarians often serve as the first point of contact for patrons. Their ability to build positive relationships with users can enhance communication, making it easier for patrons to express their needs and for librarians to provide relevant resources and support. Strong interpersonal skills lead to higher levels of user Satisfaction and loyalty. In many libraries, librarians work together as a team to deliver services. Strong interpersonal relationships among staff members improve collaboration, ensuring that library operations run smoothly. When staffs work together, it creates a more efficient and supportive environment, directly benefiting service delivery. Furthermore, libraries can sometimes be

high-pressure environments, especially when dealing with resource constraints or diverse user needs. Good interpersonal relationships help libraries manage conflicts among themselves or between patrons and staff, ensuring that issues are resolved amicably and without disrupting services. Libraries with strong interpersonal skills can better engage with the community. Oden and Owolabi (2021) reported that despite the low financial resource allocation as detailed in the NUC Needs Assessment, Nigerian academic libraries have embraced the need to establish systems to enhance internal communication, cooperation and collaboration with users. The study added that staff attitude had a significant influence on service delivery in university libraries and that services delivery of university libraries in the aspect of tangibles and reliability will bring satisfaction to the recognized need of the users. Staff attitude goes a long way in library service delivery influences the patronage of the library resources.

Interpersonal relationship is described as a very important issue that influences the level of employee productivity in any organization (Nwinyokpugi & Omunakwe 2019). Understanding the emotions of others and differentiating them would bring out information that could be used to guide staff behaviour and thinking (Jaksic & Schlegel, 2020). Also, Obiekwe, Mobolade and Akinade (2021), Fapohunda (2013), Arrey (2014) at various times opined that the need to harness individual potential through working in teams has necessitated the shift from working alone to working in teams which require employees co-operate with each other, share information, confront differences and sublimate personal interests for greater good of the team. By building relationships with individuals and groups within the university community, librarians can create programmes and services that are more tailored to the

community needs, thereby increasing the library's relevance and impact.

Social support refers to the helpful social interactions that exist between employees, employers, superior and subordinate in an organization. According to Nwinyorpuji and Adiele (2018), social support appears to be the most studied dimension of interpersonal relationships at work. When an employee does not receive the required level of cooperation and support expected from superiors and other colleagues at the workplace, it could impact on the level of productivity or service delivery. The study stressed further that the norms and established traditions for interpersonal interaction will set what we consider minimum level of support and that lower level of social support could be detrimental to the employee and the organization. Viswesvaran, Sanches and Fisher (2000) viewed social supports as involving perceptions that one has access to helping relationship of varying quality or strengths, which provides resources such as communication of information, emotional empathy, or intangible assistance. Social support refers to the various levels of interaction within and outside employees of the organization. It is a forum where members interact to have ideas, information and create interpersonal relationships.

The concept of relational justice describes the relation between the employees and their managers, who supposedly represent their respective organization. As regards university Library, this refers to the relation between the library staff, Librarians and the head of library. The consideration of library staff viewpoints in matters concerning their welfare and the library's growth is very essential. In relational justice, employees are expected to be treated equally without bias from supervisors or the management. Casanovas and Poblet (2008) stated that relational

justice is the justice produced through cooperative behaviour, agreement, negotiation, or dialogue among actors. Relational justice is an interactive strategy that facilitates fairness, equal treatment and balanced motivational appreciation. Viswesvaran et al (2000) recommended that expect efficiency and high level of productivity from their employees should adopt relational justice interactive strategy. Omunakwe, Nwinyokpugi and Adiele (2018) argued that in relational justice, employees are expected to be treated equally without bias, from supervisors or the management. When workers are motivated through unbiased management strategies, the organization's productivity or services are increased.

In a similar study by Alase and Akinbo (2022), interpersonal relationship within the organization provides the employee with the right atmosphere to communicate and contribute to their own quota to the development of the organization. It was revealed that factors such effective communication like employee opinions are valued and appreciated within the organization. Their study also discovered that interpersonal relationship within the organization provides the employee with the right atmosphere to communicate and contribute to their own quota to the development of the organization. It was revealed that factors such effective communication like employee opinions are valued and appreciated within the organization team building like organization work as a team. Others include team, and social support. According to Segrin and Taylor (2007), positive relations with other people would mediate the association between social skills and psychological well-being, while Omunakwe, Nwinyokpugi and Adiele (2018) saw interpersonal relationship

as an important aspect in every organization and beyond. Agba (2018) summarized interpersonal relationship as intimate, strong, close association and solidarity that exist between and among workers in an organizational setting. Therefore, investigating librarians interpersonal relationships could help discover strategies to improve library services, ensuring that university libraries remain responsive, and efficient in their mission to support learning, research, and community engagement.

Statement of the Problem

Effective library services delivery has been found to be critical for efficient dissemination of information, and overall user experience. As libraries continue to evolve with technological advancements and changing user needs, it has not been well established if interpersonal relationships among librarians have significantly influenced the effectiveness of library service delivery. However, study revealed that strained relationship and inadequate inter personal skills and poor communication could lead to dissatisfaction among library users and decreased patronage of library services. Furthermore, there is dearth of literature on direct association between librarians' interpersonal relationships and quality library services delivery. Therefore, this study explored how librarians' interpersonal relationships influence university library services delivery in Southwest, Nigeria, and suggested strategies for improving such relationships to enhance overall library performance and users satisfaction.

Objective of the Study

The main purpose of this study was to investigate the impacts of librarians' inter-personal relationship on efficient university library services delivery in Southwest, Nigeria. Specifically, the study aimed to;

- i. identify the available library services in university libraries in Southwest, Nigeria
- ii. determine the extent of implementing the available services in the study area
- iii. ascertain the extent of interpersonal relationship among librarians in university libraries in South-west, Nigeria

Research Questions

1. What are the available library services in university libraries in Southwest, Nigeria?
2. To what extent were the available library services implemented in the study area?
3. What is the extent of interpersonal relationship among librarians in university libraries in South-west, Nigeria.?

Hypothesis

This null-hypothesis was formulated and tested at 0.05 level of significance

H₀, there is no significant relationship between librarians' interpersonal relationships and university library service delivery.

Scope of the Study

The study investigated interpersonal relationship as determinants of library services

delivery in university libraries in Southwest, Nigeria. It is also delimited to Eighteen (18) Public Universities (Federal and State) in Southwest Nigeria. It focused on 251 Librarians working in the selected libraries at the time of this study as respondents.

Methodology

This study adopted a descriptive research design of the survey type using quantitative methods. The population of the study comprised of 251 librarians practicing in the existing, using complete enumeration sampling techniques. Eighteen (18) public universities in Southwest, Nigeria were purposively selected as study area. Questionnaire was adopted to solicit information from the respondents (quantitative). Validity of the instrument was carried out to establish the adequacy and content validity by experts in the field of library and information science and test and measurement. To ensure the reliability of the instrument the split-half method was used to collect data and, Cronbach Alpha Statistics was used to calculate the two responses which yielded overall reliability coefficients of 0.99 at 0.05 level of Significance. Data collected were analyzed using descriptive statistics of percentages, mean, and standard deviation to answer the research questions, while the hypothesis formulated was tested using inferential statistics of Pearson Product Moments Correlation Analysis and multiple regression analysis to identify the area of significant difference among the variables.

Results

251 questionnaires were administered and 242 copies retrieved and found useful for analysis representing 96.4%.

Table 1: library services available to users in the university libraries in South-west, Nigeria

Highly Available-HA, Moderately Available –MA, Available- A, Not Available- NA, Undecided-UD

S/N	Availability of Library Services	HA 5	MA 4	A 3	NA 2	U D 1	$\bar{x}$	Std.
1	Bibliographic compilation	145	40	33	12	12	4.21	1.16
2	Abstracting and Indexing	89	89	38	18	8	3.96	1.06
3	Reprographic Services. (photocopy)	124	68	37	8	5	4.23	0.97
4	Printing and Binding	129	54	36	15	8	4.16	1.10
5	e-Library	148	59	2	5	10	4.36	1.01
6	Inter-Library loan	87	83	32	27	13	3.84	1.18
7	Reference services	132	73	29	5	3	4.35	0.86
8	Editing	83	82	24	40	13	3.75	1.24
9	Language translation	95	59	30	40	18	3.71	1.33
10	Library Education	132	80	2	3	7	4.35	0.90
11	Textbook Loan Services	134	64	24	12	8	4.26	1.04
12	Social Media platform	104	75	33	21	9	4.01	1.12
13	Internet accessibility	136	59	32	11	4	4.29	0.97
14	Referral services	112	70	37	13	10	4.08	1.10
15	Current Awareness Services (CAS)	108	82	30	15	7	4.11	1.04
16	Selective Dissemination of Information (SDI)	105	81	39	10	6	4.12	0.99
17	Users Query Services	119	74	31	10	8	4.18	1.03
18	Newspaper Clippings	115	76	31	16	4	4.17	1.00
19	Serials services	137	70	24	9	2	4.37	0.87
20	Seminar/Workshop	105	81	33	10	13	4.05	1.11
Aggregate Mean/Std.							4.13	1.05
Criterion Mean							3.00	

Table 1 reveals that, all the twenty listed services are available in university libraries in South-west, Nigeria. It shows that aggregate mean of 4.13 (Std. = 1.05) is greater than the criterion mean of 3.00. This implies that library services such as bibliographic compilation, abstracting and indexing, reprographic, e-library,

referral, serials, current awareness services, selective dissemination of information, editing, language translation, reference services, inter library loan, user query services among others are available to users in the university libraries in South-west, Nigeria.

Table 2: extent of implementing available library services delivery

Very High Extent-VHE, High Extent-HE, Moderate Extent-ME, Low Extent-LE, Undecided-UD

S/N	Extent of Library Services Delivery	VHE 5	HE 4	ME 3	LE 2	UD 1	$\bar{x}$	Std.
Empathy								
41	Librarians are genuinely concerned about library users.	178	37	10	3	14	4.50	1.05
42	Librarians understand the individual information need of users.	115	91	19	4	13	4.20	1.03
43	Librarians have the users' best long-term information interest in mind.	130	73	19	7	13	4.24	1.08
44	Librarians encourage and motivate users to access library resources.	137	70	17	6	12	4.30	1.05
	Average Mean						4.31	1.05
Assurance								
45	The Librarians are knowledgeable in their individual field.	145	72	8	4	13	4.37	1.02
46	The Librarians are fair and impartial in assisting the library users' source for information.	121	87	14	6	14	4.22	1.07
47	Librarians answer all queries thoroughly from the users.	118	86	14	7	17	4.16	1.13
48	I am confident the Librarians have an expert understanding of the library resources.	127	81	14	4	16	4.24	1.09
	Average Mean						4.25	1.08
Responsiveness								
49	The Librarians quickly and efficiently respond to users' information needs.	135	74	18	2	13	4.31	1.03
50	The Librarian is willing to go out of his or her way to help library users to access information.	115	79	24	9	15	4.12	1.13
51	The Librarians at all-time welcome users' queries and comments.	129	74	15	8	16	4.21	1.13
	Average Mean						4.21	1.10
Reliability								
52	The library consistently provides good orientation and user education.	134	70	13	9	16	4.23	1.14
53	The Librarians are dependable at all time	136	67	18	6	15	4.25	1.11
54	The Librarians reliably assist users to access information when needed.	134	70	15	5	18	4.23	1.15
	Average Mean						4.24	1.13
Tangible								
55	The library is modern and updated.	126	80	14	5	17	4.21	1.12
56	The physical environment of the library aids learning.	142	66	18	4	12	4.33	1.03
57	The library is equipped with all necessary facilities to aid learning and research work	132	69	18	10	13	4.23	1.11
58	The library is kept clean and free of distractions.	141	72	11	6	12	4.34	1.03
	Average Mean						4.23	1.07
	Aggregate Mean/Std.						4.26	1.08
	Criterion Mean						3.00	

Table 2 shows the extent at which the available library services delivery were implemented in the study area, the result shows that librarian's level of service delivery in terms of empathy (Mean = 4.31, Std. = 1.05), assurance (Mean = 4.25, Std. = 1.08), responsiveness (Mean = 4.21, Std. = 1.10), reliability (Mean = 4.24,

Std. = 1.13) and tangible (Mean = 4.23, Std. = 1.08) are all higher than the criterion mean of 3.00. With an aggregate mean of 4.26 (Std. = 1.08) which is greater than the criterion mean of 3.00, it can be deduced that extent of library services delivery university libraries in South-west, Nigeria is high.

Table 3: the extent of interpersonal relationship among librarians in university libraries in South-west, Nigeria

Very High Extent-VHE, High Extent-HE, Moderate Extent-ME, Low Extent-LE, Undecided-UD

	Extent of Interpersonal Relationship	VH E	HE	ME	L E	VLE	$\bar{x}$	Std.
Communication								
98	Information flows from university librarian to the librarians and to the subordinates.	156	53	14	5	14	4.37	1.08
99	Librarians are heads of department	111	75	22	5	29	3.97	1.31
100	Communication is channelled from librarians to heads of departments.	134	66	22	2	18	4.22	1.14
101	Communication is accessed through hard copies as circulars.	99	89	26	8	20	3.99	1.18
102	There is departmental, heads of department and general meetings where oral communication is used	126	70	20	5	21	4.14	1.21
103	There is library academic staff platform where librarians share and access information	124	74	20	6	18	4.16	1.16
104	There is a workshop, seminars, conferences where librarians interact and exchange ideas.	108	85	17	6	26	4.00	1.26
105	Librarian access, share information for research on social media.	98	91	27	6	20	4.00	1.17
	Average Mean						4.12	1.19
Social Support								
106	Librarians encourage each other to achieve individual and organizational goals.	121	79	23	3	16	4.18	1.10
107	Library management motivate librarians to attend seminars, workshops and further trainings.	117	72	33	3	17	4.11	1.14
108	Librarians relate with each other on academics, social and economic levels for development.	113	90	19	3	17	4.15	1.10
109	Depressed librarian(s) are counselled, motivated, encouraged on challenges.	94	92	27	4	25	3.93	1.22
110	Librarians interact on social engagements of their individual and organization.	112	76	28	6	20	4.05	1.19
111	Librarians form research groups in publication and conferences.	134	53	19	8	28	4.06	1.35
	Average Mean						4.08	1.18
Team Building								
112	The university library is departmentalized.	136	68	12	3	23	4.20	1.21
113	Library groups are indexers, cataloguers, ICT professionals, abstractors, etc	124	70	22	8	18	4.13	1.18
114	Library management encourages group participation.	110	83	27	5	17	4.09	1.13
115	Library tasks are solved through groups and committees.	101	88	24	11	18	4.00	1.17
116	The library management assign constituted groups to achieve library goals.	110	81	27	8	16	4.08	1.14
117	Individual opinions, views, ideas and initiatives are welcome to solve many challenges in groups.	102	92	18	8	22	4.01	1.21
	Average Mean						4.51	1.17
Relational Justice								
118	Library management respect librarian personality	118	79	21	3	21	4.12	1.18
119	There is no partiality when handling individual librarian's welfare.	110	78	32	4	18	4.07	1.15
120	The library management attach much importance to academic growth of librarians.	110	82	29	4	17	4.09	1.13
121	There is fair academic assessment of each librarian without prejudice.	114	77	29	4	18	4.10	1.15
122	Librarians are allowed equal access to human capital development.	107	81	27	7	20	4.02	1.19
	Average Mean						4.40	1.80
Aggregate Mean/Std.							4.09	0.97
Criterion Mean							3.00	

Table 3 reveals the extent of interpersonal relationship among librarians in university libraries in South-west, Nigeria. The result shows

that interpersonal relationship constructs of communication (Mean = 4.12, Std. = 1.19), social support (Mean = 4.08, Std. = 1.18), team building (Mean = 4.51, Std. = 1.17) and relational justice (Mean = 4.40, Std. = 1.80) are of high extent in university libraries in South-west, Nigeria because the average mean score of each of the listed factors are greater than the criterion means of 3.0. Therefore, with an aggregate mean of

4.09 (Std. = 0.97) which is greater than the criterion mean of 3.00, it can be deduced that the extent of interpersonal relationship among librarians in university libraries in Southwest Nigeria is high.

Testing the Hypothesis

H₀₁ there is no significant relationship between librarians' interpersonal relationships and university library service delivery

Table 4: The Relationship between Interpersonal Relationship and Services Delivery

		Interpersonal Relationship	Library Service Delivery
Interpersonal Relationship	Pearson Correlation	1	0.727**
	Sig. (2-tailed)		0.000
	N	242	242
Library Service Delivery	Pearson Correlation	0.727**	1
	Sig. (2-tailed)	0.000	
	N	242	242

From Table 4, Pearson correlation coefficient r (= 0.727) which implies a positive high relationship ($P=81\%$). Since the significant value (Sig.2-tailed) is 0.000 (which is less than 0.05). The null hypothesis is rejected. It can be concluded that there is a significant relationship between interpersonal relationship and service delivery in university libraries in Southwest Nigeria.

Discussion

Research objective one sought to find the availability of library services in the university libraries in South-west, Nigeria. The findings of the study revealed that bibliographic compilation, abstracting and indexing, reprographic, e-library, referral, serials, current awareness services, selective dissemination of information, editing, language translation, reference services, inter library loan, user query services among others were available

to users in the university libraries in South-west, Nigeria. This corroborated the findings by Anaeme and Anyaegbu (2010), which listed Library services to as; listing services, catalogue bibliographic display, current awareness services, internet-on-line facility services, photocopy (reprography) inter-library loan service, reference services, binding services, provision of reading carrels and seats.

Research objective two sought to ascertain the extent at which the available library services were implemented in the study area. Findings from the study reveal that the extent of library services delivery in university libraries is high. The findings show that librarian's level of service delivery in terms of empathy, assurance, responsiveness, reliability and tangible were high. The findings is in agreement with that of Oden and Owolabi (2021) that services delivery of university libraries in the aspect of

tangibles and reliability will bring satisfaction to the recognized need of the users and that staff attitude goes a long in library service delivery influences the patronage of the library resources.

Research objective three sought to ascertain the extent of interpersonal relationship among librarians in university libraries in South-west, Nigeria. The findings of the study reveal that there is high level of interpersonal relationship among librarians in university libraries in South-west, Nigeria. This implies that the existence of cordial relationship among librarians dictates the level of achievement of library service delivery. Each respective factor of communication, social support, team building, relational-justice plays crucial roles in making interpersonal relationship among librarians in determining library service delivery in universities in Southwest, Nigeria to be high. This finding agrees with Bankole (2023) study on organizational commitment and interpersonal relationship of library personnel as determinants of work performance in Nigeria universities. The authors linked librarians work performance to gauge the efficient delivery of library service in the library system. The factors of interpersonal relationship like communication, social support, team building and relational justice constitute solid bedrock upon which the strength of interpersonal relationship is connected together. The strong connection is identified in the study of Alase, and Akinbo (2022) on interpersonal relationship and employees' performance in selected Nigeria banks, that high quality interpersonal relationship improves the work performance of employees through improved communication, motivation, teamwork, assisting each other's and improvement in the

performance of employee. While destructive relationship within the organization creates friction and unhealthy rivalry within the organization and tends to dampen the performance of the employee instead of improving.

Conclusion

Based on the findings of this study, it was concluded that there is a connection between various factors of interpersonal relationship (Communication, Social Support, Team Building, and Relational Justice), and effective library service delivery. Librarians in public universities in Southwest, Nigeria enjoyed a very high level of interpersonal relationship resulting in quality services delivery in a very high extent in terms of empathy, assurance, responsiveness, reliability, tangible and better performance in meeting the users' information needs.

Recommendations

It was recommended that regular seminars, workshops, training and retraining should be organized for library staff on strategies and ways to strengthen their interpersonal relationships to improve the library service delivery for users' quick information access and satisfaction.

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IMPLICATION OF POST COVID-19 PANDEMICS ON THE ACADEMIC PERFORMANCE OF BASIC ELECTRICITY STUDENTS OF FEDERAL GOVERNMENT COLLEGE, IKOLE EKITI.

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Abstract

The study intends to determine the implication of post COVID -19 pandemics on the academic performance of Basic Electricity students of Federal Government College, Ikole Ekiti. The study also entails the status of Basic Electricity before, during and after covid-19 pandemics. The study reviews some topics of Basic Electricity that can be taught effectively online. The study also reveals the place of students and society on COVID 19 pandemic. The study discusses the parents' views about students learning. The study itemizes the challenges students faced during COVID 19 pandemic. It also addresses the place of Basic Electricity students at Federal Government College, Ikole, Ekiti, Ekiti State, Nigeria. The following recommendations among others are made. Government should improve on the condition of health companies where encouragement will be disbursed to different medical researchers to do more research on getting or acquiring a better health stability.

Keywords: Academic Performance, Basic Electricity, Students, Federal Government College, Ekiti State

Introduction

Coronavirus otherwise known as Covid-19 is a world-wide known disease that affected nearly all economic activities across the globe. It is highly transmitted and pathogenic viral infection caused by severe acute respiratory syndrome (Shereen 2020). People contract the illness when a liquid particle from the infected carrier spread out to another person. It is a generated disease that come into existence in the year 2019. Abebe (2020) describe covid-19 as an illness caused by a novel coronavirus now called severe acute respiratory syndrome. The World Health

Organization W. H.O. (2020) stated that Covid-19 is an infectious diseases caused by the sars-cov-2 virus. According to the organization, people contract the disease when getting closer to the infected carrier through the liquid particle spreading from coughing sneezing speaking, singing or breathing. The virus was discovered in China city of Wuhan in December 2019. The effort to reduce the spread were unsuccessful as the virus spread out to other areas of Asia and later worldwide. The era of Covid-19 pandemics discourages togetherness as it does even in post Covid-19 pandemics era.

Post covid-19 pandemic was tagged neurological symptoms. There are many diseases that had been existing before covid-19 pandemic in the world wide like; headache, sleep problem, change in smell or taste, depression or anxiety to mention a few. Post covid-19 ailments are curable. It depends on how the concern parties cares for their body system. It was noted that there were several ways of caring for the body system which include; take deep breaths, stretch, meditate or practice mindfulness, eat healthy, well balanced meals, doing exercise, listening to notice of the body, adequate sleeping avoid taking alcohol and hard drugs.

Post covid-19 condition occur with ailments that are not deadly contactable among the society globally. It is a condition where citizens manage to achieve several ways of developing the economy of the country by continuous economic activities. Above all, it is a pandemic that aids in gathering of students in a conducive environment and it helps the teaching and learning process among the students.

Students are individual regardless of age who want to study in order to become a responsible person in the society. According to Wikipedia (2023), a student is a person who enrolled in a school or educational institution with the mindset of becoming a better person in the future. Students enrolled into different educational institution like Federal Government Colleges, State Colleges in order to pursue their dreamed careers. According to Bash (2023), Federal Government College is an institution that was established by the federal government to enhance good education in the country. It is a college where students were developed in their respective dream careers.

In the world today, there are different stages a student will undergo in order to achieve the tagged purpose of life. These stages will allow each student to identify what he/ she wishes to become in future such as a Lawyer, Doctor, Teacher, Engineer, Pilot to mention a few. Students should possess the habits of thinking and reasoning to make them productive in all things they lay their hands on. (Olaoye, Oyewusi, Ogunmilade, Ogunmilade, Ogundola & Olaniyi, 2019) As a case study, students of Federal Government College Ikole enrolled from different states of the federation. The school observed both boarding system and day system of schooling. Boarding system housed students who enrolled into the institution and are living in an accommodation offered by the federal government which is called boarding system. Boarding System cares for gender and healthy living of all students enrolled in any institution in the country. The day students enrolled into the institution but are coming daily to the school from their parent home to pursue their dream profession or career. To acquire a profession there are subjects attached at the secondary school level which student must pass at distinction and credit level. A student who wants to pursue an engineering or technical courses for example must have distinction or credit in English Language, Mathematics, Physics, Chemistry and one vocational subject like Basic electricity which will be an added advantage for engineering courses.

Basic electricity is one of the vocational subjects in secondary schools. The subject is an eye opener to students who want to study electrical/electronic engineering as a course that provide opportunity as at all academic shapes. Basic electricity is the elementary study of electrical/

electronic circuit and the movement of electric charges. It is the study of form of energy used in generating electricity. It reveals more on ways to produce electricity which include; the sun, water head, the fuel and the nuclear energy to mention a few. Basic electricity also deals with the importance of circuit and its components which enable technology of a country to be developed.

Basic electricity finds its application in health care establishment, engineering transport and communication as well as household activities. Learning Basic electricity is important for general technological literacy. Students that are studying Basic electricity are exposed to the concepts of science on electricity and the careers involve in studying electrical/electronic engineering. Careers available for the students who study electricity which includes, Electrical Technician, Electrical Engineer, Specialized Technician, Principal Electrical Engineer to mention a few. Federal government college was established in each state for the acquisition of basic skill in Electricity.

Federal Government College Ikole in Ekiti State is one of the colleges established in the year 2000, under the supervision of the federal ministry of education.

Federal Government College Ikole Ekiti is an institution with many departments such as Language department, Technology department, Mathematics department, Guidance and Counselling department. Each department teaches students according to the approved standardized curriculum for better progression after graduation for further studies in higher institution both within and outside the country. Technology department hosts vocational and technical education subjects like; Basic

Electricity, Technical Drawing, Food and Nutrition, Agricultural Science and Home Economics. Establishing an institution like Federal Government College in Ikole Ekiti, has made the entire state a lot of good citizen. Federal Government College Ikole-Ekiti is located at the northern part of Ekiti State. It is situated between Ayedun and Ikole Ekiti.

Ekiti is one of the states that was carved out of Ondo State on the 1st of October, 1996 by General Sanni Abacha. Ekiti state is one of the Yoruba speaking states. The people of Ekiti state accommodate other tribes such as Ebira, Hausa, Fulani, and Igbos who co-exist with people peacefully. According to Wikipedia (2023), Ekiti is one of the smallest state in Nigeria. Ekiti is the 31st largest in the area and the 30th most populous with an estimated population of 3.3million. The major languages in Ekiti State are Yoruba and English. English as the second and the official language. Ekiti is a state that is being referred to as the fountain of knowledge and it has sixteen local governments monitored by council chairmen elected by the people of the state. Ekiti has two universities known as Ekiti State University Ado-Ekiti (EKSU) and Bamidele Olumilua University of Education, Science and Technology, Ikere Ekiti (BOUESTI). One Federal University, Federal University Oye Ekiti (FUOYE). Two owned private polytechnics. Crown polytechnic is located between Ado Ekiti and Ilawe, Ajayi Polytechnic Ado Ekiti located between Ado and Ikere road. One owned State polytechnic, Ekiti State polytechnic which is newly positioned at Isan Ekiti. These institutions were established to elevate the academic performance of the students.

Academic performance of the students is part of the tools for assessing the wellbeing of an

institution. Academic performance is the knowledge gained which is accessed by the score of the students. When the academic performance of the students is positively skewed, it gives a high rate to the performing capabilities of the teachers. Brew (2021), state that academic performance is affected by many factors including parents' educational level and income. Parents educational level deals with the academic performance of the students. The kind of parents' students have tell more about the performance of the students

Status of Basic Electricity before, during and after Covid 19 Pandemics

Prior to the pandemic, many secondary schools in Nigeria especially the Federal Government College, Ikole Ekiti did not have access to Electricity. There was epileptic Electricity supply. This hindered the teaching of Basic Electricity concepts such as introduction to electricity, electric charge and current, voltage and resistance, ohm's law, electric circuits such as circuit analysis, circuit components, electric power and energy in Federal Government College, Ikole Ekiti.

During the era of Covid 19 pandemic, students in various classes were re-arranged to create adequate spaces for leaning in order to prevent the spread of the disease. It got to a point where various schools in Ikole local government were closed. Various challenges faced the teaching of basic electricity in Federal Government College, Ikole Ekiti. This school transitioned to online models using Zoom, WhatsApp, Google among others. In Ikole local government, many secondary schools moved to online methods of teaching which made it difficult to teach basic electricity. Many of the secondary

schools moved to online classes. Online method is not appropriate for teaching basic electricity in secondary schools because there is no option for teaching the subject. A lot of challenges are facing the teaching of Basic Electricity during Covid 19 pandemic using virtual learning. Okoro in Olaoye and Adameji (2023) stated that several factors ranging from inadequate funding, non-recognition of ICT infrastructures hamper the usage and implementation of ICT devices in teaching and learning. Virtual learning encompasses many problems during Covid 19 pandemic. Innovations in educational system are problematic to classrooms teachers who will put the theory into practice because of difficulties in changing habits, anxiety, sense of futility in attempting to adopt the new idea, and fear of failure; lack of time needed to prepare teachers for acquaintance with the new idea, individual and gender differences, imbalance between the theory and practice, experience, lack of computer competence could be source of barrier to teachers' inability to integrate the e-learning (Chuma in Olaoye & Adameji, 2023). During Covid 19 Students were taught how to make use of precautionary measures to prevent this disease. These include the following

1. Wash hands with soap as soon as you arrive school
2. Maintain a social distance of a metre at all times.
3. Gather outdoors or in a well-ventilated areas.
4. Avoid kissing, hugging and touching each other
5. Have disposable cups and write each person's name on them to avoid sharing cups or accidentally drinking from someone else's cup
6. If someone in your house is high-risk (over the age of 65, lung disease, asthma, diabetics, heart or kidney disease) avoid hosting

such a family at your home (NCID, 2023)

After Covid -19, all the schools in Ikole local government, Ikole Ekiti, Ekiti State resumed academic activities and they obeyed all the precautionary measures governing Covid 19. This made Federal Government College to resume for academic activities. The teaching of Basic Electricity has slowly resumed till today. Some schools have adopted online simulations and virtual laboratory to teach electricity concepts which has improved students and understanding.

Students and the Society.

Covid-19 pandemic has brought unprecedented educational disruption with several students and youth across the planet. It has not undermined trust in the capacity of public services such as education and health to respond to the crisis but has raised more fundamental concerns about a potential erosion of human rights. The virus threatens everyone, human right uplift everyone by building more effective and inclusive solution for the emergency of today and the recovery for tomorrow. The Covid-19 pandemics brought historic education disruptions including prolonged school closure around the world. In which during the era of post covid-19, the disruptions caused were due to the government inability to pay the required due for their workers. The disruptions have caused several damages to the children who stay in face to face apartment or unpleasant apartment.

W.H.O (2020), children, particularly girls, who are taught in school from an early age about the right to be protected from abuse and gender based violence are less vulnerable to its effect, this is more critical in times of epidemics.

The covid-19 pandemic has introduced uncertainty into major

aspects of national and global society including school closure. The uncertainty about how school closure affected students' achievement, there is growing consensus that school closure in 2020 has negative effects on students learning. W.H.O (2020) carried out a research that show that the students who took the test before and after covid-19 school closures were demographically similar. The analysis was limited to 8000 schools that tested students in both the year 2019 and 2020. It was observed that the percentiles of student in 2020 were similar to the same age students in 2019.

Parent Views about Students Learning.

Since the beginning of the Covid -19, children, parents and education around the world has been affected by school closure as families are expected to assist their children with distance learning. Parent's academics socialization includes parent's attitudes, values, goals, expectations and beliefs about education as well as opportunities (Puccioni 2015). As an educationist parent, the education goals of the children should determine the approach to be undertaking either by adopting a home teacher tutor or distance learning. Dong, Cao and Li (2020), express negative views of what is expected of them during distance learning and the impact on their children. The distance between the learner and the tutor will not make the learning an effective one. The phobia of seeing a teacher is enough to make a child cooperate under learning. It is noted that distance learning is not have the attention to get the subject matters.

Basic Electricity Students at Federal Government College Ikole Ekiti

An understanding of Basic Electricity is important for general technological literacy. In addition, many engineering careers require a fundamental knowledge of Basic Electricity in order to invent and design technologies and products that we depend upon every day.

Basic electricity helps in domestic household experiences. Household has an equipment that uses electricity, a student with the knowledge will help when there is damages that require electricity. Basic electricity is one of the most important blessings that science has given to mankind. It has many uses in our day to day activities which can serve as a day – pay job for a student who learn Basic electricity at the Federal Government College Ikole Ekiti, Ekiti State.

Federal government college Ikole was established in the year 2020 with five teachers in the following department mathematics, languages and technologies to mention a few. The teacher in care of technologies department ensure there were availability of the equipment needed for a better learning and teaching of Basic electricity in the college. The set up made by the government really help the outstanding performances of the students. . According to Bash (2023), Federal Government College is an institution that was established by the federal government to enhance good education in the country. It is a college where students were developed in their respective dream careers. The federal government with the opinion stated above ensure there were adequate availability of the required infrastructure.

Challenges of COVID 19 Pandemic Limited Access to Resources

Many schools lacked access to necessary resources such as computers, internet, and software making it difficult to teach basic electricity during COVID 19 pandemic. Some students did not have computers, programming software such as scratch programming, python and codeblock. This hindered the effective performance of students during COVID 19 pandemic

Shift to Online Learning

The sudden shift to online posed challenges who had to adapt online method of teaching. This method can be used virtually. Virtual learning entails the use of communication technology to deliver information for education and training. It involves the use of computer to impart knowledge and skills to the students. The online processes require the use of browsers such as internet explorer. Virtual learning is a browser- based learning which has the capability of using network technologies to create, promote, deliver and facilitate learning anytime and anywhere (Olaoye & Adameji, 2023)

Hands-on Learning Limitations

Basic Electricity requires hands-on experience which entails practical activities and experimentation that are difficult to teach basic electricity using online method. Hands- on experience refer to practical, interactive and experiential learning activities that allow individuals to directly engage with and manipulate materials, tools, and equipment to learn new skills and concepts. Hands – on learning in basic electricity includes experimentation, project based learning, simulations, fieldwork, internships and workshops. Examples of hands-on experiences in basic electricity include building

electronic circuits, programming robots, building and testing

Assessment and Feedback

It is very difficult to assess the students through online method of teaching because students are in various places. They are not in a particular place for thorough supervision. Assessment is an integral part of evaluation that makes use of some traits to determine the effectiveness of a programme. (Olaoye, Akindele & Akinsanya., 2020). Assessment provides feedback for students. Assessment is an effective technique for providing feedback on skill learning

Conclusion

It was observed that the academic performance of the students before the covid-19 pandemics was very encouraging. The examination body in Nigeria recorded a high percentage of students that passed English and mathematics in the examination conducted. As a result of low exposure to computer-age, students engage more on physical teachers to students teaching which occur in the classroom. The federal government provided necessary equipment and apparatus to each respective colleges. As more teachers were employed at different field of study. The rate at which students were compelled to study is very high and encouraging as no students have the power to resist the laydown rules of learning

During the era before Covid-19, the togetherness spirit among the students enable group discussion, group practical, work discussion and other method that enable a better understanding of the subject matter. The eras of covid-19 pandemic never encouraged togetherness among the students as this causes a lot of set back

to the academic performance of the students.

Recommendations

The following recommendations are made

1. Government should improve on the condition of health companies where encouragement will be disbursed to different medical researcher to do more research on getting or acquiring a better health stability.
2. Students should be enlightening on getting how to use data and Wi-Fi in acquiring necessary information through online learning and other method of teaching and learning through physical contact with the teacher-in -charge of the teaching. This will enable the students learn at both condition when the situation arises.
3. Students should adhere to precautionary measures to prevent COVID 19 pandemic. This can be adopted by washing hands with soap as soon as the students arrive at schools, creating social distance of a metre and avoid kissing , hugging and touching

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LEVERAGING INFORMATION, DIGITAL, AND MULTIPLE LITERACIES AS PIVOTAL TOOLS FOR EFFECTIVE SKILLS ACQUISITION AMONG 21ST CENTURY LIBRARY AND INFORMATION SCIENCE STUDENTS

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Abstract

The procurement of information, digital, and multiple literacies (IDMLs) are pivotal tools for effective skills growth amidst 21st century library professionals. These literacies are important for sailing the continuously developing technological informational landscape in recent time. When these literacies are integrated into teaching, learning, and research, students are provided with required ability and techniques to perform excellently in their academic activities and become expert in their field of study. This study assessed the ways or means through which LIS students acquire their literacies skills, the sources through which they acquire it, the reasons or purpose(s) for accessing and using information, the benefits derived from IDMLs and the challenges faced in acquiring these skills. The study adopted descriptive survey research design. The population of the study comprised 100 level (30 students) and 200 level (81 students) of Library and Information Science, Ekiti State University which also served as the sample. The research instrument used was a well-structured questionnaire to answer the six research questions raised for the study. The data collected were analyzed using frequency counts and simple percentage. The findings of the study showed that majority of the respondents have the knowledge of IDMLs skills to some extent. The prominent means of acquiring IDMLs knowledge were through the use of library and its resources, interaction with colleagues, school orientation, training, and online tutorials. Some of the benefits derived from acquiring the knowledge of IDMLs skills were identification of correct and suitable sources of information, a vast internet search for information, free access and exposure to information resources, proper use of print and electronic information resources. The respondents experienced some challenges in the course of acquiring the skills such as inadequate training, insufficient information expertise, lack of support from their institution, lack of sufficient IDMLs facilities, poor search challenge, unconducive environment, and lack of sufficient time. It was found from the study that majority of Ekiti State University Library and Information Science students have the knowledge of information, digital and multiples literacies' skills to some extent. Based on the findings of the study, it was recommended that institution management should organize regular literacy skills training for LIS students to improve their literacy skills, Library management should recruit more LIS experts, and make adequate provision of relevant facilities to improve the teaching of literacies skills.

Keywords: Information Literacy, Digital Literacy, Multiple Literacy, skill, Library and Information Science.

Introduction

It is pertinent that Library and Information Science (LIS) students and professionals are all round literate in order to be relevant and perform efficiently in their studies and profession. Information literacy, digital literacy, and multiple literacies have become integral parts of library and information science and necessary for the ongoing societal transformation. Information literacy is the ability of recognizing, acquiring, arranging, and examining information to achieve a specific goal. It is the ability to realize right and wrong information and to identify its sources, recent or outdated information, reliable and misguided information and unfolds its meaning correctly. Digital literacy in LIS is the skill possessed by students/information professionals to effectively use and operate digital technologies and tools to participate in technical and expertise skills, production, and dissemination of information. Multiple literacies encourages variety of learning resources and interaction among learners and as well promote individual interest and contributions. The current 21st century is marked with growth and development in all spheres of life. Information has become important in making decision globally (Dang, Igboechesi, Diyong, 2022). New information and communication technologies, social media, and web technologies are replacing old prints. Various skills such as cognitive skill, technological skills, and sociological skill are needed for effective learning among library and information science (LIS) students of 21st century to meet up with the present fast growth in technologies (Yoram, 2004). With the knowledge of Information, Digital, and Multiple

Literacy (IDMLs) skills, LIS students will be able to efficiently acquire and analyze information, use information materials, and create logical reasoning skills. IDMLs in librarianship is a global accepted issue and stand as pivotal and relevant tools. As the world is becoming a global village through the use of technologies, these literacies are becoming significantly relevant for potential information professionals to possess.

Digital and information literacies have become global and renowned terminologies in librarianship. Its importance in LIS cannot be undermined due to its influencing roles in the present era. Good performance will be recorded when LIS students give right place to information and digital literacies and develop their technological skills thereby performing excellently well and preparing themselves for the future. Having known the importance of information, and digital literacies, there is need of developing and improving LIS students' literacy skills through exposure to literacy skills, knowing, understanding, and applying it to their day-to-day studies (Asrizad, Amran, Ananda, Festiyed, & Sumarmin, 2018). Information, digital, and multiple literacies enhance better academic performance, increase productivity and problem-solving skills of LIS students. Library and information science students are taking advantage of available technology to perform adequately and make their future profession an interesting one. Library and Information Science (LIS) and Librarianship require literacy skills to function effectively in the 21st century also known as digital age. The use of technologies helps LIS students and other information providers in their

studies and online learning. Becoming digital literate is highly required at this age to provide needed information resources (Subaveerapandiyan, Priyanka, & Ugwulebo, 2022). Electronic-based services are made possible for library professionals through technology and digital skills adoption.

New waves and development in librarianship calls for adequate literacies of LIS students. Their abilities, strategies, knowledge, skills, and literacies should be well groomed for future performance. As digital literacy becomes increasingly important in the modern educational scenario, integrating technology into the curriculum is seen as a crucial strategy for improving students' competencies in navigating, evaluating, and creating digital content (Aoumeur, 2024). Creation of enabling literacy and innovative environment is paramount for their learning in this/advanced technological age. Information professional and LIS student with adequate literacy skills tend to strive professionally and academically than those with low literacy skills (English, 2016). Literacy and technologies have brought unprecedented changes in the world of learning, and communication, thereby affect the knowledge, skills and abilities of LIS students in librarianship profession (Eric, Ingrid, & Ruth, 2013). There are great transformations in LIS and librarianship due to emergence of new technologies. The technologies require some levels of skills to be possessed by LIS students and professionals. Information, digital, and multiple literacies help LIS students and librarians of 21st century to perform effectively in their studies and practices. Digital literacy aids in carrying out technological activities and skills such as e-learning, online

classes, e-library management system, e-mail, and e-books (Tang, & Chaw, 2016).

Despite the proliferation of information and digital technologies around the world, not all library and information professionals are very good in using them appropriately. This is due to lack of adequate literacy and skills. Therefore, there is need for Library and information students and professionals to develop their information, digital and multiple literacies in this 21st century in order to be good future information providers. Library services and librarianship are not taking the same shape as yesteryears. Not this alone, some LIS students and professionals are still lagging behind in information and digital literacies. They are not meeting up with the expected standard level of literacy in the 21 century because of their lackadaisical attitudes towards information, digital, and multiple literacies. To alleviate the challenges of LIS low level of literacy, all LIS students and professionals of 21st century should be encouraged to take information, and digital literacies serious and learn more about it (Asrizal, et al, 2018).

Digital Literacy: A Pivotal Tool for Skill Acquisition

Digital literacy is a kind of literacy obtained through digital technologies. It is a means of getting knowledge, skills, and competencies to access, read, and write. It is also referred to as computer literacy, digital skills, and competencies (Jackie, 2015). Jackie considered digital literacy as a skill and ability involving reading, writing, viewing, designing, critical thinking, problem-solving skill. He classified digital literacy into three main domains which are: Critical, Cultural, and Operational skills. It is a way of locating, comprehending, and

gathering information from various digital source. The rapid transformation in the world of information and communication technology demands digital skills from students and professionals that allows access to information and help them adapt to diverse situations at the same time leads to permanent changes in educational, economic, cultural and social spheres (Fernandez-Otoya, Cabero-Almenara, Perez-Postigo, Bravo, Alecazar-Holguin, Vilca-Rodriguez, 2024). Digital literacy is the ability to be aware, identify, search, use, manage, monitor, access, thoroughly examine, incorporate, communicate, evaluate, and analyze digital information (Tang, & Chaw, 2016). It encompasses the ability to effectively use digital tools, critically evaluate digital content, and engage in virtual communication (Aoumeur, 2024). According to Tang & Chaw, 2016, & Yoram, E. digital literacy involves more than mere ability to use software or operate a digital device, it includes a great varieties of complex skills which can be viewed from different perspectives which are: Cognitive, psychomotor, Social-emotional, and technical perspectives. Cognitive perspective deals with ability to seek, examine, assessing, and interpret discrete information accurately with professional expertise. Social-emotional perspective is associated with ability to rightly and socially access internet for information. Technical perspective is about information technology (IT) competency and skills. Digital literacy is more than being technologically literate but also to possess and have the expertise application of digital skills to everyday activities. Its emphasis is on proper skills needed in navigating through digital arena. Digital literacy takes different forms and shapes. It can be acquired

personally, and collectively, from home or workplace, in an organized or casual way. Digital literacy exhibits a distinct skill needed by library and information science students and professionals. This skill typifies the ability to access, use, manage, and analyze technological equipment and appliances for information services. Digital literacy is a technical-know-how ability to utilize technology accessories and fortify digital knowledge (Meyers, Erickson, & Small, 2013). It involves worthwhile attributes of information professional to generate a reliable, correct, recent, suitable, and acceptable digital information. Being able to search and apply information to real life situation, and for academic performance. LIS students have to be guided on the acquisition of digital literacy probably with search engines and other technology devices by experienced experts in order to meet up with the standard of LIS. Despite the fact that some students possess some levels of basic digital literacy, some still lack core knowledge of the library and information science digital expertise and bibliographic information system.

Liana Heitin explained digital literacy as understanding online search of digital text, images, videos, and graphics, and a means of discovering discrete content. Online search requires skills that needed to be acquired by the students and information professionals to effectively use digital technologies. Digital literacy is a way of inventing digitally in form of videos, and e-mailing, Tweets, Blogs, and as well navigating through the search engines. Also, digital literacy is acquiring knowledge to examine and use information link. It is studying to engage in suitable internet operations to bring about easy virtual communication. Some people view digital literacy as a means to an end, a great and useful phenomenon to

individual's discovery where students and professionals can bring about a conducive system, and an important dexterity experience while some see it as a threat to cultural and academic practices. Digital literacy can help in finding solution to difficult situations through expertise, and technical skills by engaging, designing, producing, and disseminating information.

Information Literacy: An Indispensable Instrument for the 21st Century Information Professionals

Information literacy is the capability of prescribing, determining, assigning, locating, and coordinating information. It is a cleverness of composing information, knowing how to generate, and comprehend information to create new ideas and autonomy. It involves the ability of retrieving information from any source and organizing it accordingly (Paul, & Anyaegbu, 2020). Information literacy is a set of actions and practices involving techniques and ability to efficiently utilize information, information resources, and information technology (<https://otterbein.libguides.com/infolit>). Information literacy is a general knowledge of information for advanced academic, legal, science, and skills to device and develop an idea for extremely important value and thought for a lifestyle in a society. It is the ability to unravel information through technology (<https://librarysciencedegree.usc.edu/>.) Information literacy skill is a fusion of library literacy, computer literacy, media literacy, technology literacy, critical thinking, ethics and communication (Paul, & Anyaegbu, 2020). Information literacy is expedient for all level and categories of people starting from basic and fundamental level to higher level with

varied skills. Information literacy is not about theory only, but about practical actions through interconnectivity by:

- ❖ Acknowledging challenging issues and formulate investigation
- ❖ Compose a design to discover information, and result
- ❖ Put up a clear and definite expression and make useful suggestion
- ❖ Search for information and make observation from print and online sources
- ❖ Examine the reputation and reliability of the sources of information

They should also be able to:

- ❖ Have useful access to information
- ❖ Assesses information accurately and skillfully
- ❖ Employ and utilize information precisely and inventively
- ❖ Capture information similar to personal endeavor and undertaking
- ❖ Grasps treaties and other innovative symbols and languages of information
- ❖ Compete brilliantly for worth in information search and awareness
- ❖ Acknowledge the quality and significance of information in an organization
- ❖ Experiment acceptable principles and device a respectful information
- ❖ Involving in a robust cooperation for information creation

Information literacy goes beyond printed sources, and resources. It can also be seen as computer literacy, network literacy, visual and media literacies (Information literacy from Wikipedia, retrieved in December, 2018). Information literacy

can be best harnessed from information providing organization. Information literacy helps in nurturing, and bringing up information literacy education in information providing organization. It serves as essential ingredient for lifelong learning skill and provide universal togetherness and direction for information literacy skill. Through information literacy, knowledge and facts can be shared among information professionals from various communities and also give room for individual involvement for information common goal. Information literacy exceeds reaching four walls of library to access print resources, it is getting access to a variety of information through different channels, operating effectively in information environment by comprehending how to discover, and engage, utilize information adequately. Information literacy is seen as an pivotal learning outcome in higher institutions in advanced nations and among its high impact educational practices (Dang, Igboechesi, & Diyong, 2022).

Multiple Literacies for Professionals and Its Implications

Literacy is the ability to transmit information or knowledge to others efficiently in any form such as creating, interpreting, evaluating, and analyzing information. Multiple literacies is the aptness to understand and expound different sources or media to acquire information. It consists of the capabilities to read, write, and seek for information. It is a modern way of global communication. Multiple literacies involve: The utilization of different technological devices, revolving round devices, exploring the internet, software, programs and graphics creation, design of diverse shapes, symbols, and

colours.

(<https://www.highperformancelearning.com>). Multiple literacies is made up of four areas which are: Digital literacy, Technological literacy, Visual literacy, and Textual literacy

Visual Literacy: Visual literacy is the way one can comprehend, estimate, view, and analyze information showed through images such as symbols, videos, pictures, and photographs. It is the ability to integrate visual performance for adequate communication of information.

Digital Literacy: Digital literacy occurs when a person can define, assess, and explain information got through discrete sources such as smartphones, websites, and internet. In academic and professional contexts, digital literacy involves accessing, evaluating, and effectively using information as a pivotal tool (Sungguh, 2024).

Textual Literacy: Textual literacy is the ability of an individual to process, print literature, and to accurately put information in writing.

Technological Literacy: Technological literacy is the capability to utilize, and navigate various technologies such as online search, websites, and social media adequately and accurately without encroaching to other's privacy. (<https://study.com>academy>lesson>). Integrating technology into learning practices is crucial in the ever evolving digital dispensation (Sungguh, 2024). Multiple literacies came into existence as a result of digital, and technological uprising in educational environment. Such technology includes television, audio broadcasting, video, motion picture production, live video conferencing, and multiplayer educational gaming etc. there has been great global transformation caused by emergence of digital technologies. The transformation has also generated new

challenges and great advancement to students and professionals in library and information science. It is a means of personal accessibility to, and dissemination of information. Multiple literacies is also known as multiliteracies, new literacies (<https://www.igi-global.com>).

Therefore multiple literacies is the integration, and development of different literacies for effective interaction in a learning environment. Multiple literacies has enormously added values to teaching and learning and most importantly to library and information profession. It has transformed the way information is being communicated from traditional way of reading and writing to technological means of communication which can be in form of symbols, graphics, design, gaming. Multiple literacies also give way for cultural, social interaction and practices for diverse learning. To be innovative and remain competitive, digitization must be integrated into teaching and learning. Thus, digital literacy encompasses a wide range of skills and knowledge needed to make effective use of digital tools by integrating them into pedagogical activities (Fernandez-Otoya, et al, 2024). Library and information science students and professionals of 21st century must adequately acquire all the needed skills and multiple literacies to perform effectively in their profession. There should be diverse collections in libraries for the promotion of multiple literacies. Library programs and plans in 21st century must exceed the ancient roles of read and write, but be that of collaboration, and construction of resources content and context (K. Mcpherson).

Problem Statement

21st century dispensation is associated with avalanche of

information. Information explosion makes students lack clarity on which source(s) to access in order to acquire the needed and correct information promptly and accurately for a particular academic purpose. Information are available in both print and non-print forms, requiring students to be conversant with the means of locating, identifying, accessing, and utilizing the information as and when due. Information literacy, digital literacy, and multiple literacies stand as pivotal tools and pathfinders pointing to how, where, and when information can be searched, located, accessed, acquired, and utilized. With the advancement of technology, students require skills to access, navigate, evaluate chat, download documents, and send e-mail, but some have not embraced how to effectively locate, integrate, synthesize, and evaluate ideas and information (Dang, Igboechesi, & Diyong, 2022). Notwithstanding the information, digital, and multiple literacies available at the present day, LIS students still find it difficult to embrace the literacies in order to possess the required skills needed for their profession. Therefore, this study aimed at unravelling the importance of digital, information, and multiple literacies as pivotal tools in acquiring effective skills among LIS students in Nigerian Universities, Ekiti State University (EKSU), Library and Information Science Department being a case study.

Purpose of the Study

The purpose of this study is to examine the importance of acquiring literacy skills by Ekiti State University Library and Information Science students in the 21st century.

Objectives of the Study

The objectives of the study are to:

- 1) assess the LIS students' knowledge on information, digital, and multiple literacies
- 2) find out the means/ways through which they acquire information, digital, and multiple literacies skills
- 3) identify the sources by which LIS students acquire information, digital, and multiple literacies' skills
- 4) examine the benefits derived from information, digital, and multiple literacies among LIS students
- 5) ascertain the purpose(s) for which LIS students access and use information
- 6) identify the challenges LIS students faced in acquiring information, digital, and multiple literacies

Research Questions

The study seeks to answer the following questions

- 1) What level of information literacy, digital literacy, and multiple literacies' knowledge do LIS students have?
- 2) By what means/ways do LIS students acquire information, digital, and multiple literacies' skills?
- 3) What are the sources through which LIS students acquire information, digital, and multiple literacies?
- 4) What are the benefits derived from information, digital, and multiple literacies' skills?
- 5) For what purpose(s) do LIS students access and use information?
- 6) What are the challenges faced by LIS students in acquiring

information, digital, and multiple literacies' skills?

Scope of the Study

The scope of the study is on the information literacy, digital literacy, and multiple literacies as pivotal tools for effective skill acquisition among 21st century library and information science students, EKSU.

Methodology

Descriptive survey research design was adopted for this study. Quantitative data was collected through a well-structured questionnaire to answer the research questions that sought to know the extent of information literacy, digital literacy, and multiple literacies among library and information science students. The population for the study covered 30 students from 100 level and 81 students from 200 level of Library and Information Science Department, Ekiti State University. The questionnaire consisted of two sections; section A considered the socio-demographic data of the respondents while section B contained information on the topic of the study. The questionnaire was designed using simple percentage, Yes and No for response. It was distributed to all the respondents with 100% retrieval.

Data Analysis and Discussion of Result

Descriptive Analysis

This section clearly portrays the social-demographic characteristics of the respondents using descriptive statistics: frequency and percentage distribution of the respondents' variables.

Table 1.0: Summary of Socio-demographic information of Respondents

<i>Variables</i>	<i>Levels</i>	<i>Frequenc y</i>	<i>Percentage (%)</i>
Academic Level	100 level	30	27.0
	200 level	81	73.0
	Total	111	100.0
Age in Years	15 – 20 years	49	44.1
	21 – 25 years	56	50.5
	26 – 30 years	06	5.4
	Total	111	100.0
	Male	64	57.7
Gender	Female	47	42.3
	Total	111	100.0

Table 1.0 showed the demographic data of the respondents. Based on the results in Table 1.0, it was revealed that the total number of questionnaires administered to Library and Information Science (LIS) students of Ekiti State University were 111 (100%), out of which 30(27.0%) were administered to 100 Level and 81(73.0%) were administered to 200 Level with 100% retrieval. The age

variable of the respondents showed that most of the respondents were between ages 21-25 years with 56(50.0%), followed by ages between 15-20 years with 49(44.1%), while the least were ages between 26-30 years with 6(5.4%). Table 1.0 also showed the gender of the respondents. Majority of the respondents were male with 64(57.7%), while 47(42.3%) were female.

Level of LIS students' knowledge on information literacy, digital literacy, and multiple literacies

Table 2.0: Summary of Respondents on Assessment of LIS students' knowledge on information, digital, and multiple literacies

<i>Variable</i>	<i>High F (%)</i>	<i>Low F (%)</i>	<i>Total F (%)</i>	<i>Mean</i>	<i>S.D</i>
Level of LIS students' knowledge on information, digital, and multiple literacies	104 (93.7)	7 (6.3)	111 (100.0)	1.06	0.24

The first objective of this research was to assess the level of respondents' knowledge on information, digital, and multiple literacies. The results on Table 2.0 revealed that majority of the respondents with 104(93.7%) possess high level knowledge of information, digital, and multiple literacies. While

only 7(6.3%) respondents have low level knowledge of information, digital, and multiple literacies. This shows that most of the Library and Information Science students possess the basic knowledge of information, digital, and multiple knowledge that can assist them in accessing, analyzing and disseminating information in the

course of their learning. This result implies that very few of them were not

vast in information, digital, and multiple literacies.

Means/Ways through which they acquire information, digital, and multiple literacies skills

Table 3.0: Summary of Respondents on Means/Ways through which they acquire information, digital, and multiple literacies skills

<i>Variable</i>	<i>Yes F (%)</i>	<i>No F (%)</i>	<i>Total (%)</i>	<i>F Mea n</i>	<i>S.D</i>
Library Resources	98 (88.3)	13 (11.7)	111 (100.0)	1.12	0.32
Collaboration with students from other institution	86 (77.5)	25 (22.5)	111 (100.0)	1.23	0.42
Use of Library	96 (86.5)	15 (13.5)	111 (100.0)	1.14	0.34
Interaction with colleagues	94 (84.7)	17 (15.3)	111 (100.0)	1.15	0.36
School orientation and training	93 (83.8)	18 (16.2)	111 (100.0)	1.16	0.37
Online tutorials	88 (79.3)	23 (20.7)	111 (100.0)	1.21	0.41

Respondents were asked to indicate the means or ways by which they acquired information, digital, and multiple literacies skills. Results of the findings on Table 3.0 revealed that 98(88.3%) of the respondents acquired information, digital, and multiple literacies through library resources, 96(86.5%) acquired the skills through the use of library, 94(84.7%) acquired the skills through interaction with colleagues, 93(83.8%) of the respondents acquired the skills through school orientation and training, while 88(79.3%), and 86(77.5%) acquired information, digital, and multiple literacies through online tutorials and collaboration with

students from other institutions respectively. Basically, the results revealed that all the means/ways of acquiring information, digital, and multiple literacies had high percentages, but the highest of it was through library resources, followed by use of library, followed by interaction with colleagues, and the next on the table was through school orientation and training, followed by online tutorials, and lastly through collaboration with students from other institutions. This implies that library resources and use of library are the prominent means/ways of acquiring literacies skills among Library and Information Students.

Sources by which LIS students acquire information, digital, and multiple literacies' skills

Table 4.0: Summary of Respondents on Sources by which LIS students acquire information, digital, and multiple literacies' skills

<i>Variable</i>	<i>Yes F (%)</i>	<i>No F (%)</i>	<i>Total F (%)</i>	<i>Mea n</i>	<i>S.D</i>
Institution/Department training	96 (86.5)	15 (13.5)	111 (100.0)	1.14	0.34
University library orientation	100 (90.1)	11 (9.9)	111 (100.0)	1.10	0.30
Internet search	104 (93.7)	7 (6.3)	111 (100.0)	1.06	0.24
Library visit	103 (92.8)	8 (7.2)	111 (100.0)	1.07	0.26
Use of print information resources	97 (87.4)	14 (12.6)	111 (100.0)	1.13	0.33
Use of electronic database	93 (83.8)	18 (16.2)	111 (100.0)	1.16	0.37

Use of both print and electronic resources	99 (89.2)	12 (10.8)	111 (100.0)	1.11	0.31
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Table 4.0 revealed the sources through which LIS students acquired information, digital, and multiple literacies. It was shown from the table that majority of the respondents 104(93.7%) sourced and acquired their literacies from internet search, followed by 103(92.8%) respondents who indicated library visit as their source of acquiring literacies, 100(90.1%) indicated University library orientation as a source of acquiring their literacies. 99(89.2%) showed that Use of both print and electronic resources were sources of

getting information, digital and multiple literacies. The next source to it was the use of print information resources with 97(87.4%), followed by institution/department training with 96(86.5%), and sources with the least percentages on the table was the use of electronic database with 93(83.8%). This may be unconnected with non-subscription of their institution to electronic database. The findings implies that the most common source of acquiring information, digital, and multiples literacies by the respondents was internet search.

Benefits derived from information, digital, and multiple literacies among LIS students

Table 5.0: Summary of LIS student Respondents on Benefits derived from information, digital, and multiple literacies.

<i>Variable</i>	<i>Yes F (%)</i>	<i>No F (%)</i>	<i>Total F (%)</i>	<i>Mea n</i>	<i>S.D</i>
Vast internet search for information	100 (90.1)	11 (9.9)	111 (100.0)	1.10	0.30
Identification of correct and suitable sources of information	103 (92.8)	8 (7.2)	111 (100.0)	1.07	0.26
Proper use of print and electronic information resources	92 (82.9)	19 (17.1)	111 (100.0)	1.17	0.38
Free access and exposure to information resources	98 (88.3)	13 (11.7)	111 (100.0)	1.12	0.32

Table 5.0 revealed the findings on the benefits derived from information, digital, and multiple literacies (IDMLs). It was revealed from the table that identification of correct and suitable sources of information was the greatest benefit derived from IDMLs with 103(92.8%), followed by a vast internet search of information with 100(90.1%), the next

benefit to it was free access and exposure to information resources with 98(88.3%). Proper use of print and electronic information resources with 92(82.9%) was the least benefit on the table. This implies that IDMLs is highly beneficial in identifying correct and suitable sources of information.

Ascertain the purpose(s) for which LIS students' access and use information

Table 6.0: Summary of Respondents on Purpose(s) for which LIS students' access and use information

<i>Variable</i>	<i>Yes F (%)</i>	<i>No F (%)</i>	<i>Total F (%)</i>	<i>Mean</i>	<i>S.D</i>
Information is accessed and used for research	108 (97.3)	3 (2.7)	111 (100.0)	1.03	0.16
Information is accessed and used for assignment	101 (91.0)	10 (9.0)	111 (100.0)	1.09	0.29
Information is accessed and used for examination	99 (89.2)	12 (10.8)	111 (100.0)	1.11	0.31
For team work	92 (82.9)	19 (17.1)	111 (100.0)	1.17	0.38
For leisure and entertainment	94 (84.7)	17 (15.3)	111 (100.0)	1.15	0.36

Table 6.0 ascertained the purpose(s) for which LIS students' access and use information. From the table, 108(97.3%) respondents indicated that information is obtained and utilized for research. 101(91.0%) indicated that information is obtained and utilized for assignment, 99(89.2%) responded that information is obtained and utilized for examination, 94(84.7%) indicated that information is obtained and utilized for leisure and

entertainment. Lastly, 92(82.9%) indicated that information is obtained and utilized for teamwork. The results from the table showed that knowledge of information, digital and multiple literacies serve many purposes generally with high percentages, though majority of the respondents believed that the highest purpose of IDMLs is to obtain and utilize information for research.

Identify the challenges LIS students faced in acquiring information, digital, and multiple literacies

Table 7.0: Summary of Respondents on Challenges LIS students faced in acquiring information, digital, and multiple literacies

<i>Variable</i>	<i>Yes F (%)</i>	<i>No F (%)</i>	<i>Total F (%)</i>	<i>Mean</i>	<i>S.D</i>
Poor search	88 (79.3)	23 (20.7)	111 (100.0)	1.21	0.41
No enough time	84 (75.7)	27 (24.3)	111 (100.0)	1.24	0.43
Insufficient knowledge of information literacy, digital literacy, and multiple literacies skills	91 (82.0)	20 (18.0)	111 (100.0)	1.18	0.39
Student lack of interest in acquiring information literacy, digital literacy, and multiple literacies skills	80 (72.1)	31 (27.9)	111 (100.0)	1.28	0.45
Insufficient information literacy, digital literacy, and multiple literacies sources	82 (73.9)	29 (26.1)	111 (100.0)	1.26	0.44
Inadequate training on information literacy, digital literacy, and multiple literacies skills	103 (92.8)	8 (7.2)	111 (100.0)	1.07	0.26
Low internet connectivity	90 (81.1)	21 (18.9)	111 (100.0)	1.19	0.39

Poor/Unconducive environment	86 (77.5)	25 (22.5)	111 (100.0)	1.23	0.42
Lack of sufficient information literacy, digital literacy, and multiple facilities	92 (82.9)	19 (17.1)	111 (100.0)	1.17	0.38
Lack of support from institution	95 (85.6)	16 (14.4)	111 (100.0)	1.14	0.35
Insufficient information literacy expertise	97 (87.4)	14 (12.6)	111 (100.0)	1.13	0.33

Table 7.0 showed the challenges LIS students faced in acquiring information, digital, and multiple literacies (IDMLs). It was revealed from the table that the highest percentages 103(92.8%) of the respondents indicated that inadequate training on IDMLs skills was the greatest challenge faced. 97(87.4%) indicated the challenge of insufficient information literacy expertise, followed by 95(85.6%) who indicated lack of support from their institution as a challenge. 92(82.9%) indicated the challenge of lack of sufficient IDMLs facilities, 91(82.0%) indicated insufficient knowledge of IDMLs skills, followed by 90(81.1%) who indicated low internet connectivity as a challenge, 88(79.3%) indicated poor search challenge, 86(77.5%) indicated poor/unconducive environment as a challenge, 84(75.7%) indicated lack of sufficient time as a challenge, followed by 82(73.9%) who indicated a challenge of insufficient IDMLs sources, 80(72.1%) indicated students' lack of interest in acquiring IDMLs skills. Summarily, the results on the table showed that majority of the respondents saw inadequate training on IDMLs skills and insufficient information literacy expertise as major challenges, and the least challenge was the student's lack of interest in acquiring IDMLs skills.

Discussion of Results

This study basically investigated the knowledge of Library and Information Science students on information, digital, and multiple literacies skills (IDMLs). Findings on the study showed that majority of the

respondents have the knowledge of IDMLs skills. The prominent means of acquiring IDMLs knowledge were through the use of library and its resources, interaction with colleagues, school orientation, training, and online tutorials. This corroborates that of Oyedipe and Popoola (2019) which opined that library professionals acquired skills through different ways. Many benefits were derived from acquiring the knowledge of IDMLs skills by the respondents such as identification of correct and suitable sources of information, a vast internet search for information, free access and exposure to information resources, proper use of print and electronic information resources. This is in line with the findings of Meyers, Erickson, and Small (2013) which opined that digital literacy often focuses not only on what it means to be digitally literate but also on the impact and benefits on human beings of not being digitally literate.

In addition, the findings showed that the main objective of acquiring and utilizing IDMLs skills by the respondents was to get information for research, assignments, to prepare for examinations, to get information for leisure and entertainment, and to utilize information for team work. Lastly, findings revealed that respondents experienced some challenges in the course of acquiring the skills despite all the benefits attached to it, some of which are: inadequate training, insufficient information expertise, lack of support from their institution, lack of sufficient IDMLs facilities, poor search challenge, unconducive environment,

and lack of sufficient time. This is contrary to the findings of Jacob (2016) which stated that most of the respondents who participated commented on the high level of support received from their instructor and the knowledge the instructor brought to the training.

Conclusion

Based on the analysis and discussion of results of the study, it was found that many of Ekiti State Library and Information Science students possessed the knowledge of information, digital and multiples literacies' skills to some extent through the use of library resources, interaction with colleagues, training and online tutorials. This assisted them to identify correct and suitable sources of information, and internet search which they used for their assignments, research work, and to prepare for examinations. Notwithstanding, the level at which they apply these skills needed to be improved upon for better performances.

Recommendation

The following recommendations were made based on the findings and conclusion of the study:

- 1 Institution management should organize regular literacy skills training for LIS students to improve their literacy skills.
- 2 Library management should recruit more LIS experts and make adequate provision of relevant facilities for the teaching of literacies skills.

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THE IMPACT OF COVID-19 PANDEMIC ON THE ACADEMIC PERFORMANCE OF STUDENTS IN SECONDARY SCHOOLS IN EKITI STATE, NIGERIA

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Abstract

*The study examined **the impact of** COVID-19 pandemic on the performance of final year Senior Secondary Year (SS3) Three students' in Ekiti State. It specially, examined the general performance of SS3 student in WASSCE examination between year 2016-2020. The study determined the performance of Senior Secondary year three students' in external examinations before covid-19 pandemic period and during Covid-19 pandemic period in Ekiti State and how covid-19 has affects the academic programme of Senior Secondary Schools. The study adopted ex-post facto design. Secondary data was collected from the Ministry of Education, Science and Technology, Ekiti State. The findings revealed that covid-19 pandemic has impacted on the academic performance of SS3 students in Ekiti State and affected the performance of final year secondary students in their WASSCE external examination. It was therefore, recommended that government should try as much as possible to provide and equip schools with enough ICT equipment and facilities that make up a better and standard e-learning and teaching environment and parents and stakeholders should also assist governments by contributing their own quota to the training of children.*

Keyword: Covid-19; academic performance; external examination; secondary schools.

Introduction

Coronavirus disease 2019 (COVID-19) was firstly identified in Wuhan city, Hubei Province, China in December 2019 as a pneumonia of unknown origin. Later, the international committee on taxonomy of viruses (ICTV) identifies the causative agent of COVID-19 as a novel coronavirus, severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2). COVID-19 outbreak spreads rapidly not only in China, but also worldwide, therefore, the World Health Organization (WHO) has announced it as pandemic on March 12, 2020 (UNESCO, 2020). The total number of confirmed cases and mortalities are 23,491,520 and

809,970, respectively, in 216 countries as of August 25, 2020 (Palden, 2020).

During this period of the pandemic, several governmental measures have been taken to cancel the risk of disease spreading. These measures include travel restrictions, mandatory quarantines for travelers, social distancing, bans on public gatherings, schools and universities closure, business closures, self-isolation, asking people to work at home, curfews, and lockdown. Authorities in several countries worldwide have declared either lockdown or curfew as a measure to break the fast spread of virus infection. These measures have a negative worldwide effect on the business, education, health, and tourism. In

between, movements were allowed, offices began functioning, schools and college reopened for selected levels and continued with online class for others. The measures taken by various countries across the world has affected all levels of the education system. It has led to the closure of schools and suspension of academic activities in institutions of learning globally.

Due to the suspension of classroom teaching in many schools and colleges, a switch to other approaches to teaching such as virtual learning, radio, television teaching and use of social media handles were adopted by government of countries as an alternative way to minimize physical contacts either between students themselves or between the students and the teachers. However, many students have no access to these alternative teaching modes due to lack of either the means or the instruments due to economical and digital divide. Consequently, Ogunode and Jegede (2021) opined that COVID-19 lockdown was likely to affect the academic performance of Senior Secondary Schools in the years' external examinations.

Students' effort and preparation towards their examination have been adversely affected by this global pandemic which has forced everyone into unprepared self-isolation. As at the period of the pandemic, Nigeria one the African developing country does not seem to have a well-developed e-learning platform for schools that can cushion the effect associated with loss of learning hours especially in the government owned public schools. Therefore, the impact of this pandemic was more likely to be strongly felt by the Senior Secondary final year candidates whose national examination comes up within the period of the lockdown and movement restrictions. To this end, little has been

said on the potential impact of COVID-19 on the educational sector and external examination done in Nigeria, especially its effects on the performance of senior secondary school students who sat for the national examinations such as West Africa Senior Secondary Certificate Examination (WASSCE) as well as the National Examination Council (NECO) examinations.

These external examinations are basic and required to prepare students for tertiary education. Secondary education, as defined by the National Policy on Education, is comprised of Basic Education and Post-Basic Education and Career Development in Nigeria (FGN, 2014). It is characterized by three (3) years junior secondary school known as Basic Education and three (3) years senior secondary school referred to as Post-Basic Education and Career Development. While Basic Education is the type of education a child receives immediately after primary education, Post-Basic Education is the education children receive after successful completion of Basic Education and having passed the Basic Education Certificate Examination (BACE). It is at the Post-Basic Education that children are prepared specifically to achieve the major purpose of secondary education which is to proceed to tertiary education having passed satisfactorily well in either the West African school certificate Examination (WASSCE) or National Examination Council (NECO) as the case may be. Therefore, one of the veritable tools for determining who proceeds from one level of education to the next level is an assessment and this is one of the reasons why assessment is seen as a very crucial component of secondary education in Nigeria.

In contemporary Nigeria, external examinations are conducted

by indigenous examination bodies such as West African Examinations Council (WAEC) which conducts the West African Senior School Certificate Examination (WASSCE). The National Examination Council (NECO), responsible for the conduct of Senior School Certificate Examination (SSCE); the National Business and Technical Examination Board (NABTEB) which conducts the National Technical Certificate (NTC) and National Business Certificate (NBC) examinations; the Joint Admission Matriculation Board (JAMB) which conducts the Universities Matriculation Examinations (UME) etc. The context of this study only focuses on the WASSCE which is taken at the end of the secondary school phase.

West African Senior School Certificate Examination (WASSCE)

WASSCE is a type of standardized test conducted in West Africa countries. Students who pass the examination receive a certificate confirming their graduation from secondary education. It is administered by the West African Examination Council (WAEC) and only offered to candidates residing in Anglophone West African countries. The academic school-learning qualification awarded upon successful completion of the examinations is the West African Senior School Certificate. The WASSCE tests the performance of students in all the core subjects offered in post-basic secondary education in Nigeria before any students can proceed to tertiary institutions. It serves as placement assessment.

Academic Performance

According to Arief (2019), scholars agree that students' academic achievement or performance is a 'net

result' of their cognitive and non-cognitive attributes as well as the sociocultural context in which the learning process takes places. Academic performance of students is a key feature in education (Anthony, 2018). It is considered to be the center around which the whole education system revolves. Asuru (2017) opined that the academic performance of students' determines the success or failure of any academic institution. Similarly, some other researchers asserted that student's academic performance serve as the bedrock for knowledge acquisition and the development of future skills. Additionally, some emphasized that the topmost priority of all educators is the academic performance of students. According to Abdullah (2016) in Longjohn and Audu (2020), academic performance is the knowledge gained which is assessed by marks by a teacher and/ or educational goals set by students and teachers to be achieved over a specific period of time. He added that these goals are measured by using continuous assessment or examination results. Completion of educational benchmarks such as secondary schools, diplomas and bachelor's degrees represent academic achievement. Academic achievement is commonly measured through examinations or continuous assessments but there is no general agreement on how it is best evaluated or which aspects are not important. Furthermore, there are inconclusive results over which individual factors successfully predict academic performance, elements such as test anxiety, environment motivation and emotions require consideration when developing models of school achievement. On the other hand, in public examinations/external examinations in Nigeria, there is some

call out in maintaining the quality of students' performance.

Statement of the Problem

There has been a problem associated with the covid-19 pandemic on the general academic performance of the final year Senior Secondary year three students during the Covid-19 period. Some of these problems include, many schools around the world either postponed or canceled all school activities to minimize gatherings and hence decrease the transmission of virus. However, these measures lead to higher economical, medical, and social implications on both students and teachers. Due to the suspension of classroom teaching in many schools, a switch to the online teaching for students was introduced. This form of learning provides an alternative way to minimize either the contact between students themselves or between the students and teachers. However, many students have no access to the online teaching due to lack of either the means or the instruments due to economical and digital divide. It reduced the interest of students in learning, despite the fact that the educational system of the country is not encouraging. These efforts made during covid-19 pandemic period appear to be inadequate to prepare the final year Senior Secondary year three students for their external examination such as West Africa Senior Secondary Certificate Examination (WASSCE) and National Examination Council (NECO). It therefore become necessary to find out empirically whether covid-19 pandemic has impacted on the general academic performance of final year senior secondary students in Ekiti State.

Purpose of the study

The purpose of the study is to examine the impact of COVID-19 pandemic on the performance of final year Senior Secondary Year Three students' in Ekiti State. Specifically, the study seeks to;

1. To examine the general performance of SS3 student between year 2016-2020.
2. To determine the performance of Senior Secondary year three students' in external examinations before covid-19 pandemic period in Ekiti State.
3. To compare the performance of Senior Secondary year three students' in external examinations before and during Covid-19 pandemic period in Ekiti State.

Research Questions

The following research questions were formulated for this study;

1. What is the students' enrollment and performance pattern in West African Senior Secondary Examination between years 2016 to 2020?
2. What is the performances of Senior Secondary year three students' in external examinations before Covid-19 pandemic period in Ekiti State?
3. What is the performances of Senior Secondary year three students' in external examinations during Covid-19 pandemic period in Ekiti State?

Research Hypothesis

1. There is no significant difference between the performance of SS3 students in external examination before Covid-19 and during Covid-19 period in Ekiti State.

Methodology

The study adopted an ex-post facto research design and was conducted in

Ekiti State, Nigeria. The target population for the study comprised all the senior secondary three (SS3) students who wrote WAEC between 2016 to 2020 academic session in public and approved private schools in Ekiti State, Nigeria. The secondary data was collected from the Ekiti state Ministry of Education, Science and Technology. Descriptive and inferential statistics were used to analyse the data collected. The research questions

were analysed using the descriptive statistic of percentages, while the hypothesis was analysed with t-test inferential statistic.

Results

Research question 1: What is the students' enrolment and performance pattern in West African Senior Secondary Examination between years 2016 to 2020 in Ekiti State.

Table 1: Students' enrolment and performance pattern from 2016 to 2020.

Years	Total no registered (WAEC)				No with 5C's including mathematics & English			
	M	F	T	%	M	F	T	%
	Performance				Performance			
2016	4378	4239	8617	75.0	3089	2938	6027	53%
2017	4829	5036	9865	85.0	3798	4050	7848	67
2018	4444	4311	8755	80.0	2933	2637	5570	51
2019	4772	4588	9360	82.0	3898	4052	7950	70
2020	7954	6553	14507	62.35	4495	4550	9045	67.0

Table 1 shows that students' enrollment increased by 50% in year 2020 more than the previous years' enrolment. However, the overall average performance of year 2020 was 62.35 which was low compared to previous years. The table revealed that average performance in WASSCE examination were 75%, 85%, 80% and 82% for years 2016, 2017, 2018 and 2019 respectively. Findings from table

1 reveals that average performance in year 2020 WASSCE examination was low compared to the previous years despite the increase in enrolment.

Research Question 2: What is the performances of SSIII students in WASSCE examination before covid-19 pandemic period in Ekiti State?

Table 2: SSIII Students' Performance in WASSCE before Covid-19 Pandemic in Ekiti State.

Year/Examination type	Category	M	F	Total	%
2016 WAEC	No of student with credits and above	4378	4239	8617	75.0
	No with 5 credits including Math and Eng.	3089	2938	6027	53.0
	Total no of registered Students			11424	75.0
2017 WAEC	No of student with 5 credits and above	4829	5036	9865	85.0
	No with 5 credits including Math and Eng.	3798	4050	7848	67.0
	Total no of registered Students			11672	85.0%
2018 WAEC	No of student with 5 credits and above	4444	4311	8755	80.0
	No with 5 credits including Math and Eng.	2933	2637	5570	51.0
	Total no of registered Students			10973	80.0%

2019 WAEC	No of student with 5 credits and above	4772	4588	9360	82.0
	No with 5 credits including Math and Eng.	3898	4052	7950	70.0
	Total no of registered Students			11400	82.0

Table 2: Shows the percentage performance of students from 2016-2019 WAEC examination. No of students with credit and above during the 2016 WAEC was 8617(75.0%), while the numbers of students with five credits including mathematics and English was 6027(53%). Also, from 2017 WAEC, the numbers of students with five credits and above were 9865(85%), while the numbers of the students with five credits including mathematics and English were 7848(67%). Furthermore, numbers of students with five credit and above during the 2018 WAEC examination were 8755(80%), while numbers of

students with 5 credits including mathematics and English were 5570(51%). Lastly, on the table numbers of students with 5 credits and above were 9360(82.0%), while number with 5 credits including mathematics and English 7950(70.0%). According to the table the highest number of student's performance was in the year 2017 WASSCE.

Research Question 3: What is the performances of SSS III students in WASSCE examinations during covid-19 pandemic period in Ekiti State?

Table 3: Analysis of SSIII Students performance in WASSCE examination during covid-19 pandemic period.

Year/Examination type	Category	M	F	Total	%
2020 WAEC	No of student with 5 credit and above	4129	603	10165	85.00
	No with 5 credits including Math and Eng.	4495	4550	9045	67.00
	Total no of registered Students			14507	62.35

Table 3 shows students' performance in WASSCE external examination during covid-19 pandemic period. 10165 students with 5 credits and above were gotten, while 9045 students representing 67.0% had five credits including mathematics and English

Hypothesis 1

HO₁: There is no significant difference between the students' performance in WASSCE external examination before covid-19 period and performance during covid-19 period.

Table 4: t-test analysis of difference in the performance of students in WASSCE before covid-19 and during covid-19 period.

Categories	N	Mean	SD	df	t-cal	t-val	Remark
Before Covid-19	11367	43.45	22.19	27.311	11.65	1.79	
During Covid-19	14507	55.09	24.98				

From table 4, the mean scores of performance of students in external examination before covid-19 (43.45) which is less than the mean scores of

performance of students during covid-19 (55.09), with a mean difference of (11.64). Its measure of variability has difference of (2.79). The *t-test* analysis

show that $t(\text{cal})$ (11.65) is higher than the $t(\text{tab})$ (1.79) at $p < 0.05$ level of significance. This indicated that there was significant difference between the performance of students in external examination before Covid-19 and during Covid-19 period. Hence, the null hypothesis was rejected. Students' performance before covid-19 period was higher than performance during covid-19.

Discussion

From the findings of this study, it was revealed that the average number of registered students before covid-19 who sat for WASSEC were lower compared to the numbers of registered students who sat for the examination during covid-19. This study showed that, despite the lockdown and various restrictions put in place by government and institutions, students' enrolment for WASSEC increased and even went beyond the range of increase in the previous years.

Findings revealed that performance of Senior Secondary year three students' in external examinations before Covid-19 pandemic period in Ekiti State was moderate compared to the performance of senior secondary school students during covid-19. It is clear that the COVID-19 pandemic has resulted in a major disruption in the educational system, much of which is still being understudied due to the severity of its effects (Zethembe 2020). This was due to the non-academic and extra curriculum activities engaged by the students at home during the lockdown period while some were not studying at all. The performance of students in external examination before covid-19 was below expectations compared to the 2020 WASSEC examination which was during the covid-19 pandemic. It was

opined that examinations written within the covid-19 period would be adversely affected due to students' inability to access normal classroom teaching and learning facilities and adequate preparations for the examination (Ogunode & Jegede, 2021). This study revealed that students' performance was seriously affected as it is observed that the performances recorded particularly in Ekiti state before covid-19 were better than the performance during covid-19. The findings of this study were in line with the findings of Elejere, (2018) who comparatively analyzed students' performance in West African Senior Secondary Certificate Examination between 2014-2016. The findings as reported by WAEC chief examiners showed that candidates' performance in the external examinations always improve year after year. The performance of students in year 2020 during covid-19 did not follow this pattern as compared to the previous years (WAEC 2016- 2019).

Conclusion

In conclusion, it was discovered that the performance of Senior Secondary year three students' in external examinations before Covid-19 pandemic period in Ekiti State was moderate compared to the performance of senior secondary school students during covid-19. This study showed that covid-19 pandemic has resulted in a major disruption in the educational system and has impacted on the academic performance of senior secondary students in Ekiti State.

Recommendations

Based on the findings of this study, the following recommendations were made;

- i. Government should provide and equip schools with enough ICT

- equipment/facilities that make up a better and standard e-learning and teaching environment.
- ii. Government should also support and encourage teachers by organising seminars and workshops on some special teaching methods, including virtual teaching and learning from time to time in order to increase their performances during crisis period
 - iii. Parents and other stakeholders should assist governments by contributing their own quota to provide ICT support for their children/wards during crisis period.

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