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Shugaba Saminu

Artificial Intelligence (AI) in Mathematics Classrooms in FCT Abuja: Teachers' Opinions, Practices and Challenges

By

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Abstract

This study investigated Artificial Intelligence (AI) in Mathematics classrooms in FCT Abuja: Teachers' opinions, practices and challenges. The objectives were to seek teachers' opinions, practices and challenges of using AI in Mathematics classrooms. Population of the study comprised of 256 Mathematics teachers in 70 public Senior Secondary Schools in FCT, Abuja. Multistage sampling procedure was used to select 105 participants. A validated questionnaire by the expert in the field of Mathematics Education and an expert in ICT area, with a reliability index 0.85 using Cronbach Alpha was used. Data were analysed using mean for research questions while independent t-test statistics and ANOVA was used to test null hypotheses. The findings are: AI systems and applications could be used as an educational tool to facilitate teaching and learning of Mathematics. Challenges faced by Mathematics teachers in applying AI systems and applications are lack of technical infrastructure, epileptic power supply, inadequate training to effectively integrate AI systems in Mathematics teaching and learning among others. Additionally, the findings revealed no statistically significant difference in the mean scores of Mathematics teachers' opinions on the use of AI systems in teaching based on gender; however, statistically significant differences were found in the mean scores of the respondents, which is challenges faced by them when using AI systems based on academic qualifications and years of experience. Based on findings, it was recommended among others that government should provide necessary AI tools for teachers, conduct training for teachers and partner with AI developed countries to organize remote training for both male and female teachers on the use of AI systems.

Keywords: Artificial intelligence, mathematics education, teachers' opinions, teaching practices, educational challenges

Introduction

Artificial intelligence (AI) has been increasingly integrated into educational settings, offering transformative potential for mathematics classrooms. AI tools can enhance learning experiences by providing personalized instruction, automating assessments, and offering interactive problem-solving environments. AI is a process that produces human intelligence

through machines, especially computer systems. Specific applications of AI include expert systems, natural language processing, speech recognition and machine vision. With the advanced system, AI can perform human-like functions or duties through the level of difficulties that have been set up (Mohamed, et al., 2022). Copeland (2022) sees artificial intelligence

(AI) as the ability of a digital computer or computer-controlled robot to perform tasks commonly associated with intelligent beings. Frankenfield (2023) defined Artificial intelligence (AI) as simulation of human intelligence by software-coded heuristics.

Alagbe et al. (2021) viewed AI as the ability of a computer or machine to mimic the capabilities of the human mind – learning from examples and experience, recognizing objects, understanding and responding to language, making decisions, solving problems – and combining these and other capabilities to perform functions a human might perform, such as greeting a hotel guest or driving a car. Ajinuhi and Onoge (2024) defined Artificial Intelligence as a branch of science producing and studying the machines aimed at the stimulation of human intelligence processes. This study sees artificial intelligence (AI) as a brainbox that has the ability to imitate the capabilities of human mind.

Researchers have identified AI as a solution to the shortage of trained teachers and resources and a means of maximizing the potential of education (Zhang & Aslan, 2021; Zawacki, et al., 2019). However, the role of AI will never ‘take over’ the duty of educator in any way (Cope, et al., 2020). In recent years, the resurgent interest and increasing use of AI in educational contexts have led to the emergence of the research

field “AI in education”, or AIED in short. AIED refers to the use of AI technologies in educational settings that facilitate teaching and learning by simulating human intelligence at various degrees to infer, judge, predict, and make decisions (Hwang, et al., 2020). These may take the form of providing personalized feedback to students and teachers, guidance for policymakers, or assistance in decision-making processes (Miao, et al., 2021; Seldon & Abidoeye, 2018).

Empirical investigations have further supported these hypotheses, demonstrating the positive impact of AI on student achievement (Rittle & Koedinger, 2009; Moltudal, et al., 2020; Gonzalez, et al., 2019). In addition to its impact on student outcomes, AI is also essential for the sustainable development of our society (Mohammad, et al., 2024). According to UNESCO, ensuring “inclusive and equitable quality education and promoting opportunities for lifelong learning for all” is necessary for sustainable development, and AI can help achieve this (Pedro, et al., 2019). The role of technology in higher learning is to enhance human thinking and augment the educational process (Popenici & Kerr, 2017). AI helps students in finding answers faster and easier. All information about the lesson can be easily accessed by students using this innovative intelligence software. In this generation, students are

more inclined to learn and explore new knowledge on their own, so this powerful tool of AI can help students to explore more without waiting for an educator (Mohamed, et al., 2022).

The utilization of digital technologies and AI is revolutionizing education methodologies and processes (Zhang & Aslan, 2021). These applications were first introduced as computer and computer-related systems and have now evolved into online education platforms (Chen, et al., 2020). AI has gained popularity among educators and students across various academic levels and fields. Although there are discrepancies in its implementation, this calls for a redesign of educational frameworks and settings (Chassignol, et al., 2018). The integration of AI into education enhances the learning experience, providing a personalized, adaptable, comprehensive and enjoyable approach to education. It can be seen that there is an increasing trend towards AI in mathematics education research (Hwang, et al., 2023). Teachers' insights into the application of AI in mathematics education reveal both the promising benefits and significant challenges associated with its implementation. Teachers recognize the potential of AI to support differentiated learning and provide real-time feedback. AI-driven platforms, such as intelligent tutoring systems, can adapt to individual

student needs, offering tailored exercises and explanations. This personalized approach helps address diverse learning paces and styles, potentially improving student engagement and achievement (Holmes, et. al., 2019).

AI can serve various functions in math education, including acting as a learning companion or tutor, aiding teachers, acting as a learning aid, and offering advisory support for policymaking in education (Chen et al., 2020; Hwang & Tu, 2021; Montalvo et al., 2018; Wei et al., 2018). Nonetheless, certain parameters must be met for the effective integration of AI in math education. These conditions entail defining the teacher's role, establishing appropriate usage boundaries, and adapting to or modifying traditional teaching methods (Voskoglou & Salem, 2020). When examining research on AI in education, it becomes apparent that while personalized teacher systems, learning systems, and environments, as well as machine learning technologies, are widely used, the implementation of chatbots is not as prevalent (Hwang & Tu, 2021; Zhang & Aslan, 2021).

AI adoption in the classroom has not been fully implemented because many teachers still have a negative attitude toward technology and choose not to use it (Nguyen, 2023; Al-Shirawia & Tashtoush, 2023; Rasheed & Tashtoush, 2023; Kim,

2023). Teacher anxiety in using new technologies and their preference to stay in their comfort zone, using the same materials and methodologies they are already familiar with are among the reasons that interfere with their usage of technology in on-site teaching setup (Hwang et al., 2023). A study of teachers' overall insights of AI revealed that in the past, they were heavily influenced by the concept of AI propagated through the media and science fiction, which led them to regard AI as an occupational threat that would replace their jobs rather than as a support that can improve learning and instructional delivery. On the other hand, recent research has helped raise teachers' expectations for significant changes in the educational sphere, such as the application of AI in various educational contexts (Obeidat, 2022). In light of this, a new term has emerged: *artificial intelligence in education* (AIED), which besets all aspects of AI's educational applications. Teachers' opinions of AIED systems differ depending on their instructional beliefs, teaching experiences, previous experience with educational technology, and the effectiveness and necessity of a specific technology, which may influence their desire to accept new educational technology. Several studies on teachers' opinions of AIED found that they commonly expected AI to (a) provide a

more effective teaching and learning process through digitalized learning material and multimodal human-computer interactions (Jarrah, 2023) and (b) resolve various learning difficulties of students, catering to their needs despite large class sizes (Mahmoud, 2020).

Furthermore, research indicates that AIED can dramatically reduce instructors' administrative workload by taking over easy and repetitive duties (Wardat et al., 2023). Despite these educators' positive attitudes toward AIED, scholars have claimed that before implementing AI in the classroom, teachers must learn how to use technology properly to integrate it into their curriculum more effectively. They must also understand the significance of AI and its educational benefits to be open to using modern technology in their lessons. Furthermore, many instructors and school authorities have not yet encountered AI-based learning support. They may merely see it as slightly more advanced educational technology, underestimating the AI's significance in the classroom. As a result, before an AI support system can be successfully implemented in education, teachers must test it themselves to understand how it helps scaffold learning (Wang et al., 2020; Mahmoud, 2020).

Muhammad et al. (2024) carried out a study on artificial intelligence in education: Mathematics teachers' perspectives,

practices and challenges. They found that AI could be used as an educational tool to facilitate teaching and develop students' performance by including AI systems and applications in the curricula. They increased motivation for learning, encouraging challenge, competition, and suspense among students and considering their differences. The results also showed the most critical challenges that mathematics teachers face in applying AI systems and applications, the most prominent of which are the need to exert more effort than the traditional method when using different AI systems and applications and the pressures placed on them, which prevent them from using AI in teaching. Additionally, the findings revealed no statistically significant differences in mathematics teachers' perspectives regarding the importance of using systems and applications of AI in teaching.

Korkmaz Guler, et al. (2024) on artificial intelligence application in mathematics education: Evaluating ChatGPT's academic achievement in a mathematics examination, found that ChatGPT-4 was more successful in the exam compared to ChatGPT-3.5 version, was better at understanding the questions asked, understood the instructions better and included more details in the question solution, and at the same time, both

versions made common and different mistakes.

In a related study conducted by Johana et al. (2023) on artificial intelligence in personalised learning in Mathematics, they found an improvement in students' academic performance in Mathematics based on personalised learning with AI. Ajinuhi and Onoge (2024) submitted that AI for teaching and learning of mathematics programme in tertiary institutions aid presentation of mathematics lectures, preparation of mathematics students result report and construction of instructional resources for mathematics. In examining the effects of AI on elementary students' Mathematics achievement, Hwang (2022) found that Mathematics learning topic and grade level variables significantly moderate the effect of AI on mathematics achievement.

Statement of the Problem

Despite the growing global recognition of the transformative potential of artificial intelligence (AI) in education, the integration of AI into Mathematics Education in Nigeria faces significant challenges. While AI offers opportunities to enhance personalized learning, improve student engagement, and streamline administrative tasks, Mathematics teachers encounter a unique set of barriers that impede effective implementation. These barriers include limited access to

technology, inadequate professional development, concerns about data privacy, and infrastructural deficiencies. Teachers' opinions are crucial for understanding the practical realities of AI adoption in Nigerian classrooms. Their experiences and practices can shed light on both the benefits and the challenges of using AI tools in a resource-limited context. However, there is a lack of comprehensive research on how Mathematics teachers perceive and utilize AI, and the specific challenges they face in this process. Therefore, the problem is twofold: there is a need to explore Mathematics teachers' opinions on the use of AI in their classrooms, and to identify the systemic and practical challenges that hinder the effective integration of AI technologies in the Nigerian educational system. Addressing these issues is essential for developing strategies that can harness the potential of AI to improve Mathematics Education in Nigeria, ensuring that both teachers and students can benefit from advancements in educational technology. It is against the backdrop that the study intends to investigate artificial intelligence (AI) in Mathematics classrooms in FCT Abuja: Teachers' opinions, practices and challenges.

Research Questions

The following research questions are generated to guide this study:

- i. What are the opinions of FCT Mathematics teachers on the use of AI systems and applications in teaching?
- ii. What are the challenges faced by FCT Mathematics teachers when applying AI systems and applications in teaching?

Hypotheses

Ho₁: There is no statistically significant difference in the means of Mathematics teachers' opinions on the use of AI systems and applications in teaching based on gender.

Ho₂: There is no statistically significant difference in the means of challenges faced by Mathematics teachers' when applying AI systems and applications in teaching based on academic qualifications and years of experience.

Methodology

The research design for this study is descriptive survey since the study is on Mathematics teachers' opinions on the use of AI and challenges faced in using them. The population of the study included all the two hundred and fifty six (256) mathematics teachers in seventy (70) public Senior Secondary schools Abuja. The sample for the study was 105 mathematics teachers. Multistage sampling procedure was used for the study. The first stage involved simple random technique to select three (3) Area Councils from six (6) Area Councils that comprised of Federal Capital Territory Abuja. The second stage

involved the selection of seven (7) schools from the three (3) selected Area Councils using stratified simple random sampling technique. The third and the last stage involved the selection of 5 mathematics teachers from each of the 7 schools selected in three (3) Area Councils using purposive simple random sampling technique.

The instrument used for data collection was a questionnaire titled Mathematics Teachers' Opinions and Challenges on the use of Artificial Intelligence Questionnaire (MTOCAIQ). It contained two sections. Section A elicited information on the Bio-data of teachers while section B elicited information on the items related to the research questions. The instrument was validated by the expert in the field of Mathematics Education and an expert in ICT area. A pilot test was conducted to ascertain reliability of the instrument using

25 Mathematics teachers who are not part of the study area. A reliability index stood at 0.85 using Cronbach Alpha. The r-value of 0.85 indicates a high reliability index for the instruments.

Data were analysed using simple percentage and mean were used for bio-data of mathematics teachers and research questions while independent t-test statistics and Analysis of Variance (ANOVA) at 0.05 level of significance were used to analyse null hypotheses. Decision taken is that any mean score below 2.50 is adjudged disagreed while 2.50 and above is adjudged agreed. For testing the null hypotheses is such that if the p-value is less than 0.05 level of significance then, the null hypotheses will not be accepted but if the p-value is greater than 0.05 level of significance then, the null hypotheses will be accepted.

Results Presentation

Table 1: Respondents’ Information on Gender, Academic Qualifications and Years of Experience

S/N	Gender	Frequency	Percentage (%)
1	Male	69	65.7
2	Female	36	34.3
	Total	105	100.0
Academic Qualifications		Frequency	Percentage (%)
1	B.Sc.(Ed.)/B.Sc. +PGDE	89	84.8
2	M.Sc.(Ed)/M.Ed.	15	14.3
3	PhD	1	1.0
	Total	105	100.0
Years of Experience		Frequency	Percentage (%)
1	1 – 5	21	20.0
2	6 – 10	30	28.6
3	11 – 15	42	40.0
4	16 & above	12	11.4
	Total	105	100.0

Source: Field Survey, 2024

Table 1 shows respondents’ information on gender, academic qualifications and years of working experience. On gender of the respondents, 69 (65.7%) respondents were male Mathematics teachers while 36 (34.3%) were female teachers. On the academic qualifications of the respondents, 89 (84.8%) respondents had B.Sc. (Ed.)/B.Sc. with PGDE, 15 (14.3%) respondents had M.Sc. (Ed.)/M.Ed. while

only 1 (1.0%) of the respondents had PhD as at the time of this study. On the years of working experience, 21 (20.0%) respondents had 1 – 5 years working experience, 30 (28.6%) had 6 – 10 years, 42 (40.0%) had 11 – 15 years while 12 (11.4%) respondents had 16 years and above working experience.

Research Question 1: What are the opinions of FCT Mathematics teachers on the use of AI systems and application in teaching?

Table 2: Opinions of FCT Mathematics Teachers on the use of AI in Teaching

S/N	Items	SA	A	D	SD	\bar{x}	Decision
1	Khan Academy enhances the teaching and learning of mathematics	11	63	24	7	2.74	Agreed
2	Integrating AI applications like Desmos into my mathematics teaching practices is easy	17	59	19	10	2.79	Agreed
3	The use of AI systems increases student engagement in mathematics classes	22	76	6	1	3.13	Agreed
4	I am confident in my ability to use AI tools and applications in my mathematics teaching	8	61	29	7	2.67	Agreed
5	There is need for training and support for using AI systems in teaching mathematics	26	79	-	-	3.25	Agreed
6	Math Games help me save time in preparing and delivering mathematics lessons	19	66	18	2	2.97	Agreed
7	AI applications align well with the current mathematics curriculum I teach	1	23	72	9	2.15	Disagreed
8	AI systems improve students' performance in mathematics	13	69	15	8	2.83	Agreed
9	I encounter significant challenges or barriers when using AI systems in my mathematics teaching	14	49	40	2	2.71	Agreed
10	I am likely to continue using AI systems in my mathematics teaching in the future	26	71	8	-	3.17	Agreed
Sectional Mean						2.84	Accepted

Source: Field Survey, 2024

N = 105

Table 2 reveals the opinions of FCT Mathematics teachers on the use of AI system and application in teaching. All the items were agreed upon except item 7 that AI applications did not aligned well with the current mathematics curriculum they teach ($\bar{x} = 2.15$). Sectional mean (\bar{x}) of 2.84

showed that Mathematics teachers' opinions on the use of AI system and application in FCT were positive.

Research Question 2: What are the challenges faced by FCT Mathematics teachers when applying AI systems and applications in teaching?

Table 3: Challenges faced by FCT Mathematics Teachers when Applying AI in Teaching

S/N	Items	SA	A	D	SD	\bar{x}	Decision
11	My school lacks the necessary technical infrastructure to effectively integrate AI systems in mathematics teaching	20	79	5	1	3.12	Agreed
12	I have received adequate training to effectively use AI applications in my mathematics classes	-	21	68	16	2.05	Disagreed
13	Epileptic power supply makes it difficult in using AI systems and applications in teaching	24	67	11	3	3.07	Agreed
14	Getting latest version of AI systems and applications is difficult	9	59	33	4	2.70	Agreed
15	All students have equal access to the necessary devices and internet connectivity to use AI tools effectively	-	10	88	7	2.03	Disagreed
16	More effort needed in using AI systems and applications than conventional teaching	19	59	21	6	2.87	Agreed
17	I have access to adequate technical support when I encounter issues with AI systems in the classroom	-	11	79	15	1.96	Disagreed
18	Too much workload on Mathematics teachers prevent them from using AI systems and applications in teaching	12	77	16	-	2.96	Agreed
19	Challenges of using various AI techniques	17	80	8	-	3.09	Agreed
20	AI tools make it difficult to maintain student engagement during mathematics lessons	5	33	59	8	2.33	Disagreed
Sectional Mean						2.62	Accepted

Source: Field Survey, 2024

N = 105

Table 3 shows the challenges faced by FCT Mathematics teachers when applying AI applications in teaching. Respondents agreed on items 11, 13, 14, 16, 18 and 19 but disagreed on items 12, 15, 17 and 20. The sectional mean (\bar{x}) of 2.62 indicated that FCT Mathematics teachers faced

various challenges when applying AI systems and applications in teaching.

Testing of Hypotheses

H₀₁: There is no statistically significant difference in the means of Mathematics teachers’ opinions on the use of AI systems and applications in teaching based on gender.

Table 4: Independent Sample T-test Results by Gender

		Levene’s Test for Equality of Variance		Test for Equality of Means			
		F	Sig.	T	Df	Sig. (2-tailed)	Mean Difference
Teachers’ Gender	Equal variances assumed	6.727	.038	.766	103	.468	.750
	Equal variances not assumed			.804	89.781	.451	.750

Table 4 reveals independent t-test result based on gender. No statistically significant difference was found in the mean scores of Mathematics teachers' opinions on the use of AI systems and applications in teaching based on gender ($p = 0.468$). Therefore, the null hypothesis was accepted.

H₀₂: There is no statistically significant difference in the means of challenges faced by Mathematics teachers' when applying AI systems and applications in teaching based on academic qualifications and years of experience.

Table 5a: Results of the ANOVA Test based on Academic Qualifications

Qualification	N	\bar{x}	SD	Variance Sources	Sum of Square	Df	Mean of Square	F	Sig.
B.Sc.(Ed)/B.Sc.+PGDE	89	25.97	3.37	Between groups	62.63	3	20.88	0.09	0.004
M.Sc.(Ed)/M.Ed.	15	25.44	3.21	Within groups	21861.98	102	214.33		
PhD	1	23.74	3.08	Total	21924.86	105			

Table 5a shows statistically significant difference in the mean scores of the respondents, which are the challenges faced by mathematics teachers when using AI in teaching based on academic qualifications. Those with B.Sc (Ed)/B.Sc.+PGDE face more challenges when using AI systems and applications in teaching compared to those with M.Sc.(Ed)/M.Ed. or PhD. This may be due to the combination of advanced knowledge, extensive practical experience, advanced problem-solving skills, and better

access to resources and mentorship typically equips M.Sc.(Ed)/M.Ed. and PhD holders with a stronger ability to handle the challenges associated with AI systems and applications. However, despite these challenges, all teachers, regardless of their varied academic qualifications, agree with the importance of using AI technologies in education, indicating the need for further support and resources to overcome the challenges they face.

Table 5b: Results of the ANOVA Test based on Years of Experience

Years of Experience	N	\bar{x}	SD	Variance Sources	Sum of Square	df	Mean of Square	F	Sig.
1 – 5	21	28.13	4.11	Between groups	72.09	3	24.03	0.097	0.014
6 – 10	30	27.67	4.25	Within groups	25153.61	102	246.60		
11 – 15	42	21.88	4.69	Total	25225.70	105			
16 & above	12	20.96	4.78						

Table 5b shows significant difference between the means of respondents, which is the challenges faced by mathematics teachers when applying AI systems and applications in teaching based on their years of experience, particularly for those who had worked for 1 – 5 years and 6 – 10 years.

Discussion of Findings

The results presented highlight the importance of using AI systems and applications in teaching mathematics from the FCT teachers' opinions. The result reveals that AI systems and applications enhance teaching and learning of Mathematics ($\bar{x} = 2.74$), making teaching practice so easy ($\bar{x} = 2.79$), increasing students' engagement ($\bar{x} = 3.13$), building confidence in teaching Mathematics ($\bar{x} = 2.67$), saving time in lesson delivery ($\bar{x} = 2.97$), improve students' performance in Mathematics ($\bar{x} = 2.83$) among others. Though, respondents disagreed with the alignment of AI systems and applications with current Mathematics curriculum ($\bar{x} = 2.15$) and encountered challenges when using AI systems in teaching and learning but the integration of AI systems and applications in teaching and learning of Mathematics still give hope and promising future in all aspect of human endeavours. The result also shows no statistically significant difference in the mean scores of

Mathematics teachers' opinions on the use of AI systems and applications in teaching based on gender ($p = 0.468$). The result is in accordance with the findings of Muhammad et al. (2024) who found that AI could be used as an educational tool to facilitate teaching and develop students' performance by including AI systems and applications in the curricula. Also, the result concurs with the findings of Johana et al. (2023) who found an improvement in students' academic performance in Mathematics based on personalised learning with AI.

In the study of the challenges faced by FCT Mathematics teachers when applying AI systems and applications in teaching, respondents identify lack of technical infrastructure to effectively integrate AI systems in Mathematics teaching ($\bar{x} = 3.12$), no adequate training on effective use of AI, epileptic power supply, getting latest version of AI systems, students' unequal access to devices and internet connectivity to use AI tools, inadequate technical support for Mathematics teachers among others are challenges faced by FCT public Senior Secondary School Mathematics teachers in using AI systems and applications in teaching and learning. The challenges faced may be as a result of inexperience and lack of knowledge in working with software, computer and other educational innovative applications. This

result is in line with that of Muhammad et al. (2024) who found that the most critical challenges that mathematics teachers face in applying AI systems and applications, the most prominent of which are the need to exert more effort than the traditional method when using different AI systems and applications and the pressures placed on them, which prevent them from using AI in teaching.

Hypothesis two shows statistically significant difference in the mean scores of the respondents, which are the challenges faced by Mathematics teachers when using AI in teaching based on academic qualifications. Those with B.Sc. (Ed)/B.Sc. +PGDE face more challenges when using AI systems and applications in teaching compared to those with M.Sc.(Ed)/M.Ed. or PhD. This may be due to the fact that Master's and PhD holders typically engage in larger and more complex projects, often involving real-world applications of AI. This hands-on experience is invaluable for understanding the practical challenges and nuances of AI implementation. However, despite these challenges, all teachers, regardless of their varied academic qualifications, agree with the importance of using AI technologies in education, indicating the need for further support and resources to overcome the challenges they face.

Also, the results of the ANOVA test based on years of experience reveal significant difference between the means of respondents, which is the challenges faced by mathematics teachers when applying AI systems and applications in teaching, particularly for those who had worked for 1 – 5 years and 6 – 10 years. This may be because they are still learning in the system as they had not spent more than 10 years in the service. This results agree with Tashtoush, et al. (2023) who opined that new Mathematics teachers to possess more skills and experience in using technology and AI techniques than their more experienced counterparts.

Conclusions

Based on the findings, the study concluded that AI's integration into mathematics education promises to improve learning outcomes, streamline teaching processes, and foster a more dynamic and responsive educational environment. Also, AI can enhance engagement through interactive and adaptive learning platforms, facilitate immediate feedback, and support teachers with valuable insights derived from data analytics.

Recommendations

The following recommendations were made based on the findings:

1. There is need for the government to provide necessary tools for teachers and

students to facilitate the use of AI systems and applications in schools.

2. Mathematics teachers should endeavour to use modern teaching methods, especially the one that involves the use of AI systems and applications.
3. AI systems and applications should be integrated into curriculum to motivate students to use them to improve learning outcomes.
4. Government, from time to time, should conduct training for Mathematics teachers on the use of AI systems and applications
5. Government should partner with AI developed countries to organise remote training for both male and female teachers on the use of AI systems and applications.

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Relationship between Delegation of Authority and University Management Effectiveness in Rivers State, Nigeria

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Abstract

The study investigated correlation between delegation of authority and university management effectiveness in Rivers State, Nigeria. Research design adopted for the study was correlational design. Population for this study was 209 administrators in Rivers State Owned Universities. The sample size was 84 respondents which represents 40 percent of the population. The instrument for data collection was researchers constructed questionnaire titled “Delegation of Authority and University Management Effectiveness in Rivers State (DAUMEQ)”. The instrument consists of section A and section B. Section A seeks on the delegation of authority in universities while section B elicits information on university management effectiveness in Rivers State. The instrument was face and content validated by experts in Educational Management, Rives State University Port-Harcourt. Cronbach Alpha reliability was used to establish the reliability of the instrument which gave 0.80 and 0.87. Linear regression was used to determine the correlation coefficient of the variables as well as to test the null hypotheses. In the hypothesis testing, when the p-value is less than the level of significance, the null hypotheses is rejected and vice versa. The study found that there is a strong positive correlation between specific delegation of authority and university management effectiveness in Rivers State. The study affirms a weak relationship between general delegation of authority and university management effectiveness in Rivers State. It was recommended that university management should endeavor to follow specific delegation of authority which will enable various managers of the institution to carry out tasks according to specification to achieve institutional goals.

Keywords: *Delegation*, authority, management, effectiveness, university

Introduction

Management effectiveness in any organization (university) interpret the basic concepts of how to choose the proper way of assigning task to be effective in managing their employee while keeping delegation of authority at an optimal level. Choosing a type of delegation of authority is the decision of a manager thereby, allowing team members

(subordinates) to carry out a task or how to complete a task to reach set goals or resolution is very important in an organization (university). The study is focused on two types of delegation of authority which includes general delegation of authority and specific delegation of authority which are very essential in the

university management effectiveness in Rivers State.

When a management grants a subordinate the power to carry out every task within their department, this is known as general delegation. In universities, the authority of the head of department may be likened to a general delegation. The head of department has the role of planning, directing, and organizing other employees within the department. When necessary, the manager can provide the subordinates with guidance in addition to exercising overall supervision. General delegation enables subordinates to build confidence in themselves. Subordinates can handle any tasks within the scope of their authority. General delegation helps to build the skills of subordinates and also motivates them to put in their best for the task assigned to them.

Specific delegation of authority occurs when a manager gives a subordinate a particular or a specified duty or responsibility. In specific delegation, the delegated task has a precise definition. With specific delegation, the school manager assigns employees to a definite job responsibility. School administrators identify job responsibilities that are suitable for each of the employees' considering their capabilities. For instance, the head of department might assign a

lecturer to advise students on academic and result matters.

Statement of the Problem

Delegation of authority obviously is one of the core concepts of management leadership. If university management delegates authority effectively, it will facilitate the service delivery and the achievement of set goals of the institution. However, it has been observed by the researchers in Rivers State universities that delegation of authority has not been practiced effectively by the management of the universities. This has been so because of the lack of confidence in their subordinates, fear of not being able to deliver tasks, fear of being shown up especially in the use of modern electronic technology, subordinates becoming proud etc. This has caused stress and disorder to the human body bringing about health challenges and can also lead to death. Institutions with poor management effectiveness that have a weak relationship with the subordinates always perform below expectations. Such institutions lack vision and adequate understanding of the institution, and good communication skills. Some managers also feel that subordinates make mistakes and hold out the delegated tasks badly since powers are presented to them. It is against this backdrop that the researchers sought to investigate the correlation between

delegation of authority and university management effectiveness in Rivers State, Nigeria.

Literature Review

Delegation of authority is a precondition for an effective execution of results-oriented management (Singh, 2017). Delegation of authority in management effectiveness is significant in the everyday actions of the school system. Okafor (2010) stated that a school is an educational system that comprised of different compartment functioning synergistically to deliver educational goals and objectives. Therefore, in the management of higher education, it is expected that school managers delegate duties or authority to others in the lower administrative cadre. This would help in achieving a successful and a well-coordinated management system.

The main purpose of delegation of authority is to make certain that administrative task is not restricted to only one person. Kongnyuy (2020) maintained that the primary objective of delegation of authority is to foster a more efficient use of resources and facilitate the emergence of more agile and responsive organizations, thus enhancing overall performance. This is because performance improves when the people who are closest to the work have managerial authority and

responsibility delegated directly to them, leading private sector organizations ensure that internal processes provide managers with the authority and flexibility they need to contribute to the organization's mission.

It is not surprising that higher education in this 21st century find ways of ensuring that management delegate authorities that are designed to be clear and easy to understand, they have to explain any area of the tasks that is difficult to the understanding of subordinates for various administrative functions, they demand to introduce decision-making at the appropriate point (Kamal & Hayat, 2018). Referable to the high pace of student admissions into higher education which could be followed to the globalization of delegation of authority and management of higher education is of uttermost importance to reach institutional goals (Aniskina, 2015). Nevertheless, all delegations apply to position and not an individual delegation of authority listed is unique to that position.

It has been established by Yulk and Ping (1999) that a manager alone cannot do all the chores of an organization likewise in the management of higher education. Deyi (2011) opined that in other to assemble the set goals of the institution, the management of the institutions must delegate authority to

their subordinate staff to enable them to accomplish the intentions and targets of the institution. Wadi (2009) stated that, delegation of authority boosts the moral of subordinate in any organization and it make subordinate to have assurance and a sense of belonging as part of the leadership in the organization which leads to good relationship and peaceful co-existent amongst management and subordinates. Delegation of authority is a necessary subject for organizations.

In the view of Al-Jammal, Al-khasawneh and Hamadat (2015) delegation of authority has impacts on an organization, on the manager and on the subordinate. They opined the impact of delegation of authority on organization helps in achieving competitive advantage, increase in production as well as effectiveness in task completion. In the same vein, they submitted that delegation of authority has lessened the functional burdens of the manager and it has established cooperation and faith between the manager and the subordinate which led to subordinate satisfaction. Epstein and O'Halloran (1999) explains that it reduces physical and intellectual efforts exerted by manager and other subordinates on the level of an employee, they stated that delegation of authority works on achieving functional

empowerment, constructing alternative and administrative leadership, making employees feel self-confidence and motivation for excellence in performance, delegation of authority meets the needs of management of higher education rapidly, delivering or providing the service will not be delayed due to delegation of authority. In an organization the manager has several obligations and work to do in order to bring down his burden, certain responsibility and authority are delegated to the lower-level staff to capture the study done on the managers' behalf (Cole, 2004).

When the number of subordinate increases beyond the managing capacity of a manager there is need to delegate power to people who perform his chores for him. Without the practice of delegation of authority, there will be anarchy and confusion all around the institution. Delegation of authority and management effectiveness of higher education will bear to observe the due process by which every manager is required to possess a subordinate, employer will have employee for the delegation of authority to come to play in the management of an organization or higher education (Shakari, Naieh & Nouri, 2011).

In the words of Adeyemi and Olaleye (2010) that specific delegation of authority by

management help in attaining institutional objectives which shows that subordinates perform their tasks assigned to them. Okai and Kevin (2023) posited that the heads of department in higher institutions are not expected to perform all the tasks assigned to them, hence specific delegation of authority may set in such as allocation of courses to lecturers, allocation of project supervisees to lecturers, and drawing invigilators list for semester examinations among others. Okai and Kevin (2023) delegation of authority build team spirit, subordinate morale and helps to get a sense of ownership to the overall success of the tasks. Arendt (2006) when the authority is conferred for performing general management functions like organizing, planning or directing these functions are performed by subordinate managers and they enjoy the authority that is required for carrying out these responsibilities.

Purpose of the Study

The purpose of the study was to determine the correlation between delegation of authority and university management effectiveness in Rivers State. In more specific terms, the objectives of the study are to:

1. Establish the relationship between specific delegation of authority and

management effectiveness in Rivers State University.

2. Determine the relationship between general delegation of authority and management effectiveness in Rivers State University.

Research Questions

The following research questions guided the conduct of the study

1. What is the relationship between specific delegation of authority and management effectiveness in Rivers State Universities?
2. What is the relationship between general delegation of authority and management effectiveness in Rivers State Universities?

Hypotheses

The following hypotheses were tested at 0.05, level of significance.

1. There is no significant relationship between specific delegation of authority and management effectiveness in Rivers State Universities.
2. There is no significant relationship between general delegation of authority and management effectiveness in Rivers State Universities.

Methodology

The research design adopted for the study was correlational design. Correlational design is the design that measures a relationship between two variables thereby researchers assesses the statistical relationship between them with little or no effort to control extraneous variables (Nwankwo, 2016). The researchers in the study area are investigating on relationship between delegation of authority and university management effectiveness in Rivers State by correlating both which involve independent variable (delegation of authority) and dependent variable (management effectiveness of universities). The study was carried out in Rivers State. The population for this study was 209 administrators comprising Vice Chancellor, Deputy Vice Chancellor, Registrars, Librarian, Dean, Heads of Department, Directors amongst others (Source: RSU Establishment 2019 and IAUE Establishment 2019). The sample size was 84 respondents which represents 40 percent of the population. The instrument for data collection was researchers constructed questionnaire titled “Delegation of Authority and University Management Effectiveness in Rivers State (DAUMEQ)”. The instrument consists of section A and section B. Section A seeks on the delegation of authority in

universities while section B elicits information on university management in Rivers State. The respondent mainly indicated their level of agreement in the area of the study by ticking (√) the rating scale based on modified four (4) point rating scale of Strongly Agree-4.00, Agree-3.00, Disagree-2.00, and Strongly Disagree-1.00. The instrument was face and content validated by experts in Educational Management, Rives State University Port-Harcourt. Cronbach Alpha reliability was used to establish the reliability of the instrument which gave 0.80 and 0.87. This indicates that the instrument was reliable for the study. Linear regression was used to determine the correlation coefficient of the variables as well as to test the null hypotheses. Amadi (2020) asserts that when r-value obtained is between 0.1-0.49 is termed weak relationship, 0.50-0.59 is termed “moderate relationship”, 0.60- 0.89 is termed strong relationship while 0.90-0.99 is termed very strong relationship. In the hypothesis testing, when the p-value is less than the level of significance, the null hypothesis is rejected and vice versa.

Result Presentation

Research Question 1: What is the relationship between specific delegation of

authority and management effectiveness in Rivers State Universities?

Table 1

Regression Analysis on the Relationship Between Specific Delegation of Authority and Management Effectiveness in Rivers State Universities.

A: Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.643 ^a	.294	.292	.13889

a. Predictors: (Constant), Specific Delegation

Researchers' Field Data

Table 1 shows the regression analysis on the relationship between specific delegation of authority and management effectiveness in Rivers State Universities. The result of the analysis revealed that the r-value was 0.643. The correlation coefficient obtained showed that there was strong positive relationship between specific delegation of authority and the management effectiveness in Rivers State

Universities. The R-square value of .294 showed a 29.4% contribution of specific delegation of authority and management effectiveness of higher education.

Research Question 2: What is the relationship between general delegation of authority and management effectiveness in Rivers State Universities?

Table 2

Regression Analysis on the Relationship Between General Delegation of Authority and Management Effectiveness in Rivers State Universities.

A: Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.592 ^a	.242	.240	.14391

a. Predictors: (Constant), General Delegation

Table 2 shows the regression analysis on the relationship between general delegation of authority and management effectiveness in Rivers State Universities. The result of the analysis revealed that the r-value was 0.592. The correlation coefficient obtained showed that there was moderate positive relationship

between specific delegation of authority and management effectiveness in Rivers State Universities. The R-square value of 0.242 showed a 24.2% contribution of general delegation of authority and management effectiveness in Rivers State Universities.

Hypotheses: There is no significant relationship between specific delegation of

authority and management effectiveness in Rivers State Universities.

Table 3

Regression ANOVA on the Relationship Between Specific Delegation of Authority and Management Effectiveness in Rivers State Universities.

	Model	Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	2.672	1	2.672	138.502	.000 ^b
	Residual	6.405	332	.019		
	Total	9.077	333			

a. Dependent Variable: management

b. Predictors: (Constant), specific delegation

Table 3 shows that the regression analysis on the relationship between specific delegation of authority and management effectiveness in Rivers State Universities. The finding revealed that there was moderately weak and positive relationship between the two variables ($r=.643$). The result of the p-value shows that there was a significant relationship between the specific delegation of authority and management effectiveness in Rivers State Universities. ($F_{1, 332}=138.502$, $p(0.00) < .05$), hence null hypothesis was rejected at 0.05 alpha level.

H_{02} : There is no significant relationship between general delegation of authority and management effectiveness in Rivers State Universities.

Table 4

Regression ANOVA on the Relationship between General Delegation of Authority and Management Effectiveness in Rivers State Universities

	Model	Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	2.201	1	2.201	106.270	.000 ^b
	Residual	6.876	332	.021		
	Total	9.077	333			

a. Dependent Variable: Management

b. Predictors: (Constant), General delegation

Table 4 shows the regression analysis on the relationship between general delegation of authority and management effectiveness in Rivers State Universities. The finding

revealed that there was moderately positive relationship between the two variables ($r=0.592$). The result of the F-statistic shows that there was a significant relationship

between the general delegation of authority and management effectiveness in Rivers State universities. ($F_{1, 332}=106.270, p<.05$), the null hypothesis was rejected at 0.05 alpha level.

Discussion of the Findings

Specific Delegation of Authority Influence Management Effectiveness in Rivers State Universities

Table 1 revealed that the correlation between specific delegations of authority influenced management effectiveness in Rivers State owned universities. It showed that there was a strong positive relationship between specific delegation of authority and management effectiveness in Rivers State Universities. The null hypotheses showed that there was a significant relationship between the specific delegation of authority and management effectiveness in Rivers State owned universities. ($F_{1, 332}=138, p(0.000<.05)$), the null hypothesis was rejected at 0.05 alpha level. The present findings of this study was at variance with an earlier study that specific delegation of authority influence management effectiveness in Rivers State owned universities as stated by Singh (2017). He also explained that specific delegation must be followed by their various managers to ensure it was carried out according to specifications to achieve

institutional objectives. Prasad (2007) explained in his finding that manager with a strong need for control likes to have things done in a specific manner. The findings of Adeyemi and Olaleye (2010) on delegation of authority and management of public higher education institutions in Lagos State revealed that specific delegation of authority by management help in attaining institutional objectives which shows that subordinates perform their tasks assigned to them. Delegation of authority ensures accountability in discharging of specific duties and undertakings in the management effectiveness of the universities.

General delegation of authority and management effectiveness in Rivers State owned Universities

Table 2 shows the relationship between general delegation of authority and management effectiveness in Rivers State Universities. The study revealed that general delegation of authority has a moderate positive relationship with management effectiveness in Rivers State Universities. The hypothesis shows that there was a significant relationship between general delegation authority and management effectiveness of higher education in Rivers State owned universities. ($F_{1, 332}=106.270, 0.000<0.05$), the null hypothesis was rejected

at 0.05 alpha level. The findings of this study was consistent with an earlier finding of Singh (2017) who established that the heads of departments (HoDs) have the overall control and also guides the subordinates regarding different tasks. Arendt (2006) is also in support with the findings as he stressed that when the authority is conferred for performing general management functions like organizing, planning or directing these functions are performed by subordinate managers and they enjoy the authority that is required for carrying out these responsibilities. Other scholars in similar studies like Okafor (2010) who investigated delegation of authority and staff performance in Anambra State Ministry of Finance established in his study that delegation of authority enables staff to do their tasks effectively and bringing about organizational effectiveness in reaching their expected goals.

Conclusions

Based on the findings of the study, it was concluded that;

Specific delegation gave management responsibilities to perform general functions of the department also general delegation is

performed by subordinates to achieve the institutional goals and objectives in the area of study. There was a strong positive correlation between specific delegation of authority and management effectiveness in Rivers State Universities. On the other hand, the study affirmed a weak relationship between general delegation of authority and management effectiveness in Rivers State Universities.

Recommendations

Based on the conclusions of the study, it was recommended that;

1. Management of Rivers State owned universities should endeavour to follow specific delegation of authority which will enable various managers of the institutions to carry out tasks according to specification to achieve institutional goals.
2. The university management should ensure authority is conferred to first line managers for performing general management functions like organizing, planning and directing. These functions are performed by the subordinate managers and they enjoy the authority that is required for carrying out these responsibilities.

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The Impact of Integrating Real-World Contextual Examples in Secondary School Chemistry Curriculum in Student Engagement Aand Learning Outcomes: A Desk Review

By

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Abstract

Integrating real-world, contextual examples into the Chemistry curriculum have been proposed as an effective strategy to enhance student engagement and learning outcomes. This desk review synthesizes the findings from recent studies examining this instructional approach's impact. The key research questions addressed are: How do real-world examples integrated into the chemistry curriculum influence students' engagement? How do contextualised learning experiences impact students' comprehension of chemical concepts? In what ways do real-world applications enhance students' motivation and interest in learning chemistry? What are the implications of incorporating contextual examples for long-term chemistry knowledge retention and application? A systematic search of peer-reviewed literature published between 2000-2024 was conducted, and empirical studies were included in the review. The findings indicate that using real-world, contextual examples in chemistry lessons can positively impact student engagement by increasing interest, attention, and participation. Additionally, contextualized learning experiences enhanced students' conceptual understanding, problem-solving skills, and ability to apply chemical principles to practical situations. The reviewed studies also suggest that incorporating real-world applications can boost students' motivation and perceived relevance of chemistry, leading to improved long-term retention and knowledge transfer. These results have important implications for chemistry educators and curriculum designers, highlighting the benefits of integrating contextual examples to foster deeper learning and engagement. The desk review concludes by discussing the need for further research to explore the specific mechanisms by which real-world, contextual examples influence various aspects of student learning and the potential moderating factors that may affect their efficacy.

Keywords: Chemistry education, real-world examples, contextualized learning, student engagement

Introduction

In science education, integrating real-world examples into the curriculum serves as a powerful catalyst for enhancing student engagement and improving learning outcomes. This is particularly crucial in chemistry, often perceived as abstract and detached from daily life, where

contextualized learning experiences can bridge the gap between theory and practical application (Broman et al., 2022). By grounding chemical concepts in tangible scenarios—ranging from environmental issues to technological innovations—educators aim to foster deeper understanding

and long-term retention among students (Xayrullo & Rajabboyovna, 2024).

The increasing emphasis on student engagement underscores the need for innovative instructional strategies that connect curriculum content to real-world situations. Traditional pedagogical approaches, which prioritize theoretical knowledge over practical application, have been shown to hinder student interest and comprehension (Demb & Wade, 2012). Integrating real-world, contextual examples into the chemistry curriculum has emerged as a promising approach. Research indicates that when students are exposed to relevant applications of chemical principles—such as chemical reactions in baking, the role of acids and bases in food pH, and the behaviour of states of matter in processes like freezing and boiling—they are more likely to recognize the relevance of chemistry in their daily lives. This enhances motivation and fosters a deeper interest in the subject (Osman & Suryawati, 2017).

This desk review delves into the burgeoning body of research exploring how incorporating real-world contexts within chemistry education influences student learning outcomes. Thus, examining various studies and scholarly articles, this review seeks to elucidate how contextual examples

stimulate critical thinking, inspire curiosity, and cultivate a holistic understanding of chemistry's relevance in the modern world. While chemistry education traditionally emphasizes abstract concepts and theoretical frameworks, a recognized disconnect exists between classroom learning and real-world applications (Hslung, 2018). This gap often hinders students' engagement and limits their ability to grasp the practical significance of chemical principles in everyday life. Consequently, there is a growing interest in exploring how integrating real-world, contextual examples into the chemistry curriculum can enhance student engagement and improve learning outcomes.

Objectives of the Study

The primary objective of this study is to explore how real-world examples can be effectively integrated into the chemistry curriculum and to examine their influence on student engagement. The specific objectives are to:

1. identify how do real-world examples integrate into the chemistry curriculum and influence student engagement?
2. identify the impact contextualize learning experiences have on students' comprehension of chemical concepts?

3. identify how real-world applications enhance students' motivation and interest in learning chemistry?
4. identify the implications of incorporating contextual examples for long-term retention and application of chemistry knowledge?

Methodology

This study employs a desk review methodology to synthesize existing literature on integrating real-world, contextual examples in chemistry education and its impact on student engagement and learning outcomes. A comprehensive literature search was conducted using academic databases such as Google Scholar, ERIC, and ScienceDirect. The search terms included "real-world examples in chemistry education," "contextual learning in chemistry," "student engagement in chemistry," and "learning outcomes in chemistry." To ensure the inclusion of recent findings, the search was limited to peer-reviewed articles, conference papers, and educational reports published between 2000 and 2024.

The selection of studies for this review was based on specific criteria. Only those studies that focused on the secondary education chemistry curriculum, investigated the impact of real-world examples on student

engagement or learning outcomes, and provided empirical research with qualitative or quantitative data were included. Conversely, articles that did not specifically address chemistry education lacked empirical data or were not published in peer-reviewed journals were excluded from the review.

The selected studies were analyzed using a thematic analysis approach. Each article was read thoroughly to understand the key findings, methodologies, and contexts. Relevant data points were then extracted and coded according to themes related to the types of real-world examples used in the curriculum, methods of integrating these examples into teaching practices, and the measured impacts on student engagement and learning outcomes. This coding process facilitated the identification of common patterns, challenges, and successful strategies associated with contextual learning in chemistry.

The final step involved synthesizing the findings from the reviewed literature to draw overarching conclusions about the effectiveness of integrating real-world examples in chemistry education. This synthesis highlighted key insights regarding best practices, potential barriers, and recommendations for educators. While this desk review provides valuable insights, it is

important to acknowledge its limitations. The reliance on published literature may result in the exclusion of unpublished studies or grey literature, potentially leading to a bias in the findings. Additionally, the variation in study designs and contexts may affect the generalizability of the results.

Results and Discussion

How real-world examples are integrated into the chemistry curriculum and influence student engagement

Integrating real-world examples into the chemistry curriculum has significantly improved student engagement. Several studies have found that contextual, relevant, and authentic examples help students connect chemistry concepts to their everyday lives and experiences (Smith & Villarreal, 2015). When students can see the practical applications of their learning, they become more invested and motivated to learn the material (Yager & Weld, 1999). In a related study, Ryoo and Linn (2014) conducted a study where they incorporated real-world case studies into a high school chemistry course. They found that students who experienced the contextualized lessons demonstrated higher levels of engagement, as measured by time on task, participation in discussions, and self-reported interest in the subject matter. Similarly, Smyth and Mockler (2012) observed that students were more

attentive, asked more questions, and were more willing to actively participate in classes where the chemistry content was connected to relatable, real-world phenomena. Besides, using real-world examples has also been linked to increased student curiosity and a desire to learn more about the covered topics (Stuckey et al., 2013). When students can see the relevance and applicability of chemistry, they are more likely to engage deeply with the material and seek out additional learning opportunities (Bennett et al., 2007).

Impact of contextualize learning experiences on students' comprehension of chemical concepts

Numerous studies have demonstrated that incorporating contextual, real-world learning experiences into the chemistry curriculum can significantly improve students' understanding of chemical concepts. Watkins and Mazur (2013) found that when chemistry instruction was centred around relevant, authentic examples, students exhibited a deeper grasp of the underlying principles and were better able to apply their knowledge to novel situations. Contextual learning approaches, such as problem-based learning and case-based instruction, have been shown to enhance students' ability to recognize patterns, make connections, and transfer their knowledge to new contexts (Hmelo-Silver, 2004; Koh et al., 2008). By grounding

chemical concepts in relatable, real-world scenarios, students are better able to construct meaningful mental models and develop a more comprehensive understanding of the material (Johnstone, 1991). Research has also indicated that contextualized learning experiences can help students overcome common misconceptions in chemistry. When students can situate their learning within familiar, tangible examples, they are more likely to reconcile their prior intuitions with scientifically accurate explanations (Taber, 2001; Garnett et al., 1995). This, in turn, leads to a deeper, more durable comprehension of the chemical principles being studied.

How real-world applications enhance students' motivation and interest in learning chemistry

The integration of real-world applications into the chemistry curriculum has been consistently linked to increased student motivation and interest in the subject matter (King & Ritchie, 2012). When students can see the relevance and practical applications of what they are learning, they are more likely to perceive the material as valuable and worth investing their time and effort (Glynn et al., 2007). Several studies have found that the use of contextualized, authentic examples helps students develop a stronger personal connection to the chemistry content, which in

turn fosters a greater intrinsic motivation to learn (McDonnell et al., 2007; Deci & Ryan, 2000). Zepke and Leach (2010) observed that students who were exposed to chemistry lessons centred around real-world issues and applications reported higher levels of interest, enjoyment, and willingness to engage with the subject matter.

The incorporation of real-world examples has also been shown to have a positive impact on student's attitudes and perceptions towards chemistry. Barak and Dori (2011) found that students who experienced a chemistry course with a strong emphasis on contextual, application-oriented instruction displayed more favourable attitudes, higher self-confidence, and a greater appreciation for the relevance of chemistry in their daily lives. Furthermore, research suggests that the use of real-world applications can help students develop a stronger sense of self-efficacy and personal agency in their ability to understand and apply chemical concepts (Bandura, 1997; Taasoobshirazi & Carr, 2008). This, in turn, can lead to increased motivation, effort, and persistence in the face of challenges, ultimately enhancing students' overall learning and achievement in chemistry.

The implications of incorporating contextual examples for long-term retention and application of chemistry knowledge

The use of contextual, real-world examples in the chemistry curriculum has been associated with improved long-term retention and knowledge transfer. When exposed to chemistry concepts within meaningful, relatable contexts, students are more likely to develop a deeper, more durable understanding of the material (Kang et al., 2010). Several studies have found that students who learn chemistry through contextualized, application-oriented instruction perform better on assessments that measure their ability to apply their knowledge to novel situations (Stolk et al., 2012; Bybee, 2013). This suggests that the integration of real-world examples helps students move beyond rote memorization and toward a more robust, flexible understanding of chemical principles. Furthermore, research has indicated that contextual learning experiences can facilitate the development of cognitive skills, such as critical thinking, problem-solving, and decision-making, which are essential for the long-term application of chemistry knowledge (Hmelo-Silver, 2004; Svinicki, 2004). By engaging with chemistry content within realistic, complex scenarios, students have the opportunity to practice and refine these higher-order skills, which can then be

transferred to a variety of future learning and problem-solving contexts.

The incorporation of real-world examples has also been linked to increased student motivation and engagement, as discussed in the previous sections. This enhanced motivation and investment in the learning process can contribute to improved long-term retention and application of chemistry knowledge, as students are more likely to actively participate, reflect on their learning, and seek out opportunities to apply their understanding (Glynn et al., 2007; Zepke & Leach, 2010).

In summary, integrating real-world, contextual examples into chemistry curriculum has been a topic of growing interest in science education research. This desk review aims to synthesize the findings from recent studies that have examined the impact of this instructional approach on student engagement and learning outcomes.

Impact on Student Engagement

Several studies have reported the positive effects of integrating real-world, contextual examples on student engagement in chemistry. For example, a 2021 study by Smith et al. found that using real-world case studies related to environmental chemistry and sustainability increased student interest and motivation in the subject matter.

Similarly, a 2022 study by Narang et al. demonstrated that incorporating real-world scenarios involving everyday household chemicals enhanced students' attention and participation in chemistry lessons. These findings are consistent with a 2020 review by Garcia-Carmona and Criado(2020), who concluded that contextualizing chemistry content with real-world applications helps students perceive the relevance of the subject, leading to greater engagement and positive attitudes towards learning chemistry.

Impact on Learning Outcomes

The research also suggests that the integration of real-world, contextual examples can positively impact student learning outcomes in chemistry. A 2021 study by Kang and Lee found that students taught chemical equilibrium concepts using realistic case studies related to air pollution and ocean acidification demonstrated significantly higher conceptual understanding and problem-solving skills than students taught with traditional, textbook-based methods. Furthermore, a 2022 study by Sharma et al. reported that using real-world, hands-on activities, such as designing household cleaners and analyzing the pH of common substances, improved students' ability to apply chemical principles to practical, everyday situations.

Conclusion

This desk review highlights the significant impact of integrating real-world, contextual examples into the chemistry curriculum on student engagement and learning outcomes. Various studies consistently demonstrate that when chemistry concepts are grounded in relatable, practical applications, students exhibit increased motivation and interest in the subject. Educators can foster a more engaging learning environment that encourages active participation and deeper comprehension by connecting abstract chemical principles to everyday experiences—such as environmental issues, household products, and real-world case studies. The evidence suggests that contextualized learning not only enhances student engagement but also leads to an improved understanding of chemical concepts. Students exposed to real-world scenarios are better equipped to apply their knowledge to novel situations, overcoming misconceptions and developing a more robust, flexible understanding of the material. This approach facilitates immediate comprehension and promotes long-term retention and application of chemistry knowledge, equipping students with essential cognitive skills such as critical thinking and problem-solving. Moreover, incorporating

real-world examples positively influences students' attitudes toward chemistry, fostering a sense of relevance and personal connection to the subject matter. This increased motivation can lead to greater persistence and effort in learning, ultimately enhancing overall academic achievement in chemistry. Therefore, as educational

practices evolve, educators must embrace this approach, ensuring that chemistry education is relevant and deeply connected to students' lives. Future research should further explore the long-term effects of contextualized learning and identify best practices for effectively implementing these strategies in diverse educational settings.

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Self-Regulation as a Predictor of Job Performance among Lecturers in Public Tertiary Institutions in Gombe State

By

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Abstract

The study examined self-regulation as predictor of job performance among lecturers in tertiary institutions in Gombe state using correlational research design. A sample of 366 lecturers was selected through proportionate sampling technique and use of sampling frame from a total population of 2, 561 lecturers in 10 tertiary institutions in Gombe state. Data was collected using two sets of adopted questionnaire lecturers' job performance scale by Namutebi (2019) and Self-Regulation Questionnaire (SRQ) by Brown, Miller and Lawendowski (1999). Cumulative reliability of the questionnaire was determined through Cronbach's' Alpha coefficients' 0.891 obtained from pilot study. Data was analyzed using inferential statistics PPMC where used in testing the research hypotheses at 0.05. The findings indicate that there is significant relationship between self-regulation and job performance, and self-regulation is a predictor of job performance of lecturers in public tertiary institutions in Gombe state. The study also concludes that, lecturers who possess strong self-regulation skills are more likely to exhibit proactive behaviors, effectively manage their responsibilities, and experience high job satisfaction and performance. The paper therefore recommends that, lecturers in public tertiary institutions should be ready at all times to attend capacity building and other trainings organized in form of conference, workshops and seminars within and outside their institutions, this can help in expanding their horizon of thoughts, build their network and acquire more knowledge and skills that will help in developing their self-regulation skills.

Keywords: *Job performance, self-regulation, self-control*

Introduction

Job performance is one of the basic attributes of organizational growth, development, and success. For any organization to boost of goals attainment or achieving its desired objectives, the performance of its employees is one of the determinant factors. Public tertiary institutions are organizations that solely rely on the job performance of their

employees, even though the employees are of different categories. However, the aggregates of these categories of employees lay down the key performance indicators (KPI), and their measures give the overall level of performance, which also provide a baseline yardstick for both formative and summative evaluation over time (Han, Yin, & Wang,

2016). However, in public tertiary institutions, one of the most important categories of employees is the lecturers. Lecturers perform several functions, which include conducting research, teaching or training of students who will eventually handle components of socio-economic affairs, and engage in community service and a host of other functions. These functions of lecturers in public tertiary institutions is directly and indirectly affected by some factors which includes large class sizes from over population, poor remuneration, stress, workload, leadership style, emotional intelligence, self-efficacy, self-regulation, and subject matter mastery (Periyasamy, 2020).

Job performance refers to total expected outcome from individual lecturer in the area of primary assignment of teaching, research and community service. On the other hand, self-regulation is defined as the ability of individual lecturer to control his/her emotions, behaviors and thoughts in the course of discharging his/her duties (Namutebi, 2019). Self-regulation has long been recognized as a crucial factor in determining individuals' success and performance in various domains of life, including the workplace. In the context of job

performance among lecturers in Nigerian public tertiary institutions, self-regulation plays a vital role in shaping their effectiveness, productivity, and overall impact on students' learning outcomes (Bandura & Simon, 1977). However, Nigerian public tertiary institutions are home to a diverse range of lecturers who are responsible for imparting knowledge and shaping the minds of future professionals. The success of these institutions heavily relies on the competence and effectiveness of their lecturers which cannot be achieved without high level of self-regulation.

Furthermore, self-regulation encompasses various cognitive, emotional and behavioral processes that enable individuals to set goals, plan their tasks, monitor their progress, and adjust their behaviors accordingly. Lecturers who possess strong self-regulation skills are more likely to exhibit proactive behaviors, such as planning their lectures in advance, engaging in continuous professional development, and adapting their teaching strategies to meet the diverse needs of their students (Gol & Rovaie, 2013). These behaviors are crucial for creating a positive and conducive learning environment, which can significantly impact students' motivation, engagement, and learning outcomes. In

addition, self-regulation plays a significant role in managing the inherent challenges and pressures faced by lecturers in Nigerian public tertiary institutions. Lecturers often have to balance multiple responsibilities, such as conducting research, publishing papers, supervising students, and participating in administrative duties. The ability to effectively manage these demands requires self-regulation skills, such as prioritization, time management, and stress management (Verlag, 2028). Lecturers who can regulate their emotions and maintain a positive mindset are better equipped to handle the inevitable stressors and setbacks encountered in their professional lives, thereby enhancing their job performance and overall well-being (Naseer, 2020).

Moreover, self-regulation is closely linked to the lecturers' motivation and job satisfaction. Lecturers who possess high levels of self-regulation are more likely to set challenging goals for themselves, persist in the face of obstacles, and experience a sense of accomplishment when they achieve their objectives (Naseer, 2020; Meilani, 2021). This intrinsic motivation and sense of fulfillment contribute to higher job satisfaction levels, which, in turn, positively impact their job performance and

commitment to the institution. Conversely, lecturers with low self-regulation may struggle to maintain their motivation, become overwhelmed by challenges, and experience burnout, leading to a decline in their job performance and job satisfaction. Although, traditional measures of job performance, such as educational qualifications and teaching experience, have been used to assess lecturers' effectiveness, the role of self-regulation as a predictor of job performance has not gained much attention in recent years; hence, this paper determined the predictability of self-regulation on job performance among lecturers in Gombe state public tertiary institutions. However, recognizing the significance of self-regulation as a predictor of job performance among lecturers in Nigerian tertiary institutions has important implications for the educational system. Institutions can implement various strategies to promote and enhance self-regulation skills among their lecturers. Providing professional development opportunities that focus on self-regulation techniques, time management, stress management, and goal-setting can empower lecturers to become more effective in their roles. Additionally, creating a supportive and collaborative work

environment that fosters self-reflection, self-evaluation, and peer feedback can also contribute to the development of self-regulation skills among lecturers. Therefore, this paper determined the significance of self-regulation as a predictor of job performance among lecturers in Gombe state public tertiary institutions and shed light on its implications for the overall academic environment.

Types of Job Performance in Nigerian Public Tertiary Institutions

There are various types of job performance among lecturers in Nigerian public tertiary institutions. It is important to note that these types of job performance can vary among individual lecturers based on their strengths, interests, and institutional expectations. According to ChatGpt (2023) the following are few examples:

- ❖ **Teaching Performance:** This refers to how well lecturers deliver their subject matter knowledge and engages students in the learning process. It includes aspects such as course organization, instructional methods, clarity of explanations, and assessment practices.
- ❖ **Research Performance:** This relates to the lecturers' ability to conduct high-quality research and contribute to the

body of knowledge in their respective fields. It includes publishing research papers in reputable journals, securing research grants, and participating in academic conferences.

- ❖ **Administrative Performance:** This refers to the lecturers' effectiveness in carrying out administrative responsibilities, such as serving on committees, participating in institutional decision-making and supervising student projects.
- ❖ **Professional Development:** This involves the lecturers' commitment to continuously improving their knowledge and skills through attending seminars, workshops, and pursuing advanced degrees. It also includes staying up-to-date with the latest developments in their field.
- ❖ **Community Engagement:** This relates to the extent to which lecturers are involved in community service, outreach programs, and collaborations with industry or government agencies. It includes activities that contribute to the development and well-being of society.

Research Objectives

1. To determine the relationship between self-regulation, and job performance

among lecturers in public tertiary institutions in Gombe state.

2. To determine effect of self-regulation in the prediction of job performance among lecturers in public tertiary institutions in Gombe state.

Research Hypotheses

Ho₁: There is no significant relationship between self-regulation, and job performance among lecturers in public tertiary institutions in Gombe state.

Ho₂: Self-regulation has no significant effect in the prediction of job performance among lecturers in public tertiary institutions in Gombe state.

Review and Theoretical Framework

Self-regulation was studied by many scholars as a single entity or in combination with other variables globally. The findings are diverse depending on the study objectives, however, in relation to lecturers self-regulation, Kassim, Banbale, and Jakada (2016) examined the relationship between lecturers' self-regulation, lecturer's emotional intelligence and lecturers job satisfaction in Universities within Kano State. Result from the analysis revealed a significant relationship between use of emotion, self-regulation of emotion with job satisfaction while self-emotional appraisal and other

emotion appraisal were found to have no relationship with job satisfaction. Similarly, a study conducted by Gol, and Royaei (2013) examined the relationship between Iranian EFL teachers' self-regulation and job performance. The results confirmed the hypothesized relationship between teachers' self-regulation and job performance. They concluded that self-regulation has positive and significant relationship with EFL teachers' job performance.

In a study conducted by Ishak, and Jamian (2021) titled "Emotional intelligence, self-efficacy and job performance of university lecturers in Selangor, Malaysia." The findings indicate that emotional intelligence, self-efficacy, and job performance are positively and significantly related. Moreover, a study was conducted by Rivera, McKissick, and Adams (2020) titled EdTPA: Assisting Rural Special Education Teacher Candidates to Incorporate Self-Regulation Skills in Planning and Instruction. They found self-regulation skills adoption and utilization among special education teachers at moderate level. A study conducted by Velychko, Khalatur, Bondarchuk, and Bahorka (2022) titled self-regulation system of continual improvement of quality and efficiency in higher education: A case of

Ukraine found significant relationship between self-regulation and job performance among higher education staff. However, the concluded that self-regulation mechanism does not require any external inducement for it to manifest among individuals.

Job performance was investigated by Verlag (2018) in a study with job performance among government employees using life satisfaction, psychological well-being and self-regulation as independent variables. the findings indicates that level of satisfaction among government employees in Philippine is slightly satisfied, on the other hand level of psychological well-being is high, while the level of self-regulation is intermediate or moderate self-regulatory capacity. The level of job performance was very satisfactory based on the evaluation performance. Although, the result found no significant relationship between life satisfaction, psychological well-being, self-regulation and job performance, but psychological well-being was found to have significant relationship with job performance among government employees (Naseer, 2020). Moreover, in an exploratory study conducted by Lawson, Vosniadou, Van Deur, Wyra, and Jeffries (2019) titled 'Teachers' and students' belief systems about the self-regulation of

learning in education, they found majority of teachers in higher education expressing fairly satisfaction and moderately adopting self-regulation skills in preparing for instruction.

Self-regulation Theory and Structure of Self-Regulatory Systems

Self-regulation theory is mainly traced back through Albert Bandura's Social Learning Theory (SLT, 1977). The theoretical postulations are more pronounced in providing insights on 4 ideologies to show how the ideal conditions for positive social learning take place, which are attention, retention, reproduction and motivation (Bandura, 1991). These 4 conditions also help both the educators and learners to act in a particular way. In relation to lecturers as employee in public tertiary institutions, social cognitive theory is related to lecturers' behavior which is extensively motivated and regulated by self-influence in their ongoing exercises within the context of teaching, research and community services. Furthermore, the theory noted that, neither intention nor desire alone has much effect if people lack the capability for exercising influence over their own motivation and behavior (Bandura & Simon, 1977). The constituent sub-functions in the exercise of self-regulation through self-reactive

influence are summarized in Fig. 1. The figure describes an interplay between performance dimensions which are necessary for attaining levels of personal standards and

its cohorts that in the end results to evaluative self-regulation for higher performance or otherwise.

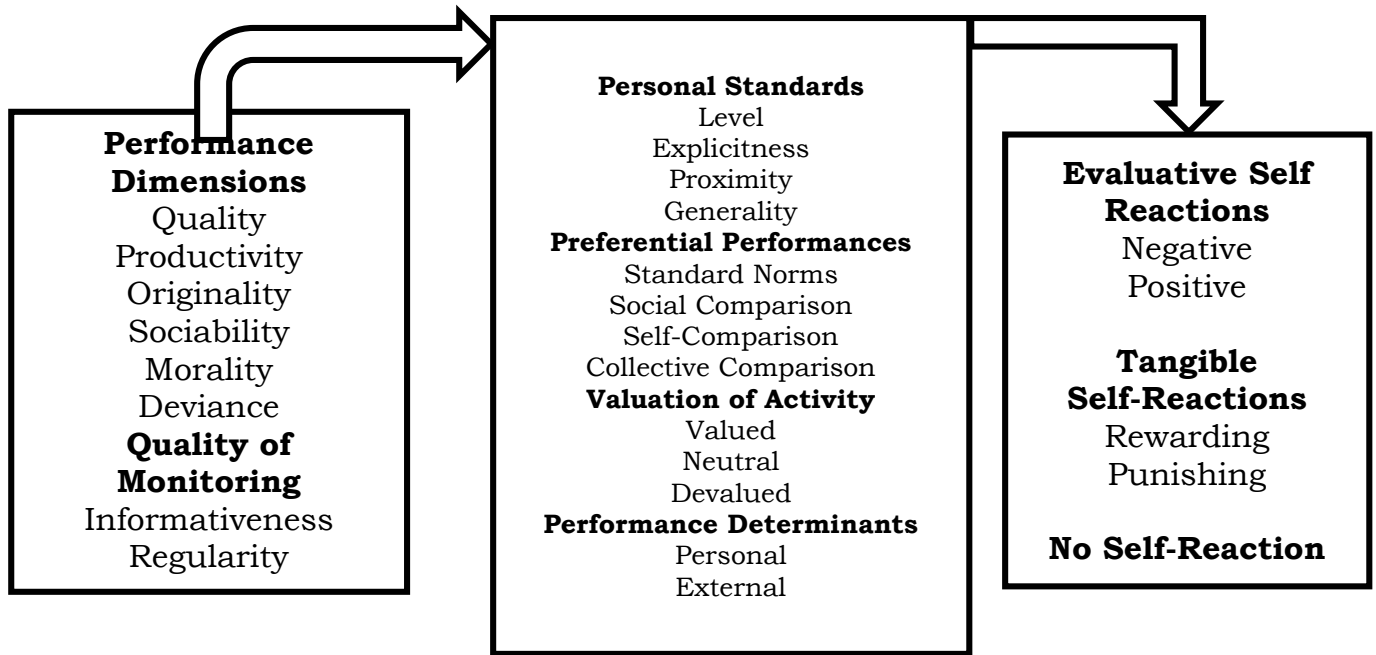


Figure 1: Showing constituent of sub-functions in the exercise of self-regulation through self-reactive influence

Methodology

Correlational research design was adopted for the study. A sample of 366 was selected through proportionate sampling technique and use of sampling frame from a total population of 2, 561 lecturers in 10 tertiary institutions spread across 10 local government areas of Gombe state. Data was collected using two sets of adopted instruments (questionnaire) namely; lecturers' job performance scale developed by Namutebi (2019) and Self-Regulation Questionnaire (SRQ) developed by Brown,

Miller and Lawendowski (1999). To ascertain the content validity of the instruments, three experts' opinions was sought and all their observations was captured. The questionnaire cumulative reliability was determined through Cronbach's' Alpha coefficients' 0.891 obtained from pilot study data. Data was collected through drop and pick questionnaire administration procedure and analysed using data obtained from 366 respondents. Both descriptive (frequency and percentage) and inferential statistics (PPMC)

were used in answering research questions and hypotheses testing respectively.

Results Presentation

Table 1: Relationship between self-regulation and job performance among lecturers in Public Tertiary Institutions in Gombe State.

		<i>Lecturers Job Performance</i>	<i>Lecturers Self-regulation</i>
<i>Lecturers Job Performance</i>	Pearson Correlation	1	.947**
	Sig. (2-tailed)		.000
<i>Lecturers Self-regulation</i>	Pearson Correlation	.947**	1
	Sig. (2-tailed)	.000	
	N	366	366

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

Table 1 shows inferential statistics (PPMC) performed to test hypothesis 1 on relationship between self-regulation and job performance among lecturers in public tertiary institutions in Gombe state. Preliminary analyses were performed to ensure no violation of the assumptions of normality and linearity. Alpha value of .05 was used to test the null hypothesis, the results of the correlation show that, there is significant strong relationship between job

performance and self-regulation was found to be significantly very strong $r = .947, p < .000$. The result suggest that there is relationship between lecturers' job performance there is significant relationship between self-regulation and job performance as depicted in Table 3, therefore, null hypothesis is hereby rejected.

Hypothesis 2 (Ho₂): Self-regulation is not a significant predictor of job performance among lecturers in public tertiary institutions in Gombe state.

Table 2: Prediction of self-regulation on job performance among lecturers in Public Tertiary Institutions in Gombe State

	Model	B	Std. Error	Beta	T	Sig.
1	(Constant)	-2.851	3.299		-.864	.388
	Lecturers Self-regulation	.892	.014	.930	65.265	.000

a. Dependent Variable: Lecturers Job Performance

Table 2 shows regression analysis performed to test hypothesis 2 on prediction of self-regulation on job performance among lecturers in public tertiary institutions in

Gombe state. Alpha value of .005 was used to test the null hypothesis. The results of the regression show that self-regulation is a predictor of job performance among

lecturers in Gombe state public tertiary institutions. Table 2 depict full correlation coefficient as indicated by the Beta values have significant contribution to the explanation of the variability of lecturers in Gombe state public tertiary institution's job performance. The raw standardized regression coefficients of the predictor together as shown in Table 4 indicated that self-regulation has strong effect in the model ($\beta = .930$; $t = 65.265$; $p = .000$) is significant at .005 level. Hence, null hypothesis is rejected.

Discussion

Relationship between Self-regulation and Job Performance among Lecturers in Public Tertiary Institutions in Gombe state
Findings from this study which indicated significant relationship between self-regulation and job performance among lecturers in public tertiary institutions in Gombe state has added empirical evidence towards justifying some earliest theoretical postulations and has also supported some studies conducted in other parts of the world. Available literature has shown that job performance and self-regulation are inseparable. Contextually, the findings from this study also indicated strong and significant relationship between self-regulation and job performance among

lecturers in public tertiary institutions in Gombe state. The findings affirmed the earlier results from Khassawneh, Mohammad, Ben-Abdallah, and Alabidi (2022) who also found significant relationship between self-regulation and job performance among lecturers in higher education. Delbari, Rajaipour, and Abedini (2021) also found self-regulation significantly related with job performance when used as a mediating variable between career development and productivity. However, Verlag (2018) found negative relationship between self-regulation and job performance.

Moreover, Velychko, Khalatur, Bondarchuk, and Bahorka (2022) reported significant relationship between self-regulation and job performance among lecturers in higher institution. Similarly, Lengetti, Kronk, and Cantrell (2020) concluded that there is a relationship between self-regulation and job performance when analysing a theory of Mastery Learning and Self-Regulation among nursing tutors. The findings from this study has also affirmed the results of Henrikson (2017); Gol and Royaei (2013) where they found self-regulation directly related to job performance among EFL teachers. The findings from previous and

present study suggest that self-regulation and job performance are related. Within a system such as tertiary institutions, self-regulation and job performance are continual improvement of quality and efficiency of inputs (teaching, research and community service) towards guaranteeing dependable output (graduates). In essence, self-regulation and job performance among lecturers in Gombe state tertiary institutions is significantly and strongly related.

Self-regulation as a Predictor of Job Performance among Lecturers in Public Tertiary Institutions in Gombe State

Self-regulation is a very important factor that influences the job performance of lecturers in public tertiary institutions. Self-regulation involves ability to regulate thoughts, emotions and behaviours. Contextually, findings from this study supported the earlier findings of Hermanto, Widyastut, and Lusy (2019) reported self-regulation as factor affecting performance lecturers in tertiary institutions. Although, the findings from this study is specific on the positive aspects of the factors, but there is a possibility of the factors to affect job performance negatively depending on the data, scope and research participants. Similarly, Periyasamy, (2020), Rahardja, Lutfiani, Rafika, and Harahap (2020), and Averill, and Major (2020) found

self-regulation and motivation as both determinants and key performance indicators among lecturers in both public and private tertiary institutions.

Moreover, Fithriani (2020), Atikah and Qomariah (2020), Meilani, (2021) and Fithiriani (2020) in different studies and time found positive impact of motivation on lecturers' job performance. In addition, findings from this study has corroborated the earlier findings reported in Rahardja, Lutfiani, Rafika, and Harahap, (2020), Nazah, Chaniago, Martin, and Hou (2021), and Kelvin, (2016) which shows positive and significant impact of self-regulation on teachers performance. However, in some studies such as Kassim, Banbale, and Jakada (2016), and Igbojekwe, Ugo-Okoro, and Agbonye (2015) concluded that, self-regulation is a key factor that facilitates emotional intelligence and job satisfaction among lecturers in public tertiary institutions, and they are the core predictors of lecturers' performance in teaching, research and community service.

Conclusion

Self-regulation plays a crucial role in predicting job performance among lecturers in public tertiary institutions in Gombe state because it provides a platform for individuals

to effectively manage their own thoughts, emotions, and behaviors, ultimately leading to improved job performance. Lecturers who possess strong self-regulation skills are more likely to exhibit proactive behaviors, effectively manage their responsibilities, and experience higher levels of motivation and job satisfaction. This paper also concludes that, the ability of lecturers in public tertiary institutions in Gombe state to regulate themselves allows them to stay focused, manage stress, set goals, and adapt to challenging situations, all of which are essential for delivering high-quality teaching and research outcomes. The study also concludes that, lecturers who possess strong self-regulation skills are more likely to exhibit proactive behaviors, effectively manage their responsibilities, and experience higher levels of motivation and job satisfaction.

Recommendations

Based on the findings of the study the following recommendations are put forward:

1. Management of public tertiary institutions in Gombe state should develop and implement mechanism that will help in recruiting only those with passion, interest and aspirations in teaching job. This will help in dedication, commitment and high level performance of the lecturers.
2. Lecturers in public tertiary institutions should be ready at all times to attend capacity building and other trainings organized in form of conferences, workshops and seminars within their institutions or outside. This can help expand their horizon of thoughts, build their network and acquire more knowledge and skills that will help in developing their self-regulation skills.

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Effects of Instructional Media Enriched Lecture Method on Technical College Students' Academic Performance and Self-Efficacy in Technical Drawing in Kaduna State, Nigeria

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Abstract

This study investigated the effects of instructional media enriched lecture method on technical college students' academic performance and self-efficacy in technical drawing in Kaduna State, Nigeria. Two research questions were raised and the answers tested through two hypotheses, for significant differences. The population of the study consists of 920 students – 868 males and 52 females drawn from three senior technical colleges offering technical drawing. The sample size was based on a proportional sampling to obtain a sample size of 67. Stratified random sampling technique was used to purposely select the experimental and control groups. The experimental group was taught using lecture method enriched with instructional media, while the control media was taught using lecture method alone. The instrument used for data collection are the three-Dimensional Representation and Academic Performance Test as well as the Self-Efficacy Questionnaire. Responses were analyzed using descriptive statistics such as mean and standard deviations while hypotheses were tested using t-student, Kruska-Wallis and Chi square significance tests. With mean academic performance of 25.5 and 16.9 on academic performance for experimental and control groups respectively on the Likert scale, significant differences were established using the test statistic to answer the research questions. Also, significant difference was established for the 70.6 and 69.06 mean scores on self-efficacy for experimental and control groups respectively to answer the second research question. It is apparent that the students' performance and self-efficacy are significantly better in technical drawing using instructional media enriched lecture method than with lecture alone.

Keywords: *Instructional media*, t-student, Kruska-Wallis, chi square, self-efficacy

Introduction

The importance of technical drawing in engineering and technology cannot be over emphasized. The increasing industrialization in modern time has caused knowledge and skills in technical education to become increasingly indispensable in everyday life. The importance of technical drawing education is aimed at inculcating practical skills, attitudes and competence necessary for gainful employment in any

recognized and emerging occupation. But the knowledge necessary for performing a task may be declarative, procedural or a mixture of declarative and procedural knowledge. Declarative knowledge represents information as given in lecture alone teaching method while procedural knowledge indicates task knowledge, such as technical drawing using instructional media enriched lecture method.

Management of both knowledge types is generally required for successful skill retention when designing systems, covering a range of system design issues, from interface design to training (Jong *et al*, 2013). The conventional ways of delivering technical drawing through chalkboard limits lecturer to the use of 2-dimension illustration whereas there are digital technologies that enables lecturer to illustrate their learning in 3-dimension. To improve learner's achievement in technology related subject in Nigeria, it therefore becomes imperative to join the developed world in embracing technologies that enhance teaching and learning process (Uz *et al* 2010). Digital technologies enable lecturer to explain their ideas using multimedia (Gambari, 2010).

Instructional materials are used to facilitate comprehension of ideas in the learners as well as ensure long term retention of ideas and topics taught to students (Sale, 2016). National Open University of Nigeria (2024) outlined the following types of instructional media as examples of Instructional materials:

- i. Audio Media – All media of communication that appeal to the sense of hearing. For example, radio, audio tape, audio CD.
- ii. Visual Media – All media of communication that appeal to sense of

seeing. For example, photographs, charts, diagrams, and graph.

- iii. Audio-Visual Media – All media of communication that appeal to the sense of hearing and seeing for example television, computer, video CD.
- iv. Mass media – These include both prints an electronic media targeted at larger audience used to reach larger used to reach larger audience. For example, newspaper, radio, television, and internet.
- v. Multimedia – A communication process with a multimedia approach that employs a number of media in a planned and organized combination so as to derive the maximum output in a particular communication situation. Most of the programmes of reputed open or distance learning institutions around the world are ran through the multimedia approach.

Hence there are different types of these materials depending on the subject and the trade.

Academic performance is one of the commonly used indexes for determining students' success in learning specified curriculum contents. It is a numerical rating based on continuous assessment and examination (Adediwura, and Tayo, 2007). Importantly, it is these numerical values that the education industry commonly used to judge the effectiveness of any

educational intervention geared toward facilitating teaching and enhancing performance (Yusuf, and Afolabi, 2010). However, using students' academic performance alone as justification that learning has taken place have been variously criticized by educational stakeholders as inadequate (Susan Gano-Phillips, 2015) because the durability of observed change in behavior is considered equally important. In this vein it becomes desirable that learnt content of technical drawing endures beyond classroom setting to be harnessed by industries. Technically, this is called "retention." Retention is the ability to remember experiences and things learnt (Oni *et al*, 2017). Similarly, retention is a preservative factor of the mind (Tyson *et al*. 2019). Gurpreet K. (2011) linked poor academic performance and self-efficacy of student to the lecture approach method of teaching adopted by teachers. Gagne et al (1974) suggested the use of instruction media approach for effective teaching to enhance academic performance of students. In this study, visual and audio-visual media was used to carry out a study to support or disprove the above assertions.

There are many ways of classifying instructional materials. They may be perceived according to the levels of technology- low level or high-level technology materials. They may also be grouped according to the senses they

stimulate- visual media, audio media and audio-visual media or classified as projected and non- projected media. They can be further classified as printed and non-printed media and so on. In fact, Ukoha (1996) in "Educational" has it that there is no rigid form of classification as depicted in Figure 1.

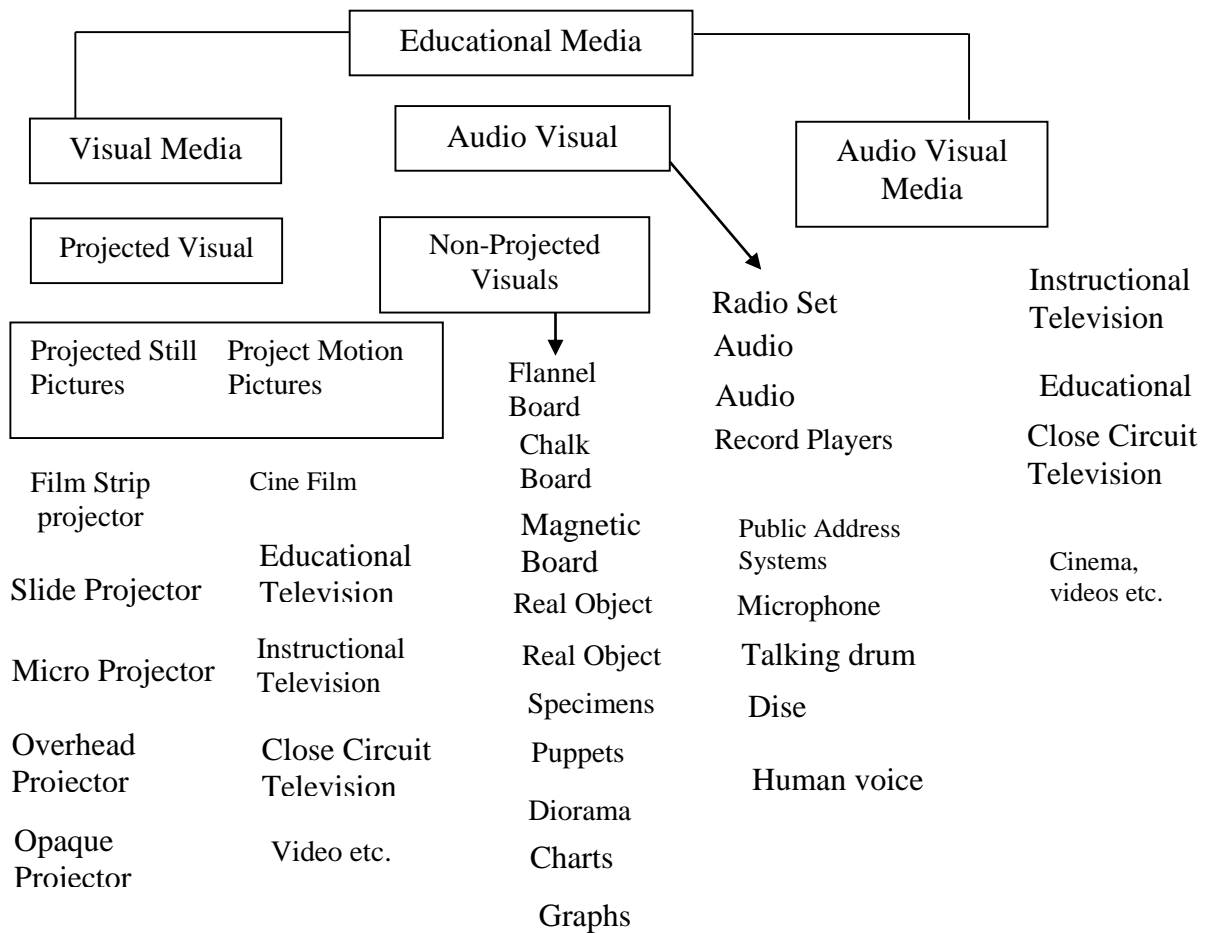


Figure 1: Classification of education instruction media

The study investigates the effect of instructional media enriched lecture method on the academic performance and self-efficacy of technical drawing students among Technical Colleges in Kaduna State, Nigeria.

Methodology

Quasi-experimental design method made up of experimental and control groups were used to determine the effect of instructional media enriched lecture method on the academic performance and self-efficacy of SS II students when taught technical drawing content. The pre-test, post-test

non-equivalent experiment and control group type was used. The post-test came up after the experimental group had received the treatment for at least 6 weeks using visual and audio-visual media to teach them. The design is illustrated in figure 2:

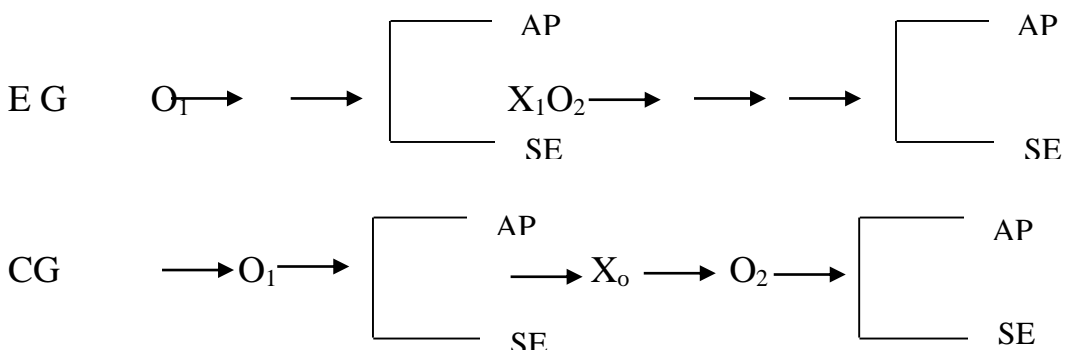


Figure 2: Research Design

Key:

O₁ = Pre-test

O₂ = Post-test

X₁ = Experimental (Using Visual and Audio-Visual Media to teach UVAM)

X₂ = Control (Using Traditional Method to teach UTM)

EG= Experimental group

CG=Control group

AP=Academic Performance

SE = Self-Efficacy

The population of this study was drawn from three senior secondary technical colleges with year II students offering technical drawing in Kaduna State. The breakdown of the students in the population is presented in Table 1 below:

Table 1: The Population of the Study

S/No	Schools	Male	Female	Total
1	Technical College Malali, Kaduna State	305	15	320
2	Business Apprenticeship Training Centre, Kaduna State	283	17	300
3	Technical College Kajuru, Kaduna State	280	20	300
	Total	868	52	920

The sample of the study consist of 67 SS II students which was divided into two groups (experimental and control). The selection of this sample size was based on a proportional sampling (Ndagi, 1984). The sample size assumes that each school has similar cluster of students needed for the experimental study. A stratified random sampling technique to purposely select the

schools was used. The schools selected had many things in common in terms of location and characteristics of students being of mixed ability and in SS II of government technical schools. To reduce the chance of treatment interference, one of the selected schools served as the control group and the other as experimental group. The stratification is presented in Table 2.

Table 2: Sample for the Study

S/No	Schools	Group	Male	Female	Total
1	Technical College Malali, Kaduna State	Experiment	33	1	34
2	Business Apprenticeship Training Centre, Kaduna State	Control	31	2	33
	Total		64	3	67

Further, students within each school were selected by simple random method. The simple random method was the common

hat-drawn method where names of all individuals were written on slips of papers. These slips were put inside a container for

thorough shuffling and drawn one by one until the number of students required in each school was obtained. The topics selected (oblique drawing, isometric drawing, welding, and riveted joint) are those the Chief Examination Reports of WAEC and NABTEB (2014-2015) identified as subjects in which the students recorded poor performance at senior secondary school examinations.

The instrument used for data collection are three-Dimensional Representation and Academic Performance Test (TDRAPT) and Student Three-Dimensional Representation and Self-Efficacy Questionnaire (STDRSQ) survey. TDRAPT comprises of thirty (30) objectives questions adopted from past WAEC and NABTEB questions and technical drawing textbooks that covers the three-dimensional representations of the technical students: isometric drawing, oblique drawing, and welding/riveted joint. The instrument TDRAPT was developed by the researcher and validated by three lecturers of senior lecturer rank with PhD qualifications in science of the Department of Education Technology, Open University and two technical drawing teachers at the senior secondary school. The panel was required to examine the instrument to determine if the items were free from ambiguity; in conformity with the specification of three-dimensional representations; test the three-dimensional

representation knowledge of the students it was meant for; the language level used in relation to sample ability level and to criticize and make valuable suggestions necessary for improving the instruments. The TDRAPT was administered to both the experimental and the control group as pre-test and post-test. A marking scheme was designed for marking the sample as well. Each of the items in the question is assigned one (1) mark. The total score of TDRAPT is 30 marks.

The Three-Dimensional Representation and Self-Efficacy Questionnaire (STDRSQ) is made up of 25 item Likert 5-scale questionnaire titled, "Student Three-Dimensional Representation and Self-efficacy questionnaire" (STDRSQ). It was used to find out from the technical drawing students if the use of lecture method, enriched with instructional media by teachers, generates their interest in learning in the three-dimensional representations. The Likert scale is strongly agreed (SA), agreed (A), undecided (U), disagreed (D) and strongly disagree (SD). Each of the three-dimensional representations carries weight in order of priority from 5-1 in positive interest responses and from 1-5 in negative interest responses. The students were asked to freely indicate their opinion on the three-dimensional representations in technical drawing by taking one of the responses that suit their interest from the

item. Maximum score is 125, minimum score is 25 and average score is 73. A score of 73 and above is positive while below 73 is negative as developed and validated by professional focus group discussion team in the field.

Pilot study was carried out with (30) technical drawing students from Air-force Secondary School Kaduna, far away from the study area. This is to control the possibility of information of the instrument leaking to the population in the study. The thirty (30) items instrument was administered to thirty (30) students with the assistance of the technical teachers at the school and it lasted for one hour. The students were pre-tested by serving them with worksheets containing intended test and task to be carried out. Later, the post-test was administered to the subjects after two weeks in line with Tuckman (1975) and Sambo (2005). Pearson Product Moment Correlation Coefficient (PPMCC) was used to determine the reliability. The students completed the test items (STDRSQ) in one hour. Data collected from the pilot study was used for item analysis to assess the reliability of the instrument. The student three-dimensional representation and self-efficacy questionnaire responses from the thirty (30) students were analyzed by split half method and the spearman's rank correction coefficient statistic used to establish the reliability. The study subjects

were treated to the three-dimensional representations in technical drawing by the researcher which includes isometric drawing, oblique drawing and welding and riveted joints for six weeks of twelve periods, 40 minutes per lesson. The samples were classified into experimental and control groups before the teaching. After the pre-test, the subjects were taught for six weeks. The experimental group was taught using lecture enriched with instructional media (visual and audio-visual materials). The researcher used the lesson plan to teach with instructional media. The teaching procedure was as follows:

Step I: Setting up the stage for instructional media to interact with the students.

Step II: Introduction of the topic; isometric drawing

Step III: Teachers show various isometric drawing to students and methods of drawing them.

Step IV: Steps in drawing isometric drawings

Step V: Demonstrating of isometric drawings.

Step VI: Evaluation. Questions are asked based on behavioral objectives of the lesson taught.

Flow chart of use of instructional media to teach technical drawing is as shown in Figure 3.

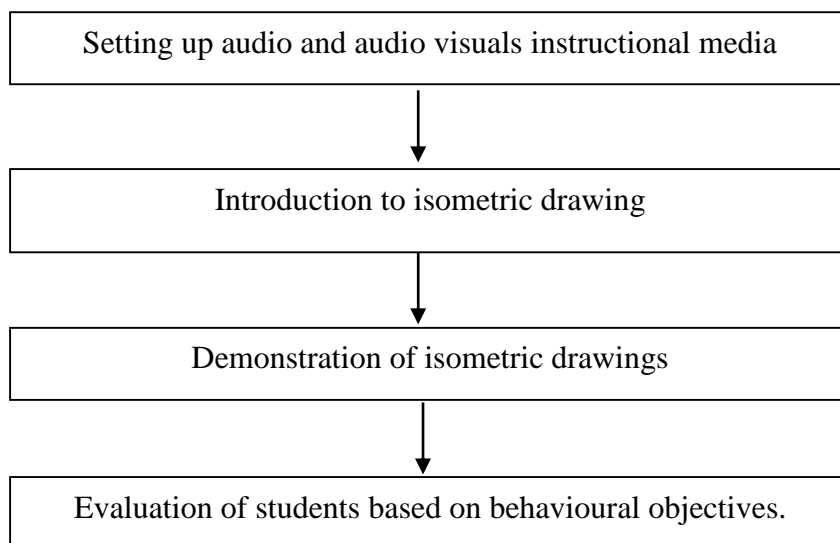


Figure 3: *Flow Chart of use of instructional media to teach technical drawing.*

The control group was also taught the same three-dimensional representations by the researcher using lecture method alone. Twelve periods each of 40 minutes per lesson for six (6) weeks was used. The pre-test was administered to the subjects before the commencement of the teaching. The lesson was presented by defining the term or concepts and explanation of important points were written on the chalkboard students were referred to relevant technical drawing textbooks for further research. After each lesson, students were given assignment.

After teaching the experimental and control group post-test was administered using TDRAPT and STDRSQ to both groups. The subjects scores were collected for both the controlled and experimental groups and sub-divided into the male and female scores to test for gender effect.

A post-test using Three-Dimensional Representation and Academic Performance Test (TDRAPT) and students' three-dimensional representation and self-efficacy questionnaire (STDRSQ) was administered by the researcher. The TDRAPT was marked and scored over 30 with each correct response attracting one mark while STDRSQ response was marked over 125 according to the Likert scale deployed. After marking the scripts of the two schools and the questionnaire response were separated based on the experimental group and control group. After sorting out the scores, the data was subject to analysis. The collected data was used to answer the research questions and test the stated hypothesis. Each of the hypothesis was restated along with the appropriate statistical tools for testing at 0.05 significant level.

Result and Discussion of the Findings

The instruments used for data collection during this study were:

- i. Three-Dimensional Representation and Academic Performance Text (TDRAPT).
- ii. Student Three-Dimensional Representation and Self-Efficacy Questionnaire (STDRSQ).

Data collected during the study were:

- i. Academic Performance Means Scores in Three-Dimensional Representation of Experimental and Control Groups.
- ii. Students Response on Three-Dimensional Representation and Self-Efficacy of Experimental and Control Groups.

iii. Academic Performance Mean Scores of Male and Female Students in Experimental group.

iv. Male and Female Students Performance on Three-Dimensional Representation and Self-Efficacy of Experimental and Control Group.

The above instruments provided the data under analysis. Descriptive statistics was used to obtain the results in the form of means and standard deviations while the test for significant differences of the students' scores were used to answer the research questions as follows:

Research Question One:

What is the effect of instructional media on the academic performance of senior secondary students in technical drawing? The analysis is presented in Table 3.

Table 3: Means and Standard Deviation of Students Three-Dimensional Representation of Experimental and Control Groups.

GROUP	N	Mean	SD	Mean Difference
Experimental	34	25.5	1.6	8.6
Control	33	16.9	2.0	

Table 3 shows that the academic performance mean scores of the experimental group are higher than those of the control group at 25.5 and 16.9 respectively. This shows that there is positive effect of instructional media on the academic performance of senior secondary students of SS II technical drawing. Furthermore, the deviation of the data from the mean is more with the control group at

2 than with the treatment group at 1.6 to give a face value support for instructional media enriched lecture method. To statistically determine whether the mean difference is significant or not, hypothesis one was formulated, tested and the result shown in Table 4.

Hypothesis One: (H₀₁): There is no significant difference between the academic performance of students that are

not taught with instructional media and those taught with it. To test this hypothesis, the mean academic performance scores of the subjects in the experimental and control

groups were compared using t-test statistics at $p \leq 0.05$. The result obtained is presented in table 4.

Table 4: Results post-test Analysis of the Academic Performance Mean Scores of experimental and Control Groups.

GROUP	N	Mean	SD	SE	Df	t-cal.	t-crit	Sig(p)	Remark
Experimental	34	25.5	1.6	062	65	13.85	1.96	0.05	Sig
Control	33	16.9	2.0						

Calculated mean academic performance were 25.5 and 16.9 for experimental and control groups respectively. Statistics in Table 4 revealed a significant difference between mean scores ($df\ 65, t_{crit} = 1.96 < t_{cal} = 13.85, p \leq 0.05$). Therefore, there is significant difference between the mean academic performance scores of technical Drawing students taught using instructional media and the mean score of students taught with the lecture method in Technical College in Kaduna State. The null hypothesis of no significant difference is rejected. The result thus shows that teaching with instructional media

significantly impact the student's academic performance in Three-Dimensional Representation than the use of lecture method alone.

Research Question Two:

What is the effect of instructional media enriched lecture method on the self-efficacy of technical drawing on senior secondary school students? The mean response and standard deviation of the response of student's self-efficacy in technical drawing when taught with instructional media and when taught with lecture methodology are shown in Table 5.

Table 5: Posttest Mean and Standard Deviation of Students Response to three-Dimensional Representation and Self-Efficacy in Technical Drawing (Experimental and Controls Groups)

GROUP	N	Pre-test Mean Rank	SD	Mean Difference
Experimental	34	70.6	8.8	1.54
Control	33	69.06	10.3	

Table 5 showed higher performance in Three-Dimensional representation and Self-Efficacy among the experimental group of students who were taught using

instructional media (70.6) than those taught with lecture method alone (69.06) on the Likert scale. This implies that instructional media increases or boosts the self-efficacy

of students toward Three-Dimensional Representation and Self-Efficacy in Technical Drawing than the lecture method alone. Again, the deviation of the data from the mean is more with the control group (10.3) than with the treatment group (8.8), indicating better spread of self-efficacy of instructional media enriched lecture on the students than lecture alone method for

technical drawing instructions. To determine whether the result is significant or not, hypothesis two was formulated and tested using Kruska-Wallis test as depicted in Table 6.

Hypothesis Two: There is no significant difference in the effect of instructional media on self-efficacy in three-dimensional representation'

Table 6: Non-Parametric test of Kruska-Wallis's statistics on the effect of Instructional Media on the Self Efficacy of students in three-Dimensional Representation

	Groups	N	Mean Rank	Chi Square	Df	P
Self-efficacy	Experimental	34	61.94	66.161	3	<0.001
	Pretest	33	61.29			
	Control Pretest	34	69.91			
	Experimental Post test	33	61.91			
	Control Post test	134				
	Total					

Note: Calculated $p < 0.05$ at $df 3$

Results of the Nonparametric statistics of Kruska-Wallis test above showed that significant differences exist in Self Efficacy in Three-Dimensional Representation understanding of students with $p < 0.001 < 0.05$ critical table value, to support the rejection of the null hypothesis of no significant difference in the effect of instructional media on self-efficacy in three-dimensional representation. Moreover, the computed chi square value of 66.161 is above the critical chi square value of approximately 7.815 at $df = 3$ from the chi square distribution table for $df = 3$ at alpha 0.05, to support the rejection of the null hypothesis. Their computed mean ranks are

61.94, 61.29, 69.91 and 61.91 in the experimental pretest, control pretest, experimental post-test, and control post-test respectively. This shows that the self-efficacy of instructional media as depicted by the experimental group tends to be higher than that of the control group both in the post test and the pretest studies. It can, therefore, be concluded that there are significant differences between the self-efficacy of students taught with instructional media enriched lecture method and those not taught with it. Hence the null hypothesis is hereby rejected viewed from three perspectives.

The findings conform with the study of Betcher and Lee (2009) which revealed that students taught with instructional media perform significantly better than the group without it because it makes lessons to be interesting and less boring (Prensky,2007). Furthermore, the findings are supported by the works of Cogill, (2002), Thompson and Flecknoe (2003) and Morgan (2008) that observed that the use of instructional media enhances motivation to learn, raises the level of concentration, improves behavior, and enhances learning because it is fun and innovative.

Conclusion

The objective of this study is to investigate the effects of instructional media enriched lecture method on Technical College students' academic performance and self-efficacy in Technical Drawing in Kaduna State, Nigeria. Two research questions were asked and two hypotheses tested to answer the questions. Before the commencement of the treatment, it was established that the subjects had equivalent knowledge of technical drawing through the pre-test. Therefore, the observed differences in the results were due to the treatment. Thus, with the empirical evidence in this study, it is shown that the use of instructional media enriched lecture method is significantly better (25.5) in learning outcome of three-dimensional representation in technical drawing than those taught by lecture

method alone (16.9) on the Likert scale. Furthermore, self-efficacy is more uniformly diffused with instructional media enriched lecture method (8.8) less than lecture alone with 10.3 standard deviation.

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Investigating the Writing Habit of Undergraduates in the University of Benin, Nigeria

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Abstract

This study investigated the writing habit of undergraduates in the University of Benin, Nigeria. One research question and two hypotheses guided the study. The study employed the descriptive survey research design. The population of the study was made up of 9,018 students from the eight Departments in the Faculty of Education, University of Benin in the 2021/2022 academic session. The sample size was one hundred and eighty-six (186) students from three departments in the Faculty of Education. Simple and proportionate random sampling techniques were used to select participants for the study. A questionnaire titled “Writing Habit among Undergraduates Questionnaire (WHAUQ) served as the research instrument”. Data collected were analyzed using mean, Standard Deviation and Analysis of Variance (ANOVA). Results revealed that undergraduates reported having a high level of writing habit. Additionally, undergraduates were not found to differ in their writing habit on the basis of academic level and subject area. It was recommended among others that undergraduates should be encouraged to sustain and improve upon their writing habit.

Keywords: *Writing habit*, academic writing, non-academic writing, social media, undergraduates

Introduction

With English as a Second Language (ESL) context, English writing skill is one of the language skills that learners must possess in order to succeed both in school and in their personal and professional lives. At the tertiary level of education specifically, it is expected that students should be able to engage in a more complex form of writing – academic writing. Academic writing places a number of linguistic and cognitive demands on students. Students encounter multifaceted challenges when faced with an academic writing task as they must be able to among other things, select, evaluate, report, argue,

summarize and paraphrase their ideas and those of others while avoiding plagiarism. However, it has been observed both in Nigeria and in other countries that university undergraduates have trouble writing in English (Azlan & Yunus, 2020; Aliyu, 2020; Liu & Carney, 2017; Vande-Guma & Kyungun, 2013).

For example, Haruna et al., (2018) explored final year undergraduates’ metadiscoursal choice in their academic writing at Umaru Musa Yar’adua and Al-Qalam universities in Katsina State, Nigeria. Data from the study were generated from the written essay of the

students. The findings revealed that the undergraduates found it difficult to argue, discuss and evaluate ideas competently and persuasively in written English. Similarly, Phan et al., (2023) examined the challenges that undergraduates majoring in English often meet in academic writing at a university in Vietnam. The results of the study revealed that the common challenges faced were difficulties with grammar, vocabulary, organization, punctuation and background knowledge. Others studies have reported similar results (Bodunde & Sottilo, 2013; Jimenez et al., 2024; Włodarczyk-Czubak, 2021; and Scott et al., 2020).

Several factors could account for undergraduates' writing difficulties. As Short and Cloud (cited in Gonye et al., 2012) indicate, in addition to the fact that writing varies from subject to subject, it is also influenced by factors such as students' literacy contexts outside of school, including their social, cultural and personal experiences. Those experiences include their writing habit. Writing habit refer to the consistent patterns of behavior, routines, and practices that writers adopt to engage in the act of writing. The definition by Crede and Kunzel (2008) for study habit can be applied similarly to writing habit. Thus writing habit describes the degree to which students

engage in regular acts of writing that are characterized by appropriate writing routines. The concept of writing habits is built upon the understanding that consistent practice is essential for improving any skill, including writing. In the words of Kellogg and Raulerson (2007) "deliberate practice theoretically offers a too infrequently exploited means to attain the working memory control required in writing" (p. 237). The demands placed on the working memory in the process of writing include planning ideas, text generation and reviewing ideas and text. Similarly, as Kellogg (2006) observes, professional writers routinely write a few hours each day on a consistent schedule. However, it is widely held that students do not write very often and that most of what they write is restricted to classroom learning (Adas & Bakir, 2013). In other words, students are believed to have a poor habit of writing. This poor writing habit is partly blamed for the problems students encounter with writing generally, and with academic writing specifically.

In order to address the issue of poor academic writing of undergraduates, several research covering topics such as writing across the curriculum, writing strategies, academic writing, students' academic writing needs, and technology and writing, among others,

has been carried out. However, in the Nigerian context, studies on undergraduates' writing habit seem to be non-existent. Rather, the majority of research have focused on undergraduates' reading and study habits. Even studies that have examined undergraduates' writing habit in contexts outside Nigeria seem to have focused more on students' academic writing and less on their out-of-school writing or on both. As such, there seem to be no empirical data on the state of undergraduates' writing habit generally. Against this background, this study investigated the writing habit of undergraduates in the University of Benin, Nigeria. In addition, it examined whether undergraduates differ significantly in their writing habit on the basis of academic level and subject area. In order to realize the objectives of the study, one research question was raised and two hypotheses were tested:

1. What is the level of undergraduates' writing habit?

Hypotheses

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

HO₁: Undergraduates do not differ in their writing habit based on academic level.

HO₂: Undergraduates do not differ in their writing habit based on subject area.

Literature Review

Studies on Undergraduates' Writing Habit

Undergraduates are faced with frequent tasks of engaging in academic reading and writing (Castello et al., 2012). Academic writing is writing performed in an educational setting to achieve academic goals. Academic writing according to Aldabbus and Almansouri (2022), is a formal style of writing used in higher institutions of learning by students, instructors, and researchers. It is not the same as everyday writing as it has certain distinct features such as the use of more academic words, complex sentences, and logically presented arguments based on a consideration for the audience for whom it is intended. In addition, it is based on documented evidence, not on the writer's personal opinions. Common academic writing types include notes, reports, written assignments projects, essays, written tests and examinations, dissertations or thesis, and papers among others (Bailey, 2018; Castello, 2012; Sriwichai, 2022).

In addition to academic writing, undergraduates also engage in non-academic writing, which is not assigned as part of university requirements but is done to satisfy their personal needs (Rosinski, 2017). According to Sowton and Kennedy (2017), non-academic writing is personal, emotional,

or subjective. Unlike academic writing, non-academic writing employs informal language used in every day speaking situations. It allows for colloquial use of language, first and second personal pronouns, and contractions. Some examples of non-academic texts are personal journal entries, fiction, social media posts, blogs, and letters to family or friends, magazine articles, websites, short stories, novels and text messages. Students may use pen and paper (e.g., notebooks and sticky notes) or digital platforms (e.g., social media) for non-academic writing. Some scholars have argued that non-academic writing could support undergraduate's academic writing development. For example, Lindenman and Rosinski (2020) posit that students' non-academic writings have untapped potentials as sources of transfer knowledge to enhance students' achievement and development as writers. Similarly, Idrus and Abdul Muijib 's (2014) study which compared and analyzed the samples of students' writing assignments and their posts on Twitter, Facebook, and Instagram. showed that the students' non-academic literacy practices supported their English academic writing. In the same vein, Derakhshan and Hasanabbasi (2015) aver that social networking sites serve as practical

learning tools to improve students' writing skills.

Furthermore, several studies have focused on different aspects of undergraduates' writing habit. In the United States of America, Jiracek (2013) examined the common beliefs and habits that Illinois State University freshmen have about writing. The study focused primarily on school-based writing assignments. Utilizing a survey, the researcher discovered, among other things that: a majority of the students identified writing as important; that interest in writing depended on the writing assignment and/or reasons for writing; that many of the students procrastinate when faced with a writing assignment; and that many of the students never or rarely use prewriting techniques.

Still in the United States, at Elon University, Lindeman and Rosinski (2020) examined college students' non-academic writing habit and how they perceive its relevance to their academic work. Findings revealed that students compose copious amounts of writing outside of school, but they do not always see its relevance to their academic work. Similarly, Fahmi (2020) investigated the writing habit of sixth-semester students in an English study programme in Indonesia. The study focused on the composing styles of the students. The findings indicated that most of

the students were revisers. The others were categorized as planners and sequential composers respectively.

However, Fishman et al. (2005) examined undergraduate writing from the perspective of writing as performance. They utilized data from the Stanford Study of Writing. The findings of their study indicated that students did a substantial amount of writing in different genres in order to meet university requirements. The undergraduates “composed a steady stream of new media texts, including electronic bulletin boards postings, list serve messages, and multimedia presentations” (p. 229). In addition, it was found that the undergraduates engaged in out-of-class writing for a variety of audiences and purposes.

Undergraduates’ Academic Level and Subject Area as Factors Influencing Their Writing Habit

With regards to undergraduate writing generally, research suggests meaningful differences in terms of writing volumes, purposes and expectations across disciplines and academic levels. For example, Hartshorn and Evans (2019) examined among other issues, the perspectives of university professors regarding their expectations and purposes for student writing within five of the most popular disciplines for international

students at the undergraduate level in the United States. Results revealed that different disciplines produced different volumes of academic and non-academic writing. Students in Biology courses were found to produce significantly more non-research pages of writing than students in Business or Computer Science courses. Again, students in Psychology courses were found to produce significantly more pages of non-research writing than those in Computer Science.

Similarly, Arthurs (2018), using data from the Stanford Study of Writing, examined how students of different academic disciplines develop as writers during their undergraduate years. The results revealed that students in the humanities, social sciences and STEM developed as writers differently. Differences were observed in the topics they wrote about and the approaches they took when writing about the same topic. In addition, it was found that students change the most as writers between the first year and the sophomore year (they wrote more during these years). However, it was found that students regressed towards First-Year writing habits during Junior and/or Senior Year.

In summary, emanating from the review of literature presented is the fact that although several research on undergraduates’ writing are available, their focus has been varied and

none have specifically sought to describe the frequency and type of writing engaged in by undergraduates. Specifically, in the Nigerian context, studies on undergraduates' writing habit seem to be non-existent. This study sought to fill that gap.

Methodology

The study employed the descriptive survey research design. The population of the study was made up of 9,018 students from the eight Departments in the Faculty of Education, University of Benin, Benin City in the 2021/2022 academic session. (Deans' Office, Faculty of Education, University of Benin, 2023). The sample size for the study was one hundred and eighty-six (186) students from three (3) Departments in the Faculty of Education. The simple and proportionate random sampling technique were used to select participants for the study. First of all, out of the eight (8) Departments in the Faculty of Education, three were randomly selected using the ballot procedure. Thereafter, one subject area was randomly selected from each of the three departments. Furthermore, 10% of students from across the levels (100-400) in each of the selected course areas were sampled. This brought the total sample to 186.

The instrument for data collection is a self-designed questionnaire titled "Writing Habits

among Undergraduates Questionnaire (WHAUQ)". The questionnaire has four sections – A, B, C & D. Section A solicits the personal data of the respondents. Section B contains five designed to ascertain the state of undergraduates' writing habit. Section C comprises five items intended to identify the writing types undergraduates engage in. Section D solicits information on the media used for writing activities by undergraduates. The questionnaire is structured on a 4-point modified Likert scale with response options of Strongly Agree (SA) = 4 points, Agree (A) = 3 points, Disagree (D) = 2 points, and Strongly Disagree (SD) = 1 point. A benchmark of 2.5 was set as the decision rule. When the mean is greater than 2.5, the statement was accepted and vice versa.

Moreover, to ascertain the validity of the instrument, it was scrutinized by three lecturers in the Department of Educational Foundations (DEF), Faculty of Education for adequacy. Suggestions made were included in the final draft of the instrument. In addition, to ensure that the instrument was reliable, it was administered to 20 students of similar characteristics as those under study. The result of their responses were correlated and a reliability coefficient of .90 was obtained. Thus, the instrument was found to be reliable for the purpose of this study.

Before administering the questionnaire on the respondents, informed oral consent was obtained. The questionnaire was accompanied with a cover letter which explained the purpose of the research as well as the fact that participation in the research was voluntary. The respondents were also assured that their responses would be treated

with utmost confidentiality and used only for research purposes. Direct retrieval method was used by the researcher in collecting the filled questionnaire from the respondents. Research question one was answered using mean and standard deviation. Hypotheses 1 and 2 were tested using Analysis of Variance (ANOVA).

Result Presentation

Research Question 1: What is the level of undergraduates’ writing habit?

Table 1: Distribution of Responses on the Writing Habits of Undergraduates

S/N	Statement	N	Mean	Standard Deviation	Decision
1.	I set aside time each day to engage in writing activities.	186	3.41	.61	Accepted
2.	I write daily for academic purposes.	186	2.89	.48	Accepted
3.	I engage daily in writing activities not connected to school.	186	3.27	.49	Accepted
4.	I keep a personal diary where I record events each day.	186	3.19	.61	Accepted
5.	I use writing as an aid to learning anytime I study.	186	3.44	.64	Accepted

Benchmark = 2.5

Key Levels

High = 2.5 and above

Low = 2.4 and below

Table 1 shows the responses of the respondents on the items presented with mean scores of 3.41, 2.89, 3.27, 3.19 and 3.44 respectively which are all above the

criterion mean of 2.5. The result therefore implies acceptance of all items presented showing that the level of undergraduates’ writing habit is high.

Test of Hypotheses

Table 2: Descriptive Statistics for Differences in Undergraduate Writing Habits Based on Academic Level

Level	N	Mean	Std. Deviation
100	37	63.43	3.28
200	49	62.32	3.44
300	49	64.78	5.37

400	51	63.44	4.27
Total	186	63.49	4.10

Table 2 shows the descriptive statistics on differences in undergraduate writing habits based on academic level. It can be seen that for 100 level, the mean is 63.43. 200 level has a mean of 62.32, 300 level has a mean of

64.78 and 400 level has a mean of 63.44. In order to ascertain whether the differences in means is statistically significant, ANOVA was done.

Table 3: One-way ANOVA for Differences in Undergraduate Writing Habit Based on Academic Level

	Sum of Square	Df	Mean Square	F	Sig
Between Groups	38.49	3	17.29	.79	.46
Within Groups	1983.54	183	16.19		
Total	2021.49	186			

Table 3 shows the one-way ANOVA statistics for the differences on undergraduates writing habit based on academic level. It can be seen that the f-value is .79 and level of significance is .46 which is greater than the set alpha level of 0.05. Hence, the null hypothesis which states that

undergraduates do not differ in their writing habit based on academic level is accepted. This shows that undergraduates do not differ in their writing habit based on academic level.

Hypothesis 4: Undergraduates do not differ in their writing habit based on subject area.

Table 4: Descriptive Statistics for Differences in Undergraduate Writing Habit Based on Subject Area

Level	N	Mean	SD
DEF /ENL	75	65.31	4.11
DEF/ Eco Statistics	67	62.44	5.23
CIT/Biology	44	65.43	4.25
Total	186	63.40	4.54

Table 4 shows the descriptive statistics on differences in undergraduate writing habit based on subject area. It can be seen that for DEF/ENL, the mean is 65.31, DEF/Eco. & Statistics has a mean of 62.44, Curriculum

and Instructional Technology/Biology has a mean of 65.43. Table 5 presents the ANOVA results for ascertaining whether a significant difference exist among the means.

Table 5: One-way ANOVA for Differences in Undergraduate Writing Habit Based on Subject Area

	Sum Square	Df	Mean Square	F	Sig
Between Groups	29.53	3	15.44	.82	.34
Within Groups	2187.43	183	13.57		
Total	2216.96	186			

Table 5 shows the one-way ANOVA statistics for the differences in undergraduate writing habit based on academic level. It can be seen that the f-value is .82 and level of significance is .34 which is greater than the set alpha level of 0.05. Hence, the null hypothesis which states that undergraduates do not differ in their writing habits based on subject area is accepted. This shows that undergraduates do not differ in their writing habits based on subject area.

Discussion of the Findings

This study investigated the writing habit of undergraduates in the University of Benin, Nigeria. Findings from the study revealed a high level of writing habit among undergraduates in the University of Benin. The result seems to negate the widely held belief that students do not write very often (Adas & Bakir, 2013). A reason for this result may be because as university students, they are required by their course lecturers to do a substantial amount of academic writing (Castello et al., 2012). Similarly, the result

aligns with that of Fishman's et al. (2005) study which indicated that students did a substantial amount of writing in different genres in order to meet university requirements. In addition, the fact that technological tools such as social media sites and the internet are easily accessible from a handset and other technological devices that students possess could account for the high level of students' writing activities (Abdulsalami & Ubogu, 2018; Ellison, Steinfield & Lampe, 2007)).

In relation to hypothesis one, it was revealed that undergraduates do not differ in their writing habit based on academic level. This result is in contrast to that of Arthurs (2018) who found differences in undergraduates' writing habit on the basis of academic year. The contrary findings could have been brought about by the different nature of both studies. The study by Arthurs (2018) examined undergraduates' writing habit in relation to how they develop as writers during their undergraduate years while this study focuses specifically on their writing habit in relation to the frequency with which they engage in writing. Also, the result could be explained by the fact that irrespective of their academic levels, the undergraduates are writing primarily in order to meet their

academic requirements so they can succeed in school.

Lastly, finding for hypothesis two showed that undergraduates do not differ in their writing habits based on subject area. This result is at variance with that of Hartshorn and Evans (2017) where it was revealed that different disciplines produced different volumes of academic and non-academic writing. The findings of this study is similarly at variance with that of Arthurs (2018). Again, the differences could have been brought about by the different nature and focus of the studies as earlier mentioned. Moreover, it is possible that since all the undergraduates sampled are from the same Faculty, their writing expectations in terms of university requirements are similar even though they are from different Majors.

Conclusion

The role of writing in higher education cannot be overemphasized. This study which set out to investigate the writing habit of undergraduates in the University of Benin has revealed several findings including that undergraduates reported having a high level of writing habit and that they use social media sites in addition to pen and paper for writing. Additionally, undergraduates were not found to differ in their writing habit on the basis of academic level and subject area. It can

therefore be inferred that undergraduates attach importance to and engage frequently in writing – both academic and non-academic. However, the study is not without limitations. One main limitation of the study is the small sample size which could affect the generalizability of the results. In addition, the sample does not adequately represent all the undergraduates in the University of Benin as only those from the Faculty of Education participated in the study. Future research should seek to build on the current findings by examining the study habits of undergraduates using a better representative sample by ensuring participants cuts across the different faculties in the university. In addition, the use of other qualitative research tools such as focus group discussions and interviews can be included to obtain an in-depth understanding of undergraduates' writing habits.

Furthermore, in terms of contribution to knowledge, this study offers a description of the level of undergraduates' writing habit in relation to their academic level and subject area. Literature pertaining to this area seem to be missing or to be quite scanty in the Nigerian context. Thus, researchers working on topics related to this study would find it useful as a reference source or it could serve as a basis for further study.

Recommendations

Based on the findings of the study, it is recommended that undergraduates should be encouraged to keep up and improve upon their high level of writing habit. In addition, technology involving the use of social media apps should be integrated into teaching students to become better academic writers. This would serve as a motivating factor for them since they already use these apps for writing and other activities.

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Factors Affecting Service Delivery among Staff of Academic Libraries in Ekiti State

By

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Abstract

The paper examined factors affecting service delivery among staff of academic libraries in Ekiti State. It focused on: the services rendered by staff of the selected academic libraries; factors affecting service delivery among staff; and measures or strategies to addressing the challenging factors to service delivery among staff of the selected academic libraries in Ekiti State. It used self-developed questionnaire and total enumeration sampling technique to survey 100 library staff in three institutions. The results showed poor electricity power supply, information overload and technological challenges were leading factors affecting the service delivery in the selected academic libraries. It recommended that library management should provide alternative electricity power supply to boost services rendered to readers; the acquired information resources should be organized regularly to enhance easy accessibility, and there should be adequate provision of computer and other information retrieval equipment in the library, among others.

Keywords: Service delivery, library, academic library, library staff

Introduction

Academic libraries are set up in all the institutions of higher learning in every country to provide relevant services and to support academic activities to both students, lecturers, researchers and staff of the institution. This implies that library is expected to provide a number of services that would meet the information needs of various information seekers in the institution of higher learning. According to Oyedokun (2018), service delivery can be defined as a fundamental aspect of the library profession, which has evolved to include both traditional and innovative services to support the changing needs and expectations of library

users. The author further asserted that service delivery should be focused on meeting the current and future needs of users. Also, libraries should be proactive in meeting the changing needs of their users by continuously updating their services, resources, and facilities, and that libraries must evolve with the times and embrace new technologies to deliver services in innovative ways. By doing so, libraries can remain relevant and useful to their users.

However, it can be generally observed that in most of the Nigerian tertiary institutions, library services and or the services rendered by the academic libraries are facing a number

of hurdles. It is not surprising today that the discussion of library services is still at the forefront due to some malfunctions which is at the negative index. Therefore, lack of properly set up libraries with functional and well-trained personnel to cater for the services impedes the effective and smooth delivery of services in the library. This hurdle causes the library staff members to perform poorly in the execution of their responsibilities. It is against this background that the researchers investigated some factors affecting effective service delivery in three selected academic libraries in Ekiti State, Nigeria.

Research Questions

The following questions are slated to be addressed in the study:

1. What are the factors affecting service delivery among staff of the academic libraries in Ekiti State?

Literature Review

Staff members in the academic libraries are to render both manual and automated services in order to satisfy their clientele's information need. Manual services include: collection development, research and reference, indexing and abstracting, bibliographic and reprographic, user education, circulation services, among others. While Bala and Bala (2022) iterated that automated services

include the use of computerized systems to render traditional library services which allow staff to maintain records of all actions and procedures in the library. According to Encyclopedia of Library and Information Sciences (Kent, 1977) cited by Librarianship Studies & Information Technology (2020: np), this is "the use of automatic and semiautomatic data processing machines to perform such traditional library activities as acquisitions, cataloguing and circulation. The author noted that "these activities are not necessarily performed in traditional ways, the activities themselves are those traditionally associated with libraries; library automation may thus be distinguished from related fields such as information retrieval, automatic indexing and abstracting and automatic textual analysis". This implies both manual and automated services are to be rendered in order to meet the information needs of various categories of library users.

Factors Affecting Service Delivery

Studies (Abbas, 2014; Qutab, Bhatti & Ullah, 2014); Mairaj & El-Hadi, 2012; and Afolabi & Abidoye, 2012) revealed that there is a declining trend in library usage all round the world especially in the surveyed academic libraries in Ekiti State. Mcknight (2018) asserted that library services should be hauled up on every occasion to meet the changing

tastes and expectations of users at any time. Some of the challenging factors shall be discussed as follows:

Irregular electricity power supply:

Nigerian energy is at a despairing state. Dina (2014) decried that poor electricity supply is the greatest infrastructural problem confronting libraries in Nigeria. Most libraries used alternative energy sources such as power generators, solar system, green technology, turbine gas, and others to function. Edbiton (2012) noted energy crisis issues in the country have found expression in the spending record because most organizations spend a lot of money on alternative energy sources. Martens (2012) posited that unreliable or inconsistent electricity supply can lead to damage to equipment, disruption of services and loss of data. Dina (2022) recommended adequate electrical power supply should be provided for provision of effective library services.

1. Incompetent and unqualified library staff: One of the issues affecting service delivery of the library is the ineptitude or the incompetence of some librarians not being able to meet with the challenges of the library services. Nicholas et al (2015) pointed to unapproachable library staff. Tanawade (2011) opined that many librarians lack self-reliance in the face of

growing information technology. However, LaRue, Huber, Johnson and Long (2012) believed that the library's most important assets are its professional staff who are capable to deliver at any point in time. Anyira (2011) reported that librarians who do not have advanced ICT skills cannot provide effective library services.

2. Low internet connection: Chigbu and Dim (2012) argued that there are no efficient and energy-efficient connections that can serve as a starting point for the development of Internet services. The authors noted that internet connectivity plays a major role in digital information, but equal access to the Internet has not yet been achieved in Nigerian academic libraries. The authors reiterated that in most of the surveyed libraries, internet connections to the library users are slow and working at snail's speed. It was observed that in some of the surveyed libraries, there was no internet facilities except some few readers that were using their personal internet facilities gotten from the telecommunication companies in Nigeria (e.g. MTN, Airtel, GLO, Etisalat, e.t.c).

3. Inadequate funding: Ishola (2014) asserted that money is needed to obtain

ICT equipment and for the maintenance of other library services. Wambua (2011) opined that library services require adequate funding to operate effectively. It is generally observed library is the least budgeted unit of most of the Nigerian Institution of higher learnings, the management usually argued that library is not an immediate profit yielding section that should demand given much financial support. This ugly scenario affects the acquisitions of the library resources (ICT inclusive).

4. **Limited library resources:** Limited library resources pose a significant barrier to the effective service delivery in meeting diverse needs of information seekers. Al-Kharousi et al (2016) opined that inadequate staffing lead to limited resources, resulting in increased workloads, among others. Wells and Sallenbach (2015) asserted that insufficient funding can hinder the implementation of technological advancements, restricting access to digital resources and affecting the efficiency of library services. Turner (2014) iterated that budget constraints often result in a reduction in the acquisition of new materials and subscriptions to scholarly resources.

Aside the aforementioned issues, the following factors could affect service delivery in the surveyed academic libraries: technological challenges (Breeding, 2015; Fitzgerald et al, 2014); lack of accessibility and inclusivity (Anderson & Davis, 2018); lack of visibility and marketing of library products and services (Connaway, Dickey & Radford, 2011; Luo & He, 2020); Understaffing and lack of expertise (Henderson (2019); insufficient user engagement and outreach (Gordon, 2020); low staff morale and burnout (Conboy, 2019); as well as the issue of information overload (Veinot & Vest, 2019); inadequate collaboration and teamwork (Lancaster & Adams, 2019; Casey, 2017);

Methodology

The study adopted the survey research design and data was collected using the quantitative approach to sample the opinions of 130 personnel working in the selected academic libraries in Ekiti State. Total enumeration sampling technique was used to survey the entire staff of the selected libraries, which consisted of library assistants, library officers, librarians and technical staff. The research instrument used was the questionnaire designed by the researchers.

The instrument contained 15 statements on the most challenging factors affecting library service delivery in the selected academic libraries. Data collected for this study was analyzed using Statistical Package for Social Science (SPSS), 26.0 versions. Data analysis

was done using descriptive statistics of frequency count, percentage, mean, standard deviation and multiple regression analysis.

Results Presentation and Findings

Research Question: What are factors affecting service delivery among staff in the academic libraries in Ekiti State?

Table1: Factors affecting service delivery among staff in the surveyed academic libraries

S/N	STATEMENT	SD (%)	D (%)	A (%)	SA (%)	M	SD	AM
i.	Irregular electricity power supply	0 (0.0)	4 (4.0)	68 (68.0)	48 (48.0)	3.67	.59878	
ii.	Incompetent and unqualified library staff	0 (0.0)	8 (8.0)	24 (24.0)	88 (88.0)	3.33	.79212	
iii.	Low internet connection	0 (0.0)	4 (4.0)	60 (60.0)	56 (56.0)	3.43	.56111	
iv	Inadequate funding	0 (0.0)	24 (24.0)	52 (52.0)	44 (44.0)	3.17	.73717	
v	Limited educational resources	16 (16.0)	44 (44.0)	28 (28.0)	32 (32.0)	2.63	1.02024	
vi.	Technological challenges	0 (0.0)	12 (12.0)	24 (24.0)	84 (84.0)	3.60	.66611	
vii.	Inadequate collaboration and teamwork	4 (4.0)	8 (8.0)	52 (52.0)	56 (56.0)	3.33	.74848	
.viii	Information overload	0 (0.0)	8 (8.0)	28 (28.0)	84 (84.0)	3.63	.60715	3.22
ix	Low staff morale and burnout	0 (0.0)	4 (3.3)	68 (56.7)	48 (40.0)	3.37	.54900	
x.	Lack of staff training and professional development	0 (0.0)	4 (4.0)	48 (48.0)	68 (68.0)	3.53	.56410	
xi	Insufficient user engagement and outreach	18 (18.0)	15 (15.0)	37 (37.0)	30 (30.0)	2.80	1.06643	
xii	Under staffing and lack of expertise	4 (4.0)	36 (36.0)	31 (31.0)	29 (29.0)	2.90	1.14640	
xiii	Lack of accessibility and inclusivity	17 (17.0)	16 (16.0)	35 (35.0)	32 (32.0)	2.82	1.06723	
xiv	Lack of visibility and marketing	4 (4.0)	36 (36.0)	31 (31.0)	29 (29.0)	2.90	0.89188	

Source: Field Survey, 2024

Key: SA: Strongly Agree; A: Agree; D: Disagree; SD: Strongly Disagree; STD: Standard Deviation; AM: Average Mean

Table 1 revealed that staff in the selected academic libraries in Ekiti State, these include: Ekiti State University, Federal Polytechnic and Federal University Oye-Ekiti considered some issues affecting their service delivery to be high judging by the average mean score of 3.22 on the scale of 4. Major challenging issues facing these members of library staff were: Irregular electricity power supply (mean 3.67), followed by information overload (mean 3.63), technological challenges (mean 3.60), then, lack of staff training and professional development (mean 3.53); low internet connection (mean 3.43), among other militating factors as reflected in the above table. This implied that if those aforementioned problems are not solved by the management, they would greatly affect the level of service delivery to readers in those surveyed academic libraries as well as their morale in discharging the expected services to various information seekers for a happy worker is a productive worker and vice versa.

Discussion of the Findings

It can be deduced from the above analysis that library staff considered some issues affecting their service delivery to be high. Major challenging issues facing these members of library staff were: irregular

electricity power supply. This confirmed the studies of Martens (2012) who noted that unreliable or inconsistent electricity supply can lead to damage to equipment and disruption of services. The issue of information overload, the finding confirmed Veinot and Vest (2019) who submitted that information overload can result in difficulties in identifying relevant resources, Also, the problem of technological challenges, this confirmed the studies of Breeding (2015) and Fitzgerald et al (2014) who reported that outdated or incompatible systems and software can impede the implementation of technological advancements. Then, the problem of staff training and professional development, Ward (2018) asserted that inadequate staff training and professional development present a significant barrier to academic service delivery among staff members.

Besides, the problem of low internet connection, it confirmed Chigbu and Dim (2012) who reported that in most of the surveyed libraries, internet connections to the library users are slow. It was observed that in some of the libraries, there was no internet facilities except some few readers that were using their personal internet facilities. In respect to the issue of low staff morale and burnout which was high among staff in the

selected libraries, this concurred with the studies of Conboy (2019); McMahon and Borgen (2019) where they submitted that burnout negatively affect staff members' motivation, creativity, and ability to provide quality services to library users. Furthermore, the problem of inadequate collaboration and teamwork, this confirmed the studies of Lancaster and Adams (2019); Casey (2017); To overcome this barrier, Radford and Radford (2018) suggested library management should foster a collaborative and inclusive work environment by promoting open communication, encouraging cross-departmental collaboration, and providing training and support to enhance teamwork skills. lack of accessibility and inclusivity, Chowdhury (2019) Patel and Mitchell (2017) suggested that it is imperative for library staff to prioritize accessibility and inclusivity by integrating universal design principles, offering diverse resources and services, and fostering a welcoming and inclusive environment.

Furthermore, the problem of visibility and marketing of library products and services, Mugo (2018) submitted that library staff should collaborate with university marketing departments and establish partnerships with faculty members to integrate library

resources into course curricula; understaffing and lack of expertise, Burke (2021) opined that investing in staff training and development programs enhance their knowledge and skills, enabling them to meet the diverse needs of library users effectively; insufficient user engagement and outreach, Bodnar and Zhang (2019) suggested that library staff should develop targeted outreach programs, employ a variety of communication channels and collaborate with faculty and student organizations to raise awareness and promote the value of library services; low staff morale and burnout, McMahon and Borgen (2019) suggested that library managers should prioritize staff well-being by fostering a supportive work environment and providing opportunities for professional development and recognition. Finally, the issue of information overload (Veinot & Vest, 2019), to address this barrier, Landry (2018) suggested that libraries can prioritize the development of information literacy programs and provide ongoing training to staff members on information organization and management techniques.

Conclusion

It is important for each institution authorities to seek and put in place those factors that would enhance service delivery of staff. Hence, the findings and recommendations that emanated from this study would be relevant to our local needs in Nigeria.

Recommendations

The study is recommending the following:

1. Irregular electricity power supply: The library management should provide alternative electricity power supply (though it might be costly) in the library to boost services rendered towards readers.
2. Information overload: The newly acquired information (educational) resources should be organized regularly in order to enhance easy accessibility.
3. Technological challenges: There should be adequate provision of computer and information retrieval equipment or

machines in the library so as to facilitate effective service delivery to the library users.

4. Low internet connection: Library management should provide internet connections and also renew the subscription of those inactive ones provided by the telecommunication organizations so as to enhance information accessibility, retrieval and dissemination.

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Perceived Application of Leadership Styles among Principals of Public Senior Secondary Schools in Kwali Area Council, Federal Territory (FCT), Abuja, Nigeria

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Abstract

The study investigated the perceived application of leadership styles among principals of public senior secondary schools, Kwali Area Council, Federal Capital Territory (FCT), Abuja, Nigeria. The study used descriptive survey research design. The population comprised of all the 120 teachers from the six public senior secondary schools in Kwali Area Council, FCT, Abuja. Sample of 60 (50%) teachers were selected from three sampled public senior secondary schools in Kwali Area Council, FCY, Abuja. Twenty teachers were sampled from each of the three sampled schools. The schools and teachers were sampled through random sampling technique. The instrument used for data collection was a researcher's self-designed questionnaire titled, "Principals' Leadership Styles Questionnaire (PLSQ)". Three research questions guided the study was analyzed using frequency counts and simple percentage. The results of the finding showed that principals of public senior secondary schools, Kwali Area Council, FCT, Abuja apply a democratic leadership style in the administration of their schools affairs which is the best leadership style. The finding of the study further revealed that principals of public senior secondary schools in Kwali Area Council, FCT, Abuja did not apply autocratic and laissez-faire leadership styles in the administration of the affairs of their schools. Based on the findings of the study, it was recommended among others that: public senior secondary schools in Kwali Area Council, FCT, Abuja should sustain the democratic leadership style in the administration of their schools. This is because democratic leadership style promotes schools' effectiveness.

Keywords: *leadership*, leadership styles, job satisfaction

Introductions

The concern about the falling standard of secondary school education in Nigeria is manifested in increasing poor performance of students in the Senior School Certificate Examination (SSCE). The results of the SSCE of WAEC in the FCT public schools show the declining students' performance in this public examination (ERC, 2020). Yero (2020) stated that falling standard in education has been linked to principals'

leadership styles which are deemed not conducive for the attainment of educational goals; this is because some of these principals were either authoritarian or indifferent.

According to Yahaya and Akinyele (2015) leadership style is the totality of the mental relations of the leader and the subordinates that are not characteristic of a given group or organization. Three categories of leadership styles were identified by them, these include

authoritarian, laissez-faire and democratic. Yahaya and Akinyele (2015) viewed that, a leader adopts one of these tendencies depending on his/her inclinations and the situation in which he or she has to perform his/her leadership role.

Many school administrators whose administrative styles are unproductive are untrained. Principals' lacks of training in school administration is bound to affect teachers' attitude towards their work and this would invariably impact on their performance (Yero, 2020). The significant of teachers' attitude to work and its influence on qualitative education cannot be underestimated and this may be influenced by the principals' leadership styles. In a situation where the leadership style of the principal is ineffective, even the most adequate resources, the most motivated staff and students and the most adequate resources would be unproductive. Hence, the significant of good leadership styles in an organization cannot be underestimated (Akomolafe, 2013).

The success of any school in accomplishing its prescribed goals and objectives solely depends on the principal and his/her leadership style. Where the principal provided effective leadership the attainment of school goals are obvious. The leadership

style of the principal has effect on teachers' attitude to work and that make him/her not as efficient in his/her work as expected of him/her. Leadership style is vital because the principal is the engine that motivates teacher's job performance. Generally, it is believed that, the situational factors surrounding the leadership determine its effectiveness.

The leader's position, power, motivational orientation, the types of prevailing situation, leader-members relations and the task structure impact already on the leaders job performance. Yero (2016); Fiedler and fred, (2013) and held that varying situations demand different leadership styles. A leader's behavior at any point in time is solely depend by the condition in which he/she finds himself/herself as well as the task he or she is set to attain leader-member relationship is very vital to this situational factors. The way the leader relates with group members the manner in which the principals issue query to his staffs, indiscipline in the school either with staff or students, has a vital influence on teachers' attitude to work and job satisfaction (Fiedler and fred, 2013).

Where a principal is junior to most teachers in school experienced teachers would not like to take instructions from a leader they assumed to be junior to them, and this

invariably leads or increases frustration thereby leading to job dissatisfaction. Frequent changes or careless selection of principals or transferred of principals to schools without due consideration in experiences due to filling quota system would create negative effect in the schools leadership.

The leadership role of any leader has much effect on the subordinates as well as the organization as a whole. Akomolafe (2013) pointed out that, managers are the basic scarcest resource of any business enterprise. Effective leadership can therefore, be said to have contributed immensely towards the success of many business organizations, family units and many developed nations.

Research Questions

The following questions guided the study:

1. Do principals in public senior secondary schools in Kwali Area Council, FCT use democratic leadership style?
2. Do principals in public senior secondary schools in Kwali Area Council, FCT use autocratic leadership style?
3. Do principals in public senior secondary schools in Kwali Area Council, FCT use laissez-faire leadership style?

Literature Review

Udo (2015) defined leadership styles as the manner in which leaders exercise their power of leading. Udo added that leadership style in any system can make or mar the relationship existing between the leader and the led. Udo (2015) further added that, there are three types of leadership styles: These include: the democratic, autocratic and laissez-faire. A democratic principal here has the final say but still invites other members of staff to contribute to decision making (Yero, 2020). This not only increases job action by involving others, it also develops people's skills. The autocratic principal according to Udo (2015) makes all decisions independent of members input. The autocratic leader dictates direction leaving member in the dark about future plans. The laissez-faire principal according to Pounder (2013) is a leader that allows the group complete freedom to decision-making without participating himself. This leader type provides materials and offers to assist only by request. The laissez-faire leader does not offer commentary on members performance unless asked directly and does not participate or intervene in activities.

Democratic leadership recognizes, inspects and accepts all social interactions in the organization. The leader allows members to express themselves their desires and works

towards needs satisfaction, they participate in organization management through conferences, meetings and consultation. Democratic leadership promotes efficient organization climate, positive human relations, create high sense of responsibility, foster high productivity and makes the leaders and members feel successful (Yero, 2020). According to Sailesh (2015) a democratic leader (principal) is that leader that does not makes decisions until he has presented the problem to his subordinates and listens to their advice and suggestions. Decisions are not taken alone by the leader. The autocratic leadership style is affected through force. It is synonymous to dictatorship. Its legitimacy does not emerge from members but rather imposed on them. Tasks are imposed on members who must obey and punishment is meted out for non-compliance (Ogunu, 2012). Onwuemezie (2013) characterized autocratic leadership by ruthlessness, selfishness, wickedness, greed, love of power and desired to be flattered. According to Oyedeji (2013) an autocratic or authoritative leader (principal) is that leader that makes decisions alone and then informs his subordinates who must abide with such decisions without questions. Akomolafe (2013) opined that it must be recognized that not all autocratic leaders yield negative

results. Kamolafe (2013) further added that, there are cases of benevolent dictatorship in which the autocratic leaders considers the interests of his subordinates, caters for them through despising the contributions and urging them to place their destinies in his hands. An autocratic leader gives directive to be carried out without questions or explanations. He has little faith and trusts in his subordinates. Production and worker output is usually high at the sight of the leader but drops in his absence due to lack of motivation, zeal, enthusiasm, commitment and job satisfaction (Fiedler and Fred, 2013). According to Oyedeji (2017) laissez-faire leadership style is a kind of leadership in which the leader takes a positive stance towards the needs of the organization and those of individuals. He tolerates diverse worker behaviours, allows them to work at their own pace, does little to enforce his authority on members, the rule of organization hierarchy is neglected and no defined code of rules and regulations. Oyedeji (2017) further view laissez-faire as a kind of leader who makes decisions alone but he does not compel his subordinates to abide by them. He tries to encourage them to accept the decisions. The laissez-faire leader has no confidence in his ability as a leader, does not set goals for his subordinates, responsibilities

and tasks are left for whoever willing to assure so (Sailesh, 2015). Onwuemezie (2013) postulated that productivity, workers' morale, team work and cooperation are observable low in laissez-faire style of leadership.

Basically, no single style of leadership would be said to appear effective in all situations. It is vital therefore for leaders, especially those within the school system to get acquainted with the positive and negative dimensions of each leadership style. Yero (2020) stated that, school principals are expected to analyze given situations properly before adopting a leadership style they intend to. Leaders (school principals) should be sensitive to both organizational and individuals interests. A transactional balanced and integrated style is best adopted in the school system.

Theoretical Framework

The study was anchored on the Trait Theory of Leadership draws its origin from the 'Great Man' theories, as propounded by Thomas Carlyle in 1841 as cited by Kendra (2015). According to Carlyle, history is shaped by extraordinary leaders. The ability to lead is something that people are simply born with. The trait theory of leadership postulates that successful leadership arises from certain inborn personality traits and characteristics that produce consistent

behavioural patterns... The central theme is that leaders are not made but born. Therefore, there must be distinctive characteristics between the leaders and other members of the group. These characteristics are: drive, integrity, knowledge of the business, self confidence and leadership motivation.

Statement of the Problem

School principals and teachers perform very sensitive and crucial roles in secondary schools to ensure that the objectives of education are attained by working harmoniously. Sometimes teachers may seem not to have positive attitude towards their works and as a result, fail to perform as required of them. It was observed by the researcher that there has been persistent dwindling of the goals of school system over the years based on observation of poor performance among teachers and students in public senior secondary schools in Kwali Area Council, FCT, Abuja has been a source of concern to FCT Secondary Education Board. Reports on teachers concerning their attitudes to work or even principals who do not function effectively in their schools is very pathetic. Specifically, principals report the uncooperative behaviors of good number of teachers. This has lead to cases of transfers of either the principals or teachers.

The performance of the group is contingent upon the leader with influence over his/her group members. Thus, leadership style of the principal has an impact on teacher motivation which can affect teachers' job satisfaction. Positive teachers' attitudes towards job performance are very important for smooth functioning of the schools. Principal's leadership style may positively or negatively motivate the teacher towards job performance.

Evidence by research has proved that the leadership behaviors of the principal are influenced by situational factors (Edem, 2017). Thus, the principal may use democratic, autocratic or laissez-faire type of leadership in dealing with teachers in the school. However, the leadership style used by the principals in a given situation may have influence on teachers' job performance. This study, therefore, sought to investigate the perceived leadership styles among principals of public senior secondary schools in Kwali Area Council, FCT, Abuja, Nigeria.

Methodology

The study adopted a survey research design. The population of the study comprised all the 120 teachers from the six public senior secondary schools in Kwali Area Council, federal capital territory, Abuja, Nigeria. The sample for the study was made up of 60

(50%) teachers selected from three sampled public senior secondary schools in Kwali Area Council, FCT, Abuja. Twenty teachers were sampled from each of three sampled schools. The schools and the teachers were sampled through random sampling technique.

The instrument used for data collection in the study was the researcher's self-designed questionnaire titled, "Principals' Leadership Styles Questionnaire (PLSQ)". The questionnaire was divided into four sections. Section A sought information from personal data of the respondents. Section B, C and D contains 15 items (5 items for each of them) seeking teachers' responses on their perception of their principals' democratic, autocratic and laissez-faire leadership styles respectively. Section B, C and D elicited responses on respondents' view on options of Agreed, Disagreed and undecided. The instrument was vetted and validated by experts in Measurement and Evaluation, Nigerian Educational Research and Development Council (NERDC) and experts from Educational Administration and Planning, University of Abuja.. The instrument was pilot tested on 10 teachers from two public senior secondary schools (5 from each) randomly chosen from two public senior secondary schools from Gwagwalada

Area Council, FCT, Abuja that were not part of the study and a reliability coefficient of 0.70 was obtained using Crombach alpha statistics. The researcher personally administered the questionnaire to the sampled teachers. Three research questions guided the study. Statistical analysis used to

analyze the research questions were frequency count and simple percentage.

Results Presentation

Research Question One: Do principals in public senior secondary schools in Kwali Area Council, FCT use democratic leadership style?

Table 1: Teachers' ratings of the Principals' Use of Democratic Leadership Style

S/No	Statements	Agree		Disagree		Undecided		Total
		F	%	F	%	F	%	
	%							
1.	My principal listen to views of others 100.0	40	66.7	20	33.3	0	0.0	60
2.	Teachers are allowed in decision making in my school. 100.0	60	100.0	0	0.0	0	0.0	60
3.	My principal adopts consultation with head of departments. 100.0	40	66.7	0	0.0	20	33.3	60
4.	My principal employs dialogue in settling conflicts. 100.0	40	66.7	20	33.3	0	0.0	60
5.	My principal share leadership role with others. 100.0	60	100.0	0	0.0	0	0.0	60

Results in table 1, showed that, respondents on items number 1,2,3,4 and 5 agreed that: my principal listen to views of others; teachers are allowed in decision making in my school; principals adopts consultation with heads of department; principals employs dialogues for settling conflict; and principal share leadership role with others were considered to be principals' use of

democratic leadership style in public senior secondary schools in Kwali Area Council, FCT, Abuja with highest percentage of scores of 66.7; 100.0; 66.7; 66.7 and 100.0 respectively. Only the percentage scores of 33.3; 0.0; 0.0; 33.3 and 0.0 of respondents disagreed respectively, while the percentage scores of 0.0; 0.0; 33.3; 0.0 and 0.0 of

respondents' undecided respectively on the items.

Area Council, FCT use autocratic leadership style?

Research Question Two: Do principals in public senior secondary schools in Kwali

Table 2: Teachers' ratings of the Principals' Use of Autocratic Leadership Style

S/No	Statements	Agree		Disagree		Undecided		Total
%		F	%	F	%	F	%	
1.	My principal does not keep close contacts with teachers. 100.0	20	33.3	40	66.7	0	0.0	60
2.	My principal dominates discussions at staff meetings.. 100.0	20	33.3	40	66.7	0	0.0	60
3.	Staff suggestions are ignored by my principal.. 100.0	40	66.7	0	0.0	20	33.3	60
4.	The principal speaks and acts as the only person who takes decisions. 100.0	20	33.3	40	66.7	0	0.0	60
5.	My principal uses veto powers at staff meetings. 100.0	10	16.7	50	83.3	0	0.0	60

Results of findings in table 2 above showed that respondents on items number 1,2,3,4 and 5 disagreed that their principal does not keep close contacts with teachers; principal dominates discussions at staff meetings; staff suggestions are ignored by the principal; principal speaks and acts as the only person who takes decisions for the running of the school; and that their principals use veto powers at staff meetings. This implies that their principals are not autocratic in their

leadership style in public senior secondary schools in Kwali Area Council, FCT, Abuja with highest percentage scores of 66.7; 66.7; 58.3; 66.7 and 83.3 respectively. Only the percentage scores of 33.3; 33.3; 41.7; 33.3 and 16.7 of respondents agreed respectively.

Research Question Three: Do principals in public senior secondary schools in Kwali Area Council, FCT employ laissez-faire style of leadership?

Table 3: Teachers' ratings of the Principals' Use of Laissez-faire Leadership Style

S/No	Statements	Agree		Disagree		Undecided	
		F	%	F	%	F	%
Total	%						
1.	My principal allows teachers to take decisions and handle issues as it pleases them. 100.0	0	0.0	60	100.0	0	0.0
2.	The principal admits personal favours to teachers 60 100.0	25	41.7	25	41.7	10	16.7
3.	My principal attends school sparingly. 60 100.0	25	41.7	35	58.3	0	0.0
4.	The principal allows things to sort themselves out. 100.0	20	33.3	40	66.7	0	0.0
5.	My principal permits teachers Freedom to work as they pleased. 100.0	25	41.7	35	58.3	0	0.0

Results of findings in table 3 above showed that respondents on items number 1,2,3,4 and 5 disagreed that principal allows teachers to take decisions and handle issues as it pleases them; principal admits personal favours to teachers; principal attends school sparingly; principal allows things to sort themselves out; and principals permits teachers' freedom to work as thy pleased. This means that principals does not use laissez-faire style of leadership in public senior secondary schools in Kwali Area Council, FCT, Abuja with highest percentage scores of 100.0; 41.7; 58.3; 66.7; and 58.3 respectively. Only the percentage scores of 0.0; 41.7; 41.7; 33.3; and 41.7 of respondents agreed respectively,

while the percentage scores of 16.7 of respondents on the above item undecided.

Discussion of the Findings

The findings on research question one disclosed that principals in public senior secondary schools in Kwali Area Council, FCT, Abuja used democratic leadership style. Respondents agreed that: their principals listen to the views of others; teachers were allows to participate in decision making; principals adopted consultation with heads of departments; principals employed dialogues in settling conflicts; and principals share leadership role with others. This implies that principals in public senior secondary schools in Kwali Area Council adopt democratic

leadership style. The finding is in tandem with the finding of Yero (2020) that, teachers perceived their principals as adopting a democratic leadership style in the administration of the school affairs, which is the best type of leadership style. The democratic leader welcomes team input discussion and decision making; shares plans with the group and offers multiple option for group consideration.

The finding in research question two attempt to find out if principals in public senior secondary schools, Kwali Area Council, FCT, Abuja uses autocratic leadership style. Respondents disagreed that their principals dominates discussions at staff meetings; staff suggestions are ignored by the principal; their principal speaks and acts as the only person who takes decisions for the running of the school; and the principal uses veto powers at staff meetings. This implies that their principal does not adopt autocratic leadership style in the administration of schools affairs. This finding supports the findings of Alimi, Alabi and Ehinola (2015) and Yero (2020) who opined that schools principals do not adopts autocratic leadership in managing their schools. They further stated that school principals keep close contacts with teachers; gives room for other teachers' contribution

during staff meetings; does not apply veto powers during staff meetings.

The findings in research question three attempt o find out if principals in public senior secondary school attempt to find out if principals in public senior secondary schools, Kwali Area Council, FCT, Abuja adopts laissez-faire style of leadership. Respondents disagreed that their principals: allow teachers to take decisions and handle issues as it pleases them; admits personal favours to teachers; attends school sparingly; allows things to sort themselves out; and permits teachers' freedom to work as they pleased. This connotes that principals in public senior secondary schools, Kwali Area Council, FCT, Abuja do not adopt laissez-faire style of leadership in the administration of the affairs of their schools. This finding is in agreement with the findings of Sailesh (2015) and Yero (2020) who opined that school administrators do not employs laissez-faire type of leadership in the running of their schools. They held that a good principal should not allow teachers to take decisions and handle issues as they want; admits personal favours to teachers; permits teachers freedom to work as they want.

Conclusion

The paper attempted to investigate teachers' perception of the type of leadership styles their principals adopt and to also find out their perception of their jobs satisfaction in public senior secondary schools in Kwali Area Council, FCT, Abuja, Nigeria. Sequel to the findings of this study, it is evident to state here that principals in public senior secondary schools, Kwali Area Council, FCT, Abuja adopt democratic leadership style in the administration of their schools affairs, which is the best leadership style. The findings of the study further revealed that principals of public senior secondary schools, Kwali Area Council, FCT, Abuja did not apply autocratic and laissez-faire leadership styles in the administration of the affairs of their schools. It was also generally observed from all indications that teachers in public senior secondary schools in Kwali Area Council, FCT, Abuja are satisfied with principals' application of democratic leadership style.. It is evident to note here that, when school principals adopt a democratic leadership style to run the affairs of the schools will help to promote the

attainment of this school goals and objectives.

Recommendations

Based on the findings of the study, the following were recommended:

1. Public senior secondary school principals in Kwali Area Council, FCT, Abuja should sustain the democratic leadership style in the administration of their schools. This is because democratic leadership style promotes organizational effectiveness.
2. Public senior secondary school principals in Kwali Area Council, FCT, Abuja should sustain the tempo of not adopting the autocratic leadership style in the administration of their schools. This is because autocratic leadership style hinders organizational effectiveness.
3. Public senior secondary school principals in Kwali Area Council, FCT, Abuja should sustain the tempo of not adopting the laissez-faire leadership style in the administration of their schools. This is because laissez-faire leadership style hinders organizational effectiveness.

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Effects of Interactive Multimedia Instruction on Academic Performance of Secondary School Students in Social Studies in Kaduna State, Nigeria

By

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Abstract

The study investigated "Effects of Interactive Multimedia Instruction on Academic Performance in Social Studies among Junior Secondary School Students in Zaria Educational Zone, Kaduna State. The study was specifically aimed at determining whether there is a significant difference between the mean academic performances of Social Studies Junior Secondary School Students who were taught by way of Interactive Multimedia Instruction (IMI) and those with Conventional Lecture Method (CLM) and also to find out whether gender affects the student's academic performances in the experimental group. The population for the study consisted of 94 JSS III Social Studies Students from which sample was purposively selected, two corresponding questions and hypotheses were raised tested at 0.05 level of significance. Statisticians for content and face validity validated the instruments. Pilot testing was conducted in Government Commercial College, Zaria, using 24 Social Studies students; a reliability Coefficient of 0.74 was realised using the Cronbach Alpha method. Social Studies Interactive Multimedia Package (SOSIMP) and Social Studies Conventional Lecture Method (SOSCOLM) were used. Social Studies Achievement Test (SSAT) was the instrument for data collection. The study revealed that Social Studies Junior Secondary School Students who used Interactive Multimedia Instruction (IMI) performed more than those taught through Conventional Lecture Method (CLM). Interactive multimedia instruction (IMI) is an instructional strategy that works for both genders at junior secondary schools as their academic performance improves significantly. Given the above findings, the study recommends that the Kaduna State Ministry of Education equip computer laboratories in each secondary school in the state.

Keywords: *Academic performance*, interactive multimedia, secondary school students, social studies

Introduction

Education in Nigeria is pragmatic and dynamic. This is one of the reasons changes continue to occur within its structure from time to time. The society that education is meant to serve is equally dynamic. Therefore, to be relevant to society's needs and aspirations, education must keep pace with societal changes. The quality of education

partly depends on the availability of resources in the school, and the performance depends significantly on the teachers' knowledge, skill and attitude. Schools with qualified teachers, interactive teaching and learning materials and comfortable school compounds can provide qualitative and assessable education for learners. The choice

of effective, adequate and relevant teaching technique by a qualified Social Studies teacher, taking into consideration the topic to be taught and the student's level and ability, is the starting point and a foundation for attaining effective transaction and communication between teacher and students in Social Studies classroom (Salihu, 2015).

Teaching strategies are very vital in the teaching-learning process. The method adopted by the teacher may promote or hinder learning. According to Yerima (2007), Effective methods stimulate students' interest in a topic, which is the basis for achieving desired objectives or may discourage their initiative and curiosity. Any established school curriculum calls for means of its practical implementation in order to achieve the desired objectives for which it is intended. (Adoke 2005). The purpose of multimedia instruction in teaching and learning is to provide sources of learning experiences for students. Multimedia instruction facilitates interaction among teachers and students during the teaching and learning process and helps students to learn, broaden learning experiences and meet different learning needs. Adegoke (2010) opined that multimedia is increasingly being used in many developed countries, including Nigeria, due to the advantages derived from using multimedia instruction, which

includes, among others, complicated topics can be explained and understood better with the aid of pictures, graphs, animations and simulations as well as complex concepts are presented in small, chronological steps as a means to improve student's ability to comprehend information in a meaningful way (Neo & Neo, 2001).

However, when used in the classroom or for educational purposes, multimedia instruction's design quality and sophistication must be high enough to combine the different cognitive processes to achieve the teacher's best mimicking. The importance of multimedia resources in education as a teaching or learning tool must be overemphasised. Several studies have investigated multimedia resources' impact on the education system. Milovanovi (2013). Demonstrated the importance of using multimedia resources in Mathematics classes and found that the multimedia resources greatly enhance students' learning. The pedagogical strength of multimedia is that it uses the natural information-processing abilities we already possess as humans. Multimedia teaching will bring students into a class where they can interact with the teacher and the subject. Multimedia teaching is more intuitive than old ways; teachers can simulate situations in real life.

In many circumstances, teachers do not have to be there; students will learn by themselves in the class. More importantly, teachers will have more approaches to stimulating students' passion for learning. Multimedia finds its application in various areas, including but not limited to advertisements, art, education, entertainment, engineering, medicine, mathematics, business, scientific research and spatial temporal applications. Ogunbote and Adesoye (2006) expressed that multimedia technology adds new dimension to learning experiences. Because concepts are more accessible to present and comprehend when the words are complemented with images and animations. Many teachers were educated in classrooms where the student's role was memorising information, conducting well-regulated experiments etc. They were then tested on their ability to repeat these tasks or remember specific facts. The Teacher Education program they undergo did not cater for these changes.

Social studies teaching in Nigeria has yet to enjoy the necessary support to facilitate teacher-student communication and enhance the desired outcome. Most Social Studies teachers in secondary schools in Nigeria are either reluctant to use multimedia resources like audio-visual aids or are technically deficient on the mode of its operations. They

most often used didactic method of teaching which is more teacher-centered and mere indoctrination. The students are just passive listeners despite Nigeria accepting multimedia resources as an innovation that should be incorporated as an integral part of our instructional delivery system in all school subjects, including Social Studies. Several factors like technical constraints, limited time allocation in the timetable, poor power supply, and inadequacy of multimedia gadgets in Nigerian schools have beset the effective use of multimedia instruction. Thus, social studies as a field of study is included in whatever multimedia is made in the educational arena.

Multimedia instruction assists learners in getting on well with mental representations using different media elements that support information processing. Information, made up of content and sometimes learning activities, is presented with a combination of text, image, video and audio through digital learning resources (Adamu & Adejo, 2024). It has been demonstrated, by research on using multimedia for learning, that there are more positive results observed in learners who combine pictures and words than those who use words only (Chen & Lio, 2008; Mayer, 2008). Eady and Lockyer (2013) stated that different pedagogy methods were implemented by using digital resources,

demonstrating to them, stimulating a group, making different text types available and interactively engaging students.

Gilakjani (2012) mentioned three reasons and the rationale for using multimedia in the classroom. Some of these limitation limitations include unfriendly programming or user interface, limited resources, lack of required knowledge and skill, limited time and high maintenance cost, among others (Al-Ajmi & Aljazzaf, 2020; Putra, 2018). The previous studies of Salihu et al. (2023); Musa and Isa (2022); Alamina and Otuturu (2019); Sharma (2013) showed that students taught using multimedia packages scored significantly higher on achievement tests compared to those taught with traditional lecture methods. Thus, multimedia instructional package enhances the students' performance in cell division concept better than the traditional lecture method. However, the findings of Yulifar and Agustina (2020); Abathi (2012) Chen (2012); Adegoke (2011) which found no significant difference in achievement between students taught with multimedia instruction versus conventional methods.

On the other hand, the finding aligns with previous research revelations of Kivuti (2021); Vagg et al. (2020); Alamina and Otuturu (2019); Asuzu and Okoli (2019) which found no significant difference in the

academic achievement of male and female students taught using the multimedia package. In contrast, some research has indicated gender differences in learning with interactive multimedia. The findings of Li and Liu (2022); Mayer and DaPra (2018); Large et al (2016); Ahmed and Abimbola (2015) revealed that male students performed significantly better than female students when taught using interactive multimedia approaches. However, this study's problem hinges on determining the extent to which Interactive Multimedia Program are used to achieve Instructional effectiveness among Social Studies Students at Secondary Schools in Kaduna State, Nigeria.

Problem Statement

The integration of interactive multimedia instruction in educational settings has been posited as a transformative approach to enhance learning outcomes. However, its effects on the academic performance of secondary school students in Social Studies, particularly in Zaria Education Zone, Kaduna State, Nigeria, remains under-explored. This study fills the gap.

Research Questions

The following research questions were raised.

- i. What is the difference in mean academic performance scores between students exposed to Interactive Multimedia Instruction (IMI) and those using the Conventional Lecture Method?
- ii. What is the effect of gender on students' academic performance score taught using Interactive Multimedia Instruction (IMI)?

Research Hypotheses

H₀₁: There is no significant difference between the mean academic performance scores of students using Interactive Multimedia Instruction (IMI) and their counterparts using the Conventional Lecture Method.

H₀₂: There is no significant difference between male and female students' mean academic performance scores using Interactive Multimedia Instruction.

Methodology

This study employed a Quasi-experimental research design. It is an design that assigns research subjects to the treatment and control groups (National Centre for Technology Innovation, 2007). The study population comprises junior secondary school students in the Zaria Education Zone of Kaduna State, including Zaria, Sabon Gari, and Soba Local Government Area. The study used 120

students, 60 of whom were used as an experimental group, and the other 60 were controlled. The decision on the sample size was based on the recommendations of Olayiwola (2010). The study purposively selected areas because of the availability of computer laboratories needed to expose the students in the experimental group to an instructional package using the computer as a medium. The study used an instructional package called Social Studies Interactive Multimedia Package (SOSIMP) to teach the experimental group. The package consisted of hypertext, animation, pictures, and sound to assist the students in learning about the natural and artificial environment of man and its features.

On the other hand, the conventional lecture method was used to teach students, who were considered the control group; the instructional package was named Social Studies Conventional Lecture Method (SOSCOLM). The students were pretested before being exposed to the packages. The teacher-made test used a self-developed instrument, the Social Studies Achievement Test (SSAT), to collect data. The Pre and Post Tests score on a baseline mark of 0-100. The data collected was analysed using mean and standard deviation to answer the research questions. At the same time, t-test independent sample was used to test the null

hypotheses and determine whether significant differences exist between two groups.

Results and Discussion

Research Question One: What is the difference in mean academic performance

scores between students exposed to Interactive Multimedia Instruction (IMI) and those using the Conventional Lecture Method?

Table 1: Mean Academic Performance Scores of Experimental and Control Group

Treatment Groups	N	Mean
Experimental (IMI)	60	68.18
Control (CLM)	60	39.30

Table 1 above shows the mean academic performance of students taught through Interactive Multimedia Instruction and those taught through Conventional Lecture Method. The mean performance is 68.18 and 39.30 for the experimental and control groups, respectively. This, by implication, indicates that differences exist between the two groups. The experimental group (IMI)

has higher mean academic performance than its control group (CLM) counterparts.

Research Hypothesis

H₀₁: There is no significant difference between Students' means of academic performance scores taught using Interactive Multimedia Instruction (IMI) and their counterpart taught with Conventional Lecture Method.

Table 2: Results of Independent Sample t-test on Mean Academic Performance Scores of Experimental and Control groups

Variable	Treatment	N	Mean	StD	Df	t-cal	t-it	Sig(p)	Decision
Experimental	IMI	60	68.18	7.69491	118	20.948	1.96	0.00	Rejected
Control	CLM	60	39.30	7.4065					

Calculated $p < 0.05$, calculated $t > 1.96$ at Df 118

The result from independent sample t-test in Table 2 above showed that significant differences existed between the experimental group (IMI) and the control group (CLM) in their means academic performance. This was because the calculated significance (P) value of 0.000 was less than the 0.05 alpha significance level. The calculated t value of

20.95 was higher than the 1.96 critical t value at Df 118. Similarly, their calculated academic performance means were 68.18 and 39.30 for experimental and control group students, respectively.

Based on the above, it was concluded that there was a significant difference between the mean academic performance of Junior

Secondary School students taught through Interactive Multimedia Instruction (IMI) and their counterparts taught through the Conventional Lecture Method (CLM). Therefore, the null hypothesis that there was no significant difference between the mean

scores of students using Conventional Lecture Method is currently rejected.

Research Question Two: What is the effect of gender on students' academic performance score taught using Interactive Multimedia Instruction (IMI)?

Table 3: Mean Academic Performance Scores of Male and Female Students in Experimental Group.

Gender	N	Mean
Male	30	67.83
Female	30	68.53

Table 2 above shows the mean scores of male and female students in the experimental group. The mean academic performances were 67.83 and 68.53 for male and female students, respectively. The difference is marginal, implying that there is no gender difference between the mean

scores of students at Junior Secondary School who were taught using Interactive Multimedia Instruction (IMI).

Research Hypothesis Two

H₀₂: There is no significant difference between the mean scores of male and female students taught using interactive multimedia instruction.

Table 4: Results of Independent Sample t-test on means Academic Performance Scores of Male and Female

Variable	IMI	N	Mean	Std. dev	Df	t-cal	t-cri	P-Value	Decision
Experimental	Male	30	67.8333	7.79847	58	0.350	1.96	0.728	Retained
Control	Female	30	68.5333						

Calculated p < 0.05, calculated t > 1.96 at DF 118

The result from independent sample t-test in Table 4 above showed no significant difference between the mean scores of male and female students using Interactive Multimedia Instruction (IMI). This was because the calculated significance (P) value of 0.73 is higher than the 0.05 alpha significance level. The calculated t value of 0.35 is lower than the 1.96 critical t value at

Df 58. Therefore, the null hypothesis, which stated a significant difference between the mean scores of male and female students using Interactive Multimedia Instruction (IMI), is retained at this moment.

Discussion of the Findings

It was revealed in the study that Interactive Multimedia Instruction (IMI) is an instructional strategy that improves the

academic performance of social studies students at junior secondary school. This finding supports the previous findings of Salihu et al. (2023); Musa and Isa (2022); Alamina and Otuturu (2019); Sharma (2013) which showed that students taught using multimedia packages scored significantly higher on achievement tests compared to those taught with traditional lecture methods. Thus, multimedia instructional package enhances the students' performance in cell division concept better than the traditional lecture method. However, differ with the findings of Yulifar and Agustina (2020); Abathi (2012) Chen (2012); Adegoke (2011) which found no significant difference in achievement between students taught with multimedia instruction versus conventional methods.

The study also revealed no significant difference between the mean scores of male and female students taught using interactive multimedia instruction. The finding aligns with previous research revelations of Kivuti (2021); Vagg et al. (2020); Alamina and Otuturu (2019); Asuzu and Okoli (2019) which found no significant difference in the academic achievement of male and female students taught using the multimedia package. In contrast, some research has indicated gender differences in learning with interactive multimedia. The findings of Li

and Liu (2022); Mayer and DaPra (2018); Large et al (2016); Ahmed and Abimbola (2015) revealed that male students performed significantly better than female students when taught using interactive multimedia approaches.

Conclusion

The findings of this study provide compelling evidence for the effectiveness of Interactive Multimedia Instruction (IMI) in enhancing the academic performance of junior secondary school students in social studies. The significant improvement in achievement scores for students taught using IMI aligns with a body of research supporting the benefits of multimedia packages over traditional lecture methods. This consistency across multiple studies strengthens the case for incorporating IMI into social studies curricula to boost student learning outcomes. However, it is essential to note that some studies have found no significant difference between multimedia and conventional teaching methods, highlighting the need for further research to understand the factors contributing to IMI's effectiveness in different contexts.

The lack of gender disparity in academic achievement when using IMI is another noteworthy finding, suggesting that this instructional approach may offer equitable learning opportunities for both male and

female students. This result is corroborated by several studies, although conflicting evidence exists, with some research indicating male students outperform females when taught using interactive multimedia approaches. These mixed results regarding gender differences underscore the complexity of learning processes and the potential influence of various factors beyond the instructional method. As educators and policymakers consider implementing IMI in social studies classrooms, they should be mindful of these nuanced findings and strive to create learning environments that support all students, regardless of gender. Further research is needed to explore the long-term impacts of IMI on student achievement and identify best practices for its implementation across diverse educational settings and subject areas.

Recommendations

In the light of the above, the study made the following recommendations

- i. Curriculum planner should integrate Interactive Multimedia Instruction (IMI) into social studies curricula at the junior secondary level to improve academic performance. At the time, government at various levels and relevant stakeholders in education should invest in necessary technology and resources to support the implementation of IMI in classrooms.
- ii. While the study found no significant difference in performance between male and female students using multimedia instruction, it is important to design multimedia content that is inclusive and engaging for all genders in Social Studies classroom. This could involve varying the design elements based on preferences noted in other studies, such as color schemes and interactive features.

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Relative Effectiveness of Computer-Assisted Instruction on Learning Motivation and Performance in Chemistry Concepts

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Abstract

The study determined the relative effectiveness of Computer-Assisted Instruction on learning motivation and students' academic performance in chemistry concepts among senior secondary school students in Kankia, Katsina State-Nigeria. The study had two research objectives, two research questions and two null hypotheses. A total number of 123 students consisting of 78 males and 45 female selected using Simple random sampling techniques formed the sample for the study. The study adopted the pretest, posttest, quasi experimental and control group design. The subjects in the experimental group were taught using Computer-Assisted Instruction (CAI), while the control group was exposed to lecture method for a period of six weeks. Two validated research instruments, with reliability coefficient of 0.88, and 0.75 namely chemistry Performance Test (CPT), and Motivation towards Chemistry Questioner (MTCQ) were used in data collection. Two null hypotheses were tested using t-test and Mann–Witney u-test statistic at $P \leq 0.05$ level of significance. The major findings from the study revealed that there is significant difference in the posttest mean performance scores of experimental and control groups in favour of experimental group. Furthermore, students exposed to Computer-Assisted Instruction had higher level of motivation in learning chemistry concept than lecture group. The study found CAI an effective teaching method. Based on that findings emanating from this study it was recommended that federal and state governments should adequately train Chemistry teachers on using Computer-Assisted Instruction in teaching chemistry among others.

Keywords: *Computer-assisted instruction*, chemistry concepts, academic performance, and motivation

Introduction

The recent trends in the development of chemistry education in Nigeria have been considered in many articles advocating for science teachers to use modern experimental methods in chemistry on school learning and practice. Chemistry is one of the most important subjects in science and contains a number of abstract concepts that students often find difficult to understand. Thus

students sometimes lose interest in learning chemistry as a subject. One of the objectives of science education is to develop students' learning interest in science and technology as today's society depends largely on developments in science and technology (FGN 2015). Teachers are expected to devise ways of making their students to develop positive motivation and interest towards

science and science-related disciplines (Cox, 2019). There has been a great shift in emphasis in science teaching and learning over the years worldwide, the concern in recent times is to have science classrooms that are student-centred, activity oriented and which focus on understanding rather than rote learning and simple recall of knowledge. Students tend to memorize facts and principles, most of which they do not understand but only to regurgitate them during examination. Thus the retention of ideas, facts and principles learned in this way might not be worthwhile (Ibrahim, 2016).

It is in line with this view that Abanikannda (2016), contended that the present teaching and learning of science in Nigeria seems inadequate. The scholar stressed that the level of academic and professional competence of science teachers need to be raised to the level that teachers can teach students with a focus on understanding rather than frequent use of only lecture method that often lead to rote learning. Moreover, recall of knowledge and memorization are not appropriate focus of science learning. The contemporary problem and need of the society today centred on sound development of science and technology for which chemistry education is pivotal. However, with the importance of chemistry for development of science and

technology and provisions made by the Federal Government of Nigeria for effective teaching and learning of chemistry, the objectives of its teaching and learning as stated in the Nigeria Secondary school chemistry curriculum is yet to be achieved. According to Kamisah and Nur (2013), the major problems that affect the teaching and learning of chemistry in the secondary schools are twofold: the abstract and highly conceptual nature of chemistry seems to be particularly difficult for students, and the teaching methods.

The teaching method used by teachers is very vital in any teaching-learning situation as it may promote or hinder learning. It may sharpen mental abilities and encourage students to learn effectively or may discourage initiatives and curiosity of the students to learn effectively (Paul & Dantani 2012). There is however, the need for science teachers to understand that different topics in science may require different teaching approaches depending on the complexity and structure of the topics. Lawal (2022), accentuated the need for educators to take advantage of the available knowledge base of learning, improving educational quality requires at least, placing learners in active rather than passive roles. People learn by being engaged actively, with Knowledge

base. Yusuf (2017), opined that Lecture Method is teacher-centred and encourages rote learning. Emphasis therefore should be shifted to activity-based learning such as used of Computer-Assisted Instruction.

Computer-Assisted Instruction (CAI) in this study is the process by which written and visual information are presented in a Tutorial Mode of Instruction to learners through computer. The students learn by reading the text material presented and by observing the graphic information displayed. Each segment of text is followed by questions, for student's responses. Feedback on responses are indicated immediately, Computer-Assisted Instruction can be characterized as interactive and individualized learning as it usually involves a dialogue between one student and a computer programme, and a student can learn at his own pace and time frame. Furthermore, the most important goals of teaching are those events (for instance; critical thinking, analytical reasoning and written/oral communication) that occur during the process. The actual use of computer technology in chemistry education is still limited due to obstacles related to instructional facilities, technical potentials, teaching staffs, and available financial resources.

Academic performance is a variable in this research. It is defined as the extent by which learners perform in the lesson taught or examination result. (Lawal 2022), Academic performance is affected by many factors such as learning motivation, student ability, the quality of secondary education received, and teaching method. Researchers (Abdulkarim & Lawal 2012, Ekundayo, 2022) worked on teaching method and academic performance in science education. The overwhelming view of these researchers agreed that, there is relationship between the type of method adopted in teaching and students' academic performance, Ibrahim (2016) accentuated the need for educators to take advantage of the available knowledge base of learning, improving educational quality requires at least, placing learners in active rather than passive roles. People learn by being engaged actively, with Knowledge base that empowers and increases psychological construct of learning like learning motivation.

Learning motivation is the driving factor in catalysing the will and desire to succeed or to achieve certain learning goals (Pintrich & Degroot, 1990). Motivation is one of the conditions that drives and sustains learning behaviours. There are many motivational constructs that could relate to academic

success in secondary schools. However, researchers have identified intrinsic and extrinsic motivations, and assessment anxiety as important constructs for science learning (Glynn & Koballa, 2006). Thus, the present study determined the relative effectiveness of Computer Assisted Instruction on learning motivation and students' academic performance in chemistry concepts among senior secondary schools students of Kankia, Katsina-State, Nigeria.

Statement of the Problem

Despite the importance of chemistry as one of the physical science to the socio economic and technological development of any nation, performance of Nigeria students in the subjects in both internal and external examination have remain consistently poor. Study conducted by Yusuf, Gambari, and Olomorin (2016), indicates that inability of teachers and students to adopt different ways of teaching and learning strategies and lack of exposure to current instructional materials and resources for the effective learning processes are some of the challenges being face by chemistry teachers and students. The West African Examination Council Chief Examiner Report, (WAEC, 2019), identified some areas of weaknesses of the students which were reported as a contributing factor to student's poor

performance in Chemistry. These include: Poor understanding of general principles and concepts, such as atomic structure, chemical equilibrium, Redox reaction among others. The results of the previous studies observed in Nigeria show that, there are a number of factors that can be attributed to students' failure in chemistry, these include: a lack of qualified chemistry teachers, lack of laboratory equipment and modern instructional material to demonstrate scientific principles and theories, (Nwane & Agommoh, 2017). Teachers lack the laboratory facilities and molecular models needed to make the abstract concepts of chemistry real and learnable for students (Kamisah & Nur 2013). The constant use of traditional lecture method as stated by Jack and Kyado, (2017) has led to inactive learning and decrease in retention ability because it ignores creativity of students. Therefore there's need to provide an activity based learning strategy like computer-Assisted Instruction in teaching chemistry concepts which are perceived to be very difficult to learn at secondary school level. Researchers, (Nwane & Agommoh, 2017; Rosali, 2020). Reported that, Computer-Assisted Instruction may possibly improve students' performance at various level. Therefore in an attempt to possibly improve

learning motivation and student academic performance in chemistry, the researcher perceived the need to delve into research on the relative effectiveness of Computer-Assisted Instruction on learning motivation and students' academic performance in chemistry concepts at senior secondary level in Kankia, Katsina State Nigeria.

Objectives of the Study

The Objectives of the study are to:

- i. determine the effect of Computer-Assisted Instruction on the Academic Performance of senior secondary students when taught chemistry concepts,
- ii. investigate if Computer-Assisted Instruction has any effect on students' learning motivation when exposed to learning Chemistry concepts,

Research Questions

The following research questions were formulated for answering:

- i. What is the difference between the mean Academic Performance scores of students taught chemistry using Computer-Assisted Instruction and those taught using lecture method?
- ii. What is the difference between the motivation level of students' taught Chemistry using Computer-Assisted Instruction and those taught using lecture method?

Null Hypotheses

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

HO₁: There is no significant difference between the mean Academic Performance scores of students exposed to Computer-Assisted Instruction and those exposed to Lecture Method when taught chemistry Concepts.

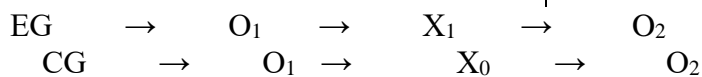
HO₄ There is no significant difference between the motivations of students exposed to Computer-Assisted Instruction and those exposed to lecture when taught Chemistry concepts.

Methodology

The population of the study covered all senior secondary year two (SSII) students' studying chemistry as a subject in the public senior secondary schools of Kankia Education Zone, Katsina state-Nigeria. There is a total number of 1,383 senior secondary schools students' in these schools. The sample of the study involved 123 (SS II) chemistry students' selected from two public co-educational secondary schools in the study area. In selecting the sample for the study, four out of the twelve schools were randomly selected and pretested to select schools that are not different significantly in terms of their

academic performance. Their scores data obtained were subjected to data analysis using Analysis of variance (ANOVA), and Scheffe's post-hoc test. Two schools were found not significantly different in terms of their mean scores. Simple random sampling technique involving balloting without replacement was used in assigning the schools into experimental and control condition. However, in selecting students' sample, intact classes were used for experimental and control groups.

The study utilized quasi experimental and control groups design, because of non-randomization of research subjects, involving



Source: Adapted from (Kerlinger 1973).

Figure: 1. Schematic Illustrations of the Research Design

KEY: EG= Experimental group. CG=Control group. X₁= Teaching using Computer-Assisted Instruction (Treatment). X₀=Teaching using Lecture Method only (No Treatment). O₁= Pretest. O₂= Posttest.

Research Instruments

Chemistry Performance Test (CPT) is an instrument developed by the researcher consisting of 50 objective test items using relevant WAEC (May /June 2021) past question paper. The motivation toward

pre-test and post-test This is made of two groups; experimental and control. A pretest (O₁) was administered to both groups to ensure that participants have comparative abilities in terms of academic performances and motivation level. The Experimental Group (EG) were exposed to Computer-Assisted Instruction while the Control Group (CG) were exposed to lecture method for a period of six weeks to determine the relative effectiveness of Computer-Assisted Instruction on learning motivation and students' academic performance in chemistry concepts. The illustration of the research design is presented in Figure 1.

chemistry Questioner was adopted from (Pintrich and degoroot 1990) and modified by the researcher, the pretest was administered to both groups to determine equivalence of students' performance and motivation level prior to the treatment. The posttest was used to determine the relative effectiveness of Computer-Assisted Instruction on the students' academic performance and motivation level.

Reliability of the Instrument

The reliability coefficient of Chemistry Performances Test (CPT) was determined

after pilot testing using test, re-test method. The two results of the tests were compared and computed using Pearson Product Moment correlation Coefficient with the aid of (SPSS) software package. The result obtained was 0.88, positive correlation. The reliability coefficient of Motivation towards Chemistry Questionnaire (MTCQ) was determined by administering the Questionnaires once to the group of fifty (50)

students' using Split-half method. Spearman Rank Order Correlation was used to estimate the reliability for the (MTCQ) the result obtained were 0.75, this shows a positive relationship. The data obtained from the study were analysed using descriptive and inferential statistics to answer research questions, and the two null hypotheses were tested using t-test and u-test independent statistic at $P \leq 0.05$ level of significance.

Data Analysis and Results Presentations

This section presents the result and interpretation of the data collected from the study subject.

Table: 1. Pre-test Mean Performance Scores of the Experimental and Control groups

Groups	N	Mean	S-Dev	Mean Difference
Experimental	59	16.27	4.41	0.36
Control	64	15.91	4.24	

Table 1. Presented the pre-test mean and standard deviation of students' academic performance of experimental and control groups. From the result, there is only a slight difference in the mean performance scores. The experimental group have mean scores of (16.27) while the control group have mean scores of (15.91) and Mean difference of (0.36). This shows that, they have

comparative abilities in terms of academic performance.

Research Question One: What is the difference between the mean Academic Performances scores of students' taught chemistry concepts using Computer-Assisted Instruction and those taught using lecture method?

Table 2. *Post-test Mean Performance Scores of the Experimental and Control groups*

Groups	N	Mean	S-Dev	Mean Difference
Experimental	59	31.55	6.91	9.68
Control	64	21.87	7.84	

Table 2. Presented data on the mean and standard deviation of post-test academic performance scores of students' in experimental and control groups. From the result obtained, there is difference in the mean academic performance scores of experimental and control groups the students' exposed to Computer-Assisted Instruction have mean scores of (31.55) while the students' exposed to Lecture Method have

mean scores of (21.87), and Mean difference of (9.68). This shows that the Computer-Assisted Instruction had higher effect on learning chemistry concepts.

Research Questions two. What is the difference between the motivation level of students' taught Chemistry using Computer-Assisted Instruction and those taught using lecture method?

Table 3. *Mean Rank and Sum of Rank Post-test Motivation Scores of Experimental and Control Groups*

Groups	N	Mean Rank	Sum of Rank	Mean Difference
Experimental	59	80.64	475.52	35.82
Control	64	44.82	286.52	

The result of the U-test presented in Table 3 shows that mean rank of experimental group is (80.64) and the mean rank of control group is (44.82) and mean difference of (35.82). This implies that experimental group taught Chemistry concepts using Computer-Assisted Instruction had higher mean rank scores and higher Motivation level towards learning Chemistry concepts than the control

group taught the same concepts using lecture method.

Testing the Stated Null Hypotheses

The following null hypotheses formulated were tested at 0.05 level of Significance:

HO1: There is no significant difference between the mean academic performance score of students' exposed to Computer-Assisted Instruction and those exposed to Lecture Method when taught chemistry

concepts. The posttest data generated through chemistry performance test (CPT) were subjected to t-test statistic to determine if there is any significant difference between

the students' academic performance of the experimental group and control group. Analysis summary is shown in Table 5.

Table: 4. *t-test Analysis of the Posttest Mean Academic Performance Scores of the Experimental and Control Groups*

Groups	N	X	SD	Df	p- value	Remark
Experimental	59	31.55	6.91	121	0.001	Significant
Control	64	21.87	7.84			

Significant at $\infty P \leq$ less than 0.05; and df = 121

The result of the t-test shown in Table 4 shows that, p- value of (0.001) were observed at df= 121. Since the p-value is less than the alpha value of 0.05, there is significant difference between the two groups in terms of their mean academic performance scores in the Posttest. This indicates that experimental group had higher score than the control group. Therefore, the null hypothesis that stated. There is no significant difference between the mean academic performance score of students' exposed to Computer-Assisted Instruction and those exposed to Lecture Method when taught Chemistry concept is rejected.

HO2 There is no significant difference between the motivations of students exposed to Computer-Assisted Instruction and those exposed to lecture when taught Chemistry concepts.

The Posttest data generated through Students' Motivation level towards Chemistry concepts were subjected to Mann-Witney U-test statistic to determine if there is any significant difference between the motivation level of students exposed to Computer-Assisted Instruction and those exposed to lecture methods. Summary of the analysis is shown in Table 6

Table 5. *U-test Analysis of Posttest Motivation Scores of Experimental and Control Groups*

Groups	N	Mean Rank	Sum of Rank	u-test	p-value	Remark
Experimental	59	80.64	4757.52			
Control	64	44.82	2868.52	788.50	0.001	Significant

Significant difference at $P \leq$ less than 0.05 alpha level

To determine whether Computer-Assisted Instruction or Lecture Method can produce change in students' motivation towards Chemistry concept following the respective treatments, the post-test motivation levels of experimental and control groups were subjected to u-test. The result presented in table 5 shows that Mann-Whitney u-test obtained is (788.50) and p-value of (0.001) is observed. Since the p-value = 0.001 is less than the alpha value = 0.05, there is significant difference in the post-test motivation level between experimental and control groups. Based on this, the null hypothesis which states that, "there is no significant difference between the motivation level of students' exposed to Computer-Assisted Instruction and those exposed to Lecture Methods when taught Chemistry concepts is rejected.

Discussion of the Findings

The finding from Table 2 showed that students in the experimental group had a higher mean performance score (31.55) in chemistry performance test (CPT) than the

control (21.87) counterparts. This result is further confirmed by the finding from table 4, which indicates that the treatment is a significant factor in the performance of chemistry students. Thus implies that students taught using Computer-Assisted Instruction performed better than those taught using lecture method. The findings emanating from this study are in agreement with the findings of Koni, Odegba and Mercy (2019); Lawal, (2022). The finding of this research is also in contrast with the finding of Vanita and Banswal (2016). The trend of higher performance by the treatment Computer-Assisted Instruction (CAI) group could be as a result of Excitement over the new approach of teaching using computer. It could also be as a result of interactive activities provided by Computer-Assisted Instruction (CAI) which helped students' to master the chemistry concepts without much difficulty than the lecture method group.

Findings from table 3 revealed that the students exposed to computer-Assisted Instruction, had more positive motivation

towards learning Chemistry concepts better than those in control group. This was shown by Mean Rank Motivation score of (80.64) for experimental group which was higher than (44.63) for control group. Thus the subjects taught Chemistry concepts using Computer-Assisted Instruction developed high motivations level toward learning Chemistry concepts than those taught using Lecture Method. This finding is in agreement with that of Rogayan, Padrique, and Costales, (2021); Yarhands, Arthur, Kwaku, and Bright (2022) who reported that students' motivation towards learning in senior secondary schools improves when activity based teaching and learning are involve. The increase in motivation level could be as a result of motivational drive of the use of Computer-Assisted Instruction approaches enable student to have time to master what they learnt effectively well. Thus these enhanced learning motivation and increases academic performance.

Conclusion

Based on the findings from this study, conclusion was made:

Computer-Assisted Instruction is an effective teaching method it enhanced students' academic performance and motivation level in learning chemistry concepts

Recommendation

Based on the findings, the following recommendations were made:

The Federal and State Governments should provide conducive learning environment by providing adequate Chemistry classrooms as well as properly equipped Chemistry laboratories, with adequate ICT facilities to enhance the students' acquisition of modern science learning using computer assisted instruction and improve science process skills.

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Integrating Robots in the Management of Large Classes in Nigerian Tertiary Institutions

By

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Abstract

The implementation of the United Nation's policy on Education for All (UNEFA) in Nigeria, the consciousness that a literate population is more productive than an illiterate one and the rapid growth in population have no doubt increased the number of students' enrollment at the tertiary level of Education in Nigeria annually. This has led to the exponential increase in students' population in the Universities, Polytechnics and Colleges of Education. This factor has primarily contributed to large classroom sizes and negatively impacted the quality of education delivered in the Nigerian tertiary institutions. Several methods such as brainstorming, peer/team teaching and co-operative learning have been used to manage large class sizes in Nigerian tertiary institutions. However, these methods are plagued with diverse challenges which include conflict between co-teachers who have opposing opinions on grading or evaluation, group conflict and conflict management. Consequently, this study examines the need for the integration of robotic technology in Nigerian tertiary institutions to manage large classroom sizes. This study includes the types of robotic technology that can be used to solve the challenges of teaching and learning in large classrooms in Nigerian tertiary institutions. The factors that can impede the successful implementation of robotic technology in the management of large class sizes in Nigerian tertiary institutions are also revealed in this study. Furthermore, this study suggests ways in which these challenges can be mitigated. This is with a view to improving the quality of education delivered in Nigerian tertiary institutions.

Keywords: *Education, large class size, Nigerian tertiary institutions, robotic technology*

Introduction

A classroom in clear terms can simply be defined as a room or a physical space in an educational institution which is dedicated primarily for teaching and learning activities. Generally, the total number of learners or students in a classroom at a specific period of time is referred to as class size. Class size as described by Adeyemi (2008) is an educational tool that is used to describe the average number of students participating in a learning experience per class in a school. Classroom size, according to United Nations

Educational, Scientific and Cultural Organization Regional Bureau for Education in Africa (UNESCO) (2009), can be measured by the ratio of the number of students in a classroom to the number of teachers in the classroom. UNESCO (2008) recommended that a standard classroom should consist of twenty five (25) students to one (1) teacher. This is in line with the recommendation of the National Policy on Education (NPE) (2014) which emphasizes that a classroom should be composed of an

average of twenty five (25) students to one teacher. This is however a far cry from what is obtainable in the Nigerian tertiary institutions where there is an exponential increase in the number of students' enrollment annually (Ademola, Ogundipe, & Babatunde, 2014). This has resulted in the increase in the population of students in the Universities, Polytechnics and Colleges of Education. Emphatically, the number of students in Nigerian Universities increased from under fifteen thousand (15,000) in 1970 to over two million and one hundred thousand (2.1 million) in 2021 (Clark, 2020). In addition, the number of Universities in Nigeria rose from six (6) in 1970 to over two hundred and seventy (270) in 2024 (Sasu, 2024). The rapid increase in the number of students' population in Nigerian tertiary institutions can be attributed to the adoption and implementation of the United Nation's policy on Education for All (UNEFA) in Nigeria, the consciousness that a literate population is more productive than an illiterate one, the recognition that tertiary education paves way for global competitiveness and the belief that tertiary education is the hub of nation building, social transformation, national growth and development (Ajayi, Audu & Ajayi, 2017). Consequently, the increase in the number of

students' admitted into these institutions annually has led to an exponential increase in the number of students in the classroom.

The attendant challenges of large class size in Nigerian tertiary institutions include the inability of teachers to give adequate attention to individual learners' needs, ineffective classroom management and students' engagement, overstretched classroom facilities and difficulty in marking large volumes of students' scripts. Undeniably, large classes have also contributed to the decline in the quality of education delivered to students and decay in infrastructural facilities. Nevertheless, several methods such as peer/team teaching and cooperative learning have been deployed by teachers in Nigerian tertiary institutions to ameliorate the challenges confronting large class sizes. However, these strategies are associated with diverse weaknesses which include conflict between teachers who have opposing opinions on grading or evaluation as in the case of peer/team teaching. This clearly explains the need for robotic technology in the management of large classroom sizes in Nigerian tertiary institutions.

In recent times, robots have been increasingly deployed in schools where they have a great potential of being utilized as an educational

technology. The impact of robots as an education technology is crucial for the development and intellectual growth of children and teenagers (Iroju, Olaleke, Afolabi & Idowu, 2021). This is because robots have the ability of repeating concepts taught without getting tired unlike a human teacher who is likely to face this challenge in a classroom with a large class size. This will also increase the retention rate of students and also makes learning simple. In addition, robots have the capability of eradicating the problem of poor teacher-students interactions which is typical of a large class size. Furthermore, some robots have the capability of obtaining relevant information from human beings via their emotions such as body postures, movements, gestures, facial and vocal expressions. This information can be used to determine if the learning needs of individual learners have been met. Despite these potential benefits of robotic technology, the integration of robotic technology in Nigerian tertiary institutions to manage large class sizes is non-existent. Consequently, the adverse effects of large class size have become a perennial challenge in Nigerian tertiary institutions. This study therefore appraises the need for robotic technology as an ultimate solution for large classroom management in Nigerian tertiary

institutions. This is with a view to promoting quality education, which is in line with the requirements of the Sustainable Development Goal (4) which emphasizes that citizens must have access to quality higher education in both developed and developing countries (UNESCO, 2019).

Objectives of the study

The aim of this study is to examine the need for integrating robotic technology in Nigerian tertiary institutions to manage large classroom sizes. The specific objectives of the study are to:

- i. identify the types of robotic technology that can be used to resolve the challenges of teaching and learning in large classrooms in Nigerian tertiary institutions;
- ii. identify how robotic technology can resolve the challenge of large class sizes in Nigerian tertiary institutions;
- iii. investigate the factors that can impede the successful implementation of robotic technology in the management of large class sizes in Nigerian tertiary institutions; and
- iv. suggest ways in which these challenges can be mitigated.

Theoretical Framework

This study is centered on Replacement, Amplification, and Transformation (RAT) framework developed by Hughes, Thomas and Scharber (2006) and Technological Pedagogical Content Knowledge (TPACK) theory propounded by Mishra and Koehler in 2006 (Mishra & Koehler, 2006).

The Replacement, Amplification, and Transformation (RAT) framework developed by Hughes et al. (2006) is used to comprehend the role of technology in teaching, learning and other curricular activities in the classroom. The RAT framework posits that the adoption of technology in the classroom can be categorized into three. These include technology as a replacement, technology as amplification and technology as a transformation (Hughes et al., 2006). Technology as a replacement refers to the use of technology as a digital means to accomplish students' learning processes, content goals and instructional practices. Furthermore, technology as amplification is the use of technology to enhance students' learning processes, content goals and established instructional practices. This is with a view to increasing the efficiency and productivity of the educational processes in an educational institution. Technology as a transformation is the use of technology to

change or transform teaching and learning processes, teachers' roles, the curriculum, peer interaction and collaboration in the classroom.

In linking this theory to this study, it should be understood that technology, such as robotic technology, can be used as a digital medium of achieving instructional practices which include the management of large class sizes. This framework also aids in understanding that robotic technology can be used to facilitate effective teaching and learning in the classroom and transform, renovate as well as restructure the traditional methods used for managing large class sizes in Nigerian tertiary institutions.

The theory of Technological Pedagogical Content Knowledge (TPACK) posits that a teacher must rely on three domains of knowledge for the integration of ICT facilities into the classroom for effective teaching and learning (Luhanya, Bakkabulindi, & Muyinda, 2017). These domains include content knowledge (CK), pedagogical knowledge (PK) and technological knowledge (TK). Mishra and Kohler viewed CK as the actual knowledge of the subject that a teacher teaches in the classroom as well as the knowledge of the technology that the teacher integrates in the classroom for teaching and learning. The

basis of the CK is that a teacher must have a good knowledge of the subject to be taught in the classroom and the teacher must also be familiar with the technology to be used for teaching. Mishra and Koehler reported that PK is the knowledge of the processes or methods that a teacher employs for effective teaching and learning. These processes according to Mishra and Koehler include classroom management, values and aims, lesson plan and student evaluation. TK as defined by Mishra and Koehler is the knowledge of how to operate and effectively use the technology deployed by the teacher in classroom. Mishra and Koehler advocated that the teacher must possess adequate knowledge, skills and technical-know-how of the technological tools used in the classroom. Furthermore, the teachers must be able to use the technology to carry out diverse instructional practices in the classroom. Luhanya et al. (2017) emphasizes that the integration of these three domains is central to effective teaching and learning with technology.

In relating the TK of the TPACK theory to this study, it should be understood that teachers can use different technologies such as robotic technology to carry out different instructional practices such as large

classroom management in an educational institution.

The Need for Integrating Robots in the Management of Large Class Sizes in Nigerian Tertiary Institutions

This section provides a detailed need for robotic technology in the management of large class sizes in Nigerian tertiary institutions.

- a) **Robots do not get tired:** Robots can reduce the stress and fatigue that teachers face when teaching large classes. Typically, in large classes, teachers may have to repeat the same concept several times to reinforce students' comprehension of the concept. Consequently, the teacher is faced with tiredness, stress, fatigue and sicknesses which may impede the quality of the education delivered to students. Nevertheless, robots are mechanical and reprogrammable devices that are capable of repeating themselves several times without getting tired or sick. This will not only relieve the teachers but will also increase the retention/assimilation rate of students, simplify difficult and abstract concept, improve students' skills, increase students' confidence and also strengthen the connections in the brain that enhance students' learning capabilities.

b) Robots provide individualized learning

in the classroom: Robots play diverse roles in the classroom. As a tutor, a robot provides support to a single learner or a group of learners and provides individualized attention to each of the learners in the same way a physical teacher will do in a typical classroom setting. Robots can allow each student in the group to learn at their own pace by displaying patience and rehearsing subjects as long as the physical teacher wishes. Consequently, if robots are integrated into a large classroom setting in the Nigerian tertiary institutions, the overall learning outcome of students will be improved.

c) Robotic technology can be used to mark

large volumes of scripts: Robots can be used to mark large volumes of scripts typical of a large class without making errors. It is easier for robots to mark large

volumes of scripts containing responses to multiple choice questions since they are reprogrammable agents and are also designed to perform repetitive tasks. Robots can be programmed to scan papers and also sum up the marks obtained by each student. In addition, robots can be used to mark essays, stories and narratives. Robots can be trained to score characteristics of marking such as fluency, grammar and construction based on samples of essays, stories or narratives already scored by a human teacher. This technique will eliminate subjectivity during the marking exercise. This technique is also faster than the traditional method of teachers' marking of large volumes of scripts. Figure 1 shows a vivid illustration of a robotic hand marking a student's script.



Figure 1: *A Robotic Hand during A Marking Process (Williams, 2018)*

d) Robots enhance students-teachers

interaction: Some robots have the ability

to engage human beings naturally.

Research has found out that students tend

to bond more with social robots than physical teachers when introduced as a teacher in the day-to-day educational activities of learners (Matthijs, Smakman and Vogt, 2022). This bond as reported by Matthijs et al. (2022) has a positive influence in enabling that students connect and interact more easily with their peers and teachers. Hence, if social robots are integrated into a large classroom setting, the problem of poor teachers-students interactions which is typical of a large class will be eradicated.

- e) **Some Robots are emotionally intelligent:** Some robots are emotionally intelligent. These categories of robots display emotions, respond to human emotions and possess the capability to obtain relevant information from human beings. In a large classroom setting, this information can be used to determine if the learning needs of individual learners have been met, shape instructional practices, and promote students' engagement and motivation. This is because emotions and learning are inseparable as emotions influence cognitive skills, decision making, problem solving and critical thinking.

- f) **Robotic technology can be used to prevent cheating in a large class:** Cheating is very rampant in institutions that are characterized by large number of students and very few invigilators to adequately monitor students during examinations. Robots have been used as invigilators to prevent cheating as well as control the morality and behaviours of the students during assessments (Mubin, Cappuccio, Alnajjar, Ahmad & Shahid, 2020). These technologies can also assist teachers to monitor students' dishonest and disrespectful activities during examinations by recording and transmitting students' information in human-readable format.

Types of Robots that can be Deployed for Managing Large Class Sizes in Nigerian Tertiary Institutions

This section briefly describes the types of robotic technology that can be deployed in Nigerian tertiary institutions to manage large class sizes.

- a) **Kismet:** Kismet is a social robotic head developed by Cynthia Breazeal at the Massachusetts Institute of Technology. Kismet was designed to stimulate and recognize emotions through facial expressions. It also has the ability to recognize tones of voices and movement.

The expressive emotions identified by Kismet signify different emotions ranging from anger, happiness, fear, sadness and excitement. Interestingly, the development of Kismet was inspired by child developmental psychology to elicit a care giving response to children from human adults (Massachusetts Institute of

Technology News, 2001). Kismet can therefore be deployed in large classes in Nigerian Tertiary institutions to recognize the emotions of students and respond to the learning needs of individual learners. Figure 2 illustrates how Kismet elicits and responds to emotions.



Figure 2: *Kismet Eliciting and Responding to Emotions (Beciri, 2009)*

b) Nao Robot: The Nao robot is an autonomous social humanoid robot developed by SoftBank robotics. The Nao robot has two legs and equipped with diverse sensors which gives it the capability to walk, dance, speak as well as recognize faces and objects. Nao has been used in Education to facilitate human-robot interaction, customize teaching activities on either a one-on-one basis or small group in order to meet the individual needs of learners. The Nao robot has also been used to develop positive attitudes and perceptions in students.

c) Robotic invigilator: Robotic invigilator was designed by Yu (2012) to reduce the cost of human invigilators/teachers during examinations. It has the capability to give out examination papers, verify students' identities and prevent examination malpractice. This type of robot is expedient in Nigerian tertiary institutions where examinations and tests are important platforms to test students' academic abilities and professional skills. Figure 3 shows the robotic invigilator with a group of students from Jiangxi University of Science and Technology, Ganzhou, Jiangxi.



Figure 3: *Robotic Invigilator Invigilating a Group of Students (ECNS, 2014)*

d) Pepper robot: Pepper is a humanoid robot that is social and intelligent in nature. It has the capability to recognize human faces, voices and emotions. Pepper has been deployed in the educational sector as teaching assistants and to provide individualized education programmes for students suffering from learning disorders such as autism. Pepper can be used to manage large class size in Nigerian tertiary institutions by helping teachers to recognize students with learning disorders and also providing social and physical activities to help manage the social, communication and psychomotor skills of students. Pepper can also be used to assist teachers to teach students subjects relating to Science, Technology, Engineering and Management (STEM) in a large sized class.

Factors that can Impede the Successful Deployment of Robotic Technology in the Management of Large Classes in Nigerian Tertiary Institutions

The following are some of the factors that can impede the successful deployment of robotic technology in the management of large classes in Nigerian tertiary institutions:

- a) High cost of procurement, installation and maintenance:** One of the challenges that can arise as a result of using robots to mitigate the effects of large classes in Nigerian tertiary institution is the rising cost of procurement, installation, configuration and maintenance of robotic technologies.
- b) Training:** Teachers and students would have to be adequately trained to use robotic technologies in the classroom. Hence, teachers who do not have sufficient training on the use of this

technology may find it difficult to deploy them for managing large sized classes.

- c) **Continuous power supply:** Nigeria as a country is fraught with erratic power supply. However, robotic technology needs continuous power supply to function effectively. The functions of these robotic technologies to manage large class sizes in Nigerian tertiary institutions will become hampered if there is inadequate power supply.
- d) **Reliability:** Robotic technologies are capable of failing at anytime. Hence, the use of robotic technologies to manage large classes cannot be totally relied on.
- e) **Fear of displacement or replacement:** Students may have the feeling that their teachers have been displaced and replaced with robots. This feeling may be naturally disconcerting for students.

The Ways Forward

The following suggestions can be adapted to facilitate the effective use of robots for managing large classes in Nigerian tertiary institutions:

- a) **Capacity building:** Stakeholders in Nigerian tertiary institutions should encourage the use of robotic technology to reduce the challenges of large class sizes by training teachers and students on the skills and knowledge needed to make

full use of robotic systems to combat the effect of large classes.

- b) **Provision of adequate power supply:** The Federal Government of Nigeria should provide stable and constant electricity supply for the uninterrupted functioning of robotic technology in Nigerian tertiary institutions.
- c) **Provision of an electronic legislative framework for Education:** The legislative arm of the Nigerian government should pass a bill that will support the use of robotic technology in tertiary institutions. The government should also provide an enabling environment for the successful implementation, maintenance and sustenance of robotic technology in Nigeria tertiary institutions.
- d) **Provision of robotic technologies and other related ICT tools:** The Nigeria government should provide adequate robotic technologies and other related ICT tools such as computers and internet facilities to manage large class sizes in Nigerian tertiary education.

Conclusion

Large class size is a phenomenon that is widely known in Nigerian tertiary institutions to pose severe challenges to teaching and learning activities. Such challenges caused

by large class size include poor teacher-students communication, reduction in students' participation in the classroom and lack of active learning. Some of the ways the effects of large classes have been alleviated in Nigerian tertiary institutions include team teaching and cooperative learning. Despite these efforts, Nigerian tertiary institutions are still grappling with the consequences

constituted by large class sizes. Accordingly, this study investigated the need for using robotic technology in Nigerian tertiary institutions to promote individualized learning, simplify the teaching and learning of difficult and abstract concepts and enhance student-teacher interaction in large sized classes in Nigerian tertiary institutions.

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Teachers' Perspective on Enhancing Learning Outcomes through Curriculum Localization: A Case Study of Some Selected Primary Schools in Abuja

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Abstract

The study took a cursory look at the concept of localised curriculum and its importance to students learning outcome. It collated the views of teachers and students on their position towards a localised curriculum contents as well as the impact it could have on students learning outcomes. This is because a localised curriculum content makes learning interesting to students because they are can easily familiarise with what is to be taught and link the knowledge with what happens around them. A descriptive survey research design of the expo-facto type was adopted for this study, because the variables under study already exist. "Teachers' View on localised curriculum in Nigeria" (TVLCN) was used for data collection. The paper came up with some relevant recommendations such as, the need for curriculum developers to incorporate Communities, traditional rulers, Civil society organizations (CSOs) maximal contribution to national curriculum development process, implementation and management, as well as working out modalities for considering various ways of localizing school curriculum to completely reflects out cultures, aspirations, and vision as people.

Keywords: *Curriculum localization, learning outcomes*

Introduction

Education is one of the main fundamental surviving tools in a continually evolving world. The quality of life, respect for the rule of law, the respect and protection of human life and rights, and peaceful co-existence among communities and nations are all dependent on the type and quality of education. This is so because when nations seek closer cooperation, growth and development, they turn to education for assistance and for reassurance about what the future holds for her teaming populace. It could then be termed as an instrument of change. While aiming to achieving maximum, effective, sustainable, prosperous,

growth and development, more attention should be towards the foundation of our education system, which are the basic and senior secondary education system. Unfortunately, the challenges of the basic and secondary education curriculum in many developing countries are similar. In Nigeria particularly, the challenges include population upsurge, decreasing supply of education, increasing demand for education, rapid urbanization, change in technology, lack of skills at all levels, low participation of marginalised groups, liberalization and the globalization of work and learning space. The learning pace in this context has a

relationship with how curriculum for instruction is developed, its level of localization and the consequent implication on students learning outcomes.

In Nigeria, because education is directly linked to national development. Some key economic development plans such as the National Economic Empowerment and Development Strategy (NEEDS) of 2004; Nigeria's Vision 20:2020 (2009); the Economic Recovery and Growth Plan (2017 - 2020) revised for (2021 – 2025); and the National Development Plan (2021-2025) recognise the important role of education in developing the essential human capital base required for building a globally competitive economy, and all-round development of the nation. NEEDS, expressly recognised education as an instrument per excellent for value re-orientation, poverty reduction, wealth generation and job creation to be actualized through appropriate and functional curriculum, especially at the basic and senior secondary school (SSS) levels.

The question then is how well is the curriculum developed in order to position itself to achieve all the expectations in the outlined in the key economic development plans of Nigeria? How localized are the curriculum to garner the inputs of all relevant stakeholders to enhance learning outcomes?

To answer these questions, the concept of Curriculum development, its importance as well as the benefits should first be considered.

What is Curriculum Localization and why is it Important?

Curriculum embodies the intentions of education, it is the Programme of education, curriculum carries the beliefs, values, attitudes, skills, knowledge and all that education is about (Mulenga and Mukaba 2018). It is at the heart of student's school learning experience. It is fundamental to impactful teaching and learning for helping learners' make progress in life. Because of its importance, it should be reviewed and revised on a regular basis so that it is able to be in tandem with the changing needs of both students and society. A good curriculum should include a full range of skills and competencies that are relevant throughout the life span of every human person. A wide view of competencies which we may term as 'capacities' such as good communication skills, civic participation, living in harmony, respecting and caring for other people, taking care of one's health and well-being are some of the content areas that a curriculum should also include (Reid, 2007). Mulenga and Mukaba 2018, therefore asserts that curriculum is all the selected, organized,

integrative, innovative and evaluative educational experiences provided to learners consciously or unconsciously under the school authority in order to achieve the designated learning outcomes which are achieved as a result of growth, maturation and learning meant to be best utilized for life in a changing society.

Curriculum development has several benefits. Which are beyond helping the designing or redesigning of specific subjects teaching and instructions for better learning implementation. It also sets forward a clear purpose and goals, improves the quality of lessons, and helps in the delivery of effective teaching and learning. It also helps to in appropriate selection and organization of learning experiences. It plays vital role in improving the country's economy by providing solutions to pressing conditions and problems. Carefully chosen curricula reflect the culture and priorities of the communities, states, and countries that surround them (Cirik, 2014). Therefore, there is need for regular discussions around curriculum so as to create opportunities for all stakeholders involved in education to express their opinion on the direction of learning that meets the current needs of the students and the societies.

What then constitutes curriculum localization?

Curriculum localization is the process of defining parts or components of the curriculum at community/local or school level, it entails the involvement of local staff, stakeholders and institutions to address issues that are locally relevant and allow for more meaningful learning experiences (Mulla, Somayeh, Adib & Youssef 2017). Localization helps in the dissemination, adaptation and growth of the paradigm of knowledge, technology, behavioral norms, cultural and local values in a specific situation and a response to the phenomenon of globalization. The location-based curriculum designing investigates how local region capacities and resources are used as the motivator and source of inspiration of curriculum development. It helps in making meaningful learning experiences more enriched in the subjects and individuals in their local region with details experiences of the local cultural norms and identity.

In the localized curriculum, elements are organized on the basis of local cultural identities and activities are predicted to realize these goals. Localization” of curriculum gives freedom for schools or local education authorities to adapt curriculum to local conditions and relating the content of

the curriculum and the processes of teaching and learning to the local environment. Mulla et al, (2017), Tulgar (2018) maintained that the localization of curricula helps students' academic progress and interaction with teachers' when coordinated with the mother tongue and intercultural interactions to preserve learners' local culture. Ali Ismail (2016) believed that culture-based education promotes and improves learning and develops students' cultural perspective. Ali Ismail (2016) further maintained that the system of adapting the program of education for students in local condition often help students' outcomes in many ways because of its flexibility and easy understanding. This is because it brought to bear what students are already used to within their locality to deliver instruction. For instance, the cultural and socio-economic realities of local population are taking into consideration when designing educational content because local community members; teachers, parents and other stakeholders are part of the curriculum development process. The instructional materials used in delivering these contents are also considered to be more of improvisation from what is available within the respective communities which learners can easily identify with.

Localization of Nigerian Curriculum

There have been several attempts to localize the curriculum of Nigeria. This include but not limited to the engagement of local stakeholders in curriculum development processes and the already existing localization contents where it places emphasis on the need for improvise locally made instructional learning materials from within the communities in situation where the real material is not available. The localization idea becomes more possible if teachers as one of the major stakeholders of curriculum, development and implementation are well informed with what is required and how it will be implemented for up-scaling learning outcomes. Mulla et al, (2017) therefore asserts that ultimately in implementing the curriculum, its focus and benefits should be well managed, monitored and tailored toward achieving desired learning outcomes. This was corroborated by Tulgar (2018) who opined that local curriculum has to be unique and responsive to the priorities, preferences, and issues of the community and its people. This was not different from the opinion of while Demir and Yurdakul (2015) who stated that culture-based programs reduced racial and cultural prejudices. Spindler (1987) as corroborated by Tulger (2018) stated that, teaching and learning are cultural processes that occur in the social context. Therefore, in

order to provide maximum qualitative education to various students, their culture must clearly be understood (Banks & Banks, 2005).

A localised curriculum should be flexible, the design should include what works and improving learning for all students, it might be difficult to find what works best straight away, or for all the learners, whereas the understanding that it's a journey, means we can continue to challenge and evaluate our ideas, systems, and processes as we move forward in the part of achieving learning-outcome-centered curriculum. For the successful implementation of a localized curriculum, it is important to know and detailed the views of teachers regarding the focus required for localization of Curriculum as well as the likely benefits of an enhanced learning outcome through the development and localization of the Curriculum. This is because Curriculum requires the participation of all influential forces in various stages of decision making, among which are teachers, due their familiarity with the students' issues and needs. This is important because there are lots of effects of non-local curriculum content on students learning experience and outcomes which can only be addressed if teachers are largely part of localized curriculum contents'

development process. Therefore, statement of the problem of a non-localised curriculum include:

1. Students struggled to easily familiarize with a non-local curriculum content,
2. Teacher has to use more time to explain many concepts that looks foreign to students understanding,
3. Students easily loose interest when learning becomes too unfamiliar to what they can easily relate with within their context or the environment

Objective of the Study

The objectives of the study are to specifically determine;

1. Teachers' view on the effect of non-local content on students.
2. Teachers' view on the effect of non-local content on teachers.
3. Teachers view on the impact that localization of curriculum could have on students.

Research Questions

The study seeks to answer to the following research questions;

1. What is teachers' view on the effect of non-local content on students?
2. What is teachers' view on the effect of non-local content on teachers?

3. What is teachers' view on the impact that localization of curriculum could have on students?

Methodology

The descriptive survey of an ex-post facto research design was adopted, because the variables under study already exist. It involves collection of data in order to answer the research questions raised in the study. Simple random sampling was adopted for selection of 20 secondary schools which represent approximately 10% of secondary schools in FCT, Abuja. 6 teachers in each of the samples schools were selected randomly to respond to the questionnaire. To ensure that the sample to a high degree represent the target population, the balloting techniques was adopted to obtain the sampled teachers. The instrument for the study was a questionnaire named "Teachers' View on localised curriculum in Nigeria" (TVLCN). The questionnaire was divided into 4 sections (A, B, C and D). Section A, was on

Results Presentation

Demographic information of the respondents, Section B, contained 3 questions about teachers' views on the effect of non-local content on students, Section C contains 3 questions about teachers' views on the effect of non-local content on teachers, section D, contained 3 questions about the teachers' views on the impact of localized curriculum on students. The data obtained were analyzed using Crombach Alpha and reliability coefficient of 0.79 was obtained for Teachers' View on localised curriculum in Nigeria.

Method of Data Collections and Analysis

The researchers administered and collected the instruments, out of 120 questionnaires sent out for the study, only 80 were retrieved and were used for the analysis. In analyzing the data collected, frequency and simple percentage were used. Below 40% was the cut-off for acceptance /rejection tested variables.

Table: 1: What are teachers' views on the effect of non-local content on students?

S/N	Statements	SA	A	D	SD
1	Lack of Motivation: Students lack motivation to learn concepts completely unrelated to their local culture.	29 (36%)	23 (29%)	18 (22%)	10 (13%)
2	Dropout: The ratio of elementary school dropout is related to inability of students to link contents with native experiences.	38 (48%)	28 (35%)	10 (13%)	4 (5%)
3	Superficial Learning: The knowledge students learn is superficial as it does not link them to their previous learning.	33 (41%)	27 (34%)	15 (19%)	5 (6%)

Table 1: Shows that 29 teachers which constitute 36% strongly agree with statement 1 that non localised curriculum could cause lack of motivation among learners since the contents are not related to their local culture, 23 teachers which constitute 29% of the sampled teacher also agree with this statement, while 18 teachers which constitute 22% Disagree and 10 teachers which constitute 13% also strongly disagree with statement 1. On statement 2, 38 teachers which constitute 48% strongly agree with statement 2 that the ratio of elementary drop out has a relationship with inability of students to link contents with native

experience, 28 teachers which constitute 35% of the sampled teacher also agree with this statement, while 10 teachers which constitute 13% Disagree and 4 teachers which constitute 5% also strongly disagree with statement 2. On statement 3, 33 teachers which constitute 41% strongly agree with statement 3 that learning seems superficial to learners since it does not link them to their previous knowledge, 27 teachers which constitute 34% of the sampled teacher also agree with this statement, while 15 teachers which constitute 19% Disagree and 5 teachers which constitute 6% also strongly disagree with statement 3.

Table 2: What are teachers' views on the effect of non-local content on teachers?

S/N	Statements	SA	A	D	SD
4	Inefficient Teaching: Inefficient teaching of the non-local current content.	38 (48%)	28 (35%)	10 (13%)	4 (5%)
5	Communication Disorder: Communication between teacher and student is one-way; however, communication is bilateral when local examples are used	33 (41%)	27 (34%)	15 (19%)	5 (6%)
6	Difficulty in Lesson delivery: Content of the book, seems difficult to relate with and therefore difficult to deliver in class.	29 (36%)	23 (29%)	18 (22%)	10 (13%)

Table 2: Shows that 38 teachers which constitute 48% strongly agree with statement 4 that teachers could be in-efficient in teaching the non-localised curriculum contents, 28 teachers which constitute 35% of the sampled teacher also agree with this statement, while 10 teachers which constitute 13% Disagree and 4 teachers which

constitute 5% also strongly disagree with statement 4. On statement 5, 33 teachers which constitute 41% strongly agree with statement 5 that Communication between teacher and student is one-way as compared to bilateral communication when local examples are used, 27 teachers which constitute 34% of the sampled teacher also

agree with this statement, while 15 teachers which constitute 19% Disagree and 5 teachers which constitute 6% also strongly disagree with statement 5. On statement 6, 29 teachers which constitute 36% strongly agree that in delivery a non localised content, lesson delivery becomes difficult because

content are not easily related with local environments. 23 teachers which constitute 29% of the sampled teacher also agree with this statement, while 18 teachers which constitute 22% Disagree and 10 teachers which constitute 13% also strongly disagree with statement 6.

Table 3: What are teachers' views on the impact of that localization of curriculum could have on students

S/N	Statements	SA	A	D	SD
7	Preserving Students' Local Culture: Students are very interested in their customs and traditions and localised curriculum helps to preserve it.	33 (41%)	27 (34%)	15 (19%)	5 (6%)
8	Motivation for Learning: Content related to the context of students' life enhances their motivation to learn.	33 (41%)	27 (34%)	15 (19%)	5 (6%)
9	Attraction and Retention in the Classroom and School: Localization of curricula helps students' attraction and retention at school.	38 (48%)	28 (35%)	10 (13%)	4 (5%)

Table 3: Shows that 33 teachers which constitute 41% strongly agree with statement 7 that a localised curriculum will help preserving students local custom and culture and as that increases the interest students to learn them , 27 teachers which constitute 34% of the sampled teacher also agree with this statement, while 15 teachers which constitute 19% Disagree and 5 teachers which constitute 6% also strongly disagree with statement 7. On statement 8, 33 teachers which constitute 41% strongly agree with statement that localised contents related to the context of students' life and experiences enhances their motivation to learn and therefore increases learning outcomes in

them. 27 teachers which constitute 34% of the sampled teacher also agree with this statement, while 15 teachers which constitute 19% Disagree and 5 teachers which constitute 6% also strongly disagree with statement 8. On statement 9, 38 teachers which constitute 48% strongly agree with the statement that localization of curricula helps students' attraction and retention at school which then in turn increases their leaning outcomes, 28 teachers which constitute 35% of the sampled teacher also agree with this statement, while 10 teachers which constitute 13% Disagree and 4 teachers which constitute 5% also strongly disagree with statement 9.

Summary of the Findings

The analysis showed various far reaching discovery from the data gathered, when data gathered on teachers view about the effect and impact of a localised curriculum on the learners, learning outcomes as well as on teachers in terms of delivery, higher percentages of teachers believed that a localised curriculum has all it takes to be child friendly in terms of delivery, because it is easier for the learners to relate with, easy for teachers to deliver effectively by using examples that learners are familiar with, these reasons cumulatively leads to learners improved learning outcomes as compared to a non-localised curriculum. This is in tandem with Ali Ismail (2016) view that culture-based education promotes and improves learning and develops students' cultural perspective. The study therefore generally shows that a localised curriculum has lots of impact on learners' outcomes and it is believed by the majority of the sampled teachers that it helps in preserving local cultures, motivate the learners and as well as improve learners' retention in schools.

Summary, Conclusion and Recommendations

There is no doubt that the Nigerian basic and senior secondary education curricula are designed primarily to address the economic

and developmental aspirations of the Nigerian nation. It also embedded the benefits of global best practices which addressed amongst other things like issues of value re-orientation, poverty eradication, critical thinking, and entrepreneurship and life skills. There is no doubt that the contents of these curricula are rich in terms of coverage but no matter how rich a curriculum is, effective implementation of the curriculum remain a key component of the curriculum processes. It is therefore important to note that when implementation is mentioned, Teachers as a major stakeholder in the implementation has lots of contribution to made for a successful curriculum implementation, their views, opinions and contribution will help to achieve a successful curriculum implantation cycle only if their vies and opinions are factored into the curriculum development process. It is therefore, instructive to note that when teachers unanimously agreed that a localised curriculum is ideal and that it could improve leaners retention and learning outcomes, this should be looked into when curriculum review process is to be carried out. Based on these findings and conclusion, the following recommendations are made.

1. Curriculum developers should make sure that Communities, traditional rulers,

- Civil society organizations (CSOs) contribute maximally to national curriculum development process, implementation and management
2. Curriculum developers should encourage principals, teachers and the communities to contribute to curriculum development process by making inputs to what they want their students/children to learn
 3. Curriculum developers should create a means by which learners plays active role in curriculum development processes
 4. Curriculum developers should encourage inclusiveness and personalized learning in taking into account the students' aspirations, interests, identity, language, and culture
 5. Curriculum developers should work out modalities for considering various ways of localization of school curriculum so that it completely reflects out cultures, aspirations, and vision as people.

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Elements and Strategies for Administering Development Education in Contemporary Nigerian Society

By

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Abstract

The article critically examines the essential elements and strategic approaches needed to effectively administer development education in Nigeria. Although development education is crucial for promoting socio-economic growth and sustainable development, it has not been fully utilized due to fragmented efforts and poor integration into the education system. The study focuses on important components like curriculum design, teacher training, and community engagement, emphasizing the need for a cohesive strategy that aligns with Nigeria's developmental goals. Despite its potential, the implementation of development education is hindered by a lack of coordination, weak policy support, and limited awareness among stakeholders. To address this, the article calls for a comprehensive approach that integrates development education at all levels of the educational system. It advocates for a redefined framework that includes strong policy development, stakeholder collaboration, and innovative teaching methods. The article concludes with five recommendations to enhance development education in Nigeria.

Keywords: *Development Education, Core Elements, Strategic Approaches*

Introduction

The article discusses the significant expansion of education over the years, with increased participation and attainment levels. Education plays a crucial role in shaping societies by developing the knowledge, skills, attitudes, and values necessary for social cohesion, competent workforces, and active citizenship. Buchanan and Varadharajan (2018) argue that education is essential in addressing inequalities and injustices related to global rights and responsibilities. The quality of education is key to a nation's development, as highlighted by Aliyu (2020, 2021). Ibrahim (2022)

further emphasizes that the gap between developed and underdeveloped nations is linked to the quality of education they provide. The article also points out the disconnection between various global issues such as economic growth, limited resources, wealth disparities, and governance as well as the role education can play in addressing these challenges. While education alone is not responsible for these divides, the impact of knowledge, skills, attitudes, and values in overcoming them should not be underestimated.

Concept of Development Education

Development education is a polymorphous concept that lacks a universally accepted definition, as scholars and non-scholars have described it differently over time. However, this paper does not focus on the varied definitions but instead highlights the essential aspects of development education and its practical application to individuals and society for local, national, and global development. According to the Irish Development Education Association (IDEA), development education helps people understand and act to transform the social, cultural, political, and economic structures affecting their lives at multiple levels, from personal to global.

Regan, cited in Dillon (2016), describes development education as a response to issues like development, human rights, justice, and global citizenship. It promotes international perspectives and gives voice to those excluded from the benefits of human development. The process aims to raise awareness of the rapidly changing, interdependent, and unequal world, encouraging reflection and action for local and global citizenship.

Development education fosters a deeper understanding of global diversity and inequality, identifying the causes and

solutions to such issues. It focuses on global relations and inequalities, not just in developing countries. This educational approach allows people to link development issues in Nigeria with those around the world, reflecting on their roles in addressing equality and justice in human development, ultimately shaping a new narrative for human progress.

Situational Analysis of Core Elements for Administering Development Education in Nigeria

The following are core elements as regards to administering development education in Nigeria;

1. Curriculum Design: Development education in Nigeria is often marginalized within the broader educational curriculum. The current curriculum lacks a comprehensive focus on the principles of development education, which includes critical thinking, sustainability, and global citizenship. Existing content is outdated and fails to address the contemporary challenges facing Nigerian society, such as poverty alleviation, environmental sustainability, and social equity (Odukoya, 2018; Ige, 2019).

2. Teacher Training: Teachers in Nigeria are inadequately prepared to deliver development education. Most teacher training programs do not include specific

modules on development education, leaving educators ill-equipped to integrate these concepts into their teaching. This results in a gap between the curriculum's goals and the actual classroom delivery, further exacerbating the marginalization of development education (Ogunyemi, 2020; Adebayo & Olanrewaju, 2021).

3. Community Engagement: Development education requires active community involvement to be effective. However, in Nigeria, there is a disconnect between educational institutions and the communities they serve. Community engagement is often limited to superficial activities, lacking meaningful participation that could reinforce the principles of development education. This gap hinders the practical application of development concepts in real-world settings (Eze, 2017; Olaniyan, 2019).

Aspects of Development Education to be Administered in Contemporary Nigerian Society

The researcher emphasizes that development education involves understanding global issues, poverty, and wealth (cultural, historical), recognizing the causes of injustice, and using this knowledge for informed action. When applying development education to Nigeria and African contexts, Bourn (2015) advises considering the specific national, social,

political, educational, and cultural factors. Development education is not static but evolves based on different contexts and needs. It should be seen as a learning process rather than a fixed concept, with varying starting points for educators' understanding of development. These aspects are crucial for implementing development education in contemporary Nigerian society.

1. Poverty Alleviation Poverty alleviation is a global challenge that involves reducing or eliminating poverty and improving living conditions. Effective strategies require a multifaceted approach, including economic development, social welfare programs, and education. Among these, development education plays a crucial role by addressing the root causes of poverty. It equips individuals and communities with the knowledge, skills, and values needed for sustainable development.

Development education raises awareness of global issues such as poverty and inequality, fostering critical thinking and promoting global citizenship. It empowers individuals to participate in their communities and advocate for policies that contribute to poverty alleviation. By understanding the interconnectedness of global challenges,

learners can grasp how poverty affects access to education, healthcare, and economic opportunities (Bourn, 2015).

Development education helps individuals comprehend the structural causes of poverty, such as unequal resource distribution and lack of access to quality education. This understanding is vital for creating effective poverty alleviation strategies that address these root issues. It also promotes global responsibility and solidarity, encouraging support for initiatives that reduce poverty locally and globally (Scheunpflug & Asbrand, 2006).

By integrating development education into poverty alleviation efforts, communities can create long-term, sustainable solutions that empower people to break the cycle of poverty, rather than just providing immediate relief (Pike, 2008).

2. Access to Basic Education:

Absenteeism and lack of access to basic education are major issues hindering human capital development in Nigeria and many African countries. The widespread and unpredictable absenteeism of education service providers significantly contributes to low educational outcomes. Absenteeism is a key indicator of whether students' educational needs are being met (Shute &

Cooper, 2015). Regular school attendance is crucial for students' future success, as it helps them develop work-related skills like persistence, problem-solving, and teamwork (Sahin, Arseven & Kihc, 2016; Kearney & Graczyk, 2014; Strand & Granlund, 2014). In contrast, students who frequently miss school tend to perform worse academically, have limited employment opportunities, and face social and emotional challenges in adulthood (Buscha & Conte, 2014; Thornton, Darmody & McCoy, 2013).

This prevalence of absenteeism is more common in poorer countries, negatively impacting economic development. Investments in education, particularly in addressing absenteeism and lack of access to basic education, are vital for human capital improvement and overall national development. Cost-effective and dynamic solutions to these issues can significantly foster progress in Nigeria.

3. Educational Gender Gap: The gender gap in Nigeria's education sector is a significant problem that hinders human capital development, which is crucial for national progress. Beyond its intrinsic injustice, this gap reduces the effectiveness of education as a key driver of development. Euphrates, cited in Bello

(2019), emphasized that failing to provide quality education at the right time and environment is a lost opportunity. Farah, cited in Bello and Ibrahim (2022), highlighted that 18.5 million children in Nigeria are out of school, and 60% of them—over 10 million—are girls, with the majority from northern Nigeria.

Addressing this gender gap is critical for development education in Nigeria, as it reflects broader issues of unequal resource distribution, particularly in education. The gender disparity in schooling is a major concern for human capital investment, which is essential for sustainable development (Oluwatobi & Ogunrinola, 2011). Closing this gap should be a priority to ensure equitable opportunities and enhance national progress.

4. Sustainable Development: Sustainable development, as defined by the United Nations (Artur, 2016), is development that meets present needs without compromising the ability of future generations to meet theirs. Education for Sustainable Development (ESD) involves processes, pedagogies, and practices that prepare education systems to address the evolving challenges of sustainability (Archana, 2017). This approach requires an interdisciplinary

understanding and shifts in attitudes towards sustainable development.

Nwokeocha (2021) notes that from 2000 to 2015, global efforts aimed to achieve the Education for All (EFA) targets and Millennium Development Goals (MDGs). However, Advocate for International Development (2022) argues that Nigeria's focus on increasing access to education, as seen during the MDGs era, often neglects the need for investment in learning materials, teachers, and infrastructure. Without these, increasing enrollment can result in overcrowded classrooms, under-resourced schools, and overburdened teachers, undermining education quality

Development education emphasizes investing in these critical areas to build human capital, which is vital for sustainable development. By ensuring adequate resources are provided to support increased enrollment, development education helps create an equitable educational system that contributes to poverty alleviation and social equity (Bourn, 2015; Oluwatobi & Ogunrinola, 2011).

5. Social Equalities: Education's unique potential to reduce inequalities and build strong foundations for inclusive and democratic societies is widely recognized. It is acknowledged that

education can amplify inequality when educational opportunities are not fairly distributed within societies. According to Alexander (2016), inequality is intrinsically linked with poverty, and as such it has been a key issue in development education. The unequal distribution of income is an issue that is greatly emotive. Evidence shows that education contributes to the transmission of advantages and privileges from one generation to the other.

However, in Nigeria, upward social mobility has become more difficult to achieve, and the fear of downward social mobility is becoming more common in the middle classes. Large parts of the population seem to have lost faith in the present administration and its promises of which public education is a key component. In this context, trust in school systems falters and young people from vulnerable backgrounds may no longer invest their time and energy into schooling. Beyond education, people who have lost trust in the present system of governance are at risk of becoming defiant towards the “system”, embracing populism and turning away from democracy.

6. Digital Transformation: Digital transformation refers to the integration of digital technologies into various aspects

of society, including education, to improve processes, enhance learning experiences, and expand access to knowledge. In context of development education, digital transformation offers significant opportunities to advance its goals by providing new platforms for learning, fostering global interconnectedness, and facilitating access to resources that support critical thinking and global citizenship.

One of the key aspects of digital transformation in development education is the use of Digital platforms and tools expand the reach of development education, making it more inclusive by overcoming geographical barriers. E-learning allows students in remote areas to access resources, engage in interactive learning, and connect globally, enhancing their understanding of global issues and fostering global citizenship (Selwyn, 2017). Additionally, digital transformation helps develop critical digital literacy skills, which are essential in today’s world. These skills include analyzing information, understanding digital media, and participating in digital communities, preparing learners to critically engage with global issues and contribute to sustainable development (Helsper & Eynon, 2010).

However, the digital divide remains a challenge, especially in developing countries like Nigeria, where inadequate infrastructure, limited internet access, and lack of digital skills hinder the benefits of digital transformation. Addressing this requires investments in digital infrastructure, teacher training, and policies that promote equitable access to digital technologies (James, 2011; Unwin, 2017).

Embracing digital transformation makes development education more dynamic, interactive, and accessible. This transformation aligns with development education's goals by fostering critical thinking, promoting global citizenship, and supporting a more just and sustainable world.

Strategies for Enhancing Effective Administration of Aspects of Development Education in Contemporary Nigeria Society

Having highlighted the aspects of development education to be administered in contemporary Nigeria society. Selwyn (2017) enumerated the following as the strategies for enhancing effective administration of aspects of development education in contemporary Nigeria society.

- 1. Improve the understanding of human learning:** Mobilizing research knowledge is essential for informing

educational policies and practices that are responsive to the evolving needs of learners and society. In the context of development education in Nigeria, utilizing research-based insights can help design curricula that are more relevant to contemporary global issues, such as poverty, inequality, and environmental sustainability. It can also guide the development of teaching methods that foster critical thinking, creativity, and problem-solving skills, which are crucial for empowering students to participate actively in their communities and in the global arena (OECD, 2015; Hargreaves & Fullan, 2012).

A major barrier to improving education in Nigeria is the lack of incentives for educators to engage in the creation, use, and sharing of knowledge about their professional practice. Many educators are not encouraged or supported to contribute to research or adopt innovative teaching practices, limiting the spread of effective methods and hindering the quality of education (Hargreaves & Fullan, 2012). Without mechanisms to promote knowledge sharing, the impact of educational investments is reduced, resulting in less productive learning experiences and outcomes.

To improve development education in Nigeria, it is essential to create an environment that supports educators in engaging with research and innovation. This can be achieved by offering professional development opportunities, recognizing innovative teaching practices, and establishing platforms for educators to exchange ideas and best practices. By fostering this supportive environment, Nigeria's education system can better use research to enhance educational outcomes and contribute to sustainable development goals (OECD, 2015).

2. Go beyond formal education: it emphasizes the necessity of expanding educational experiences beyond the traditional classroom setting to include informal and non-formal learning opportunities. This approach is particularly crucial for development education, which aims to equip individuals with the skills, knowledge, and values needed to address global challenges such as poverty, inequality, and environmental sustainability. Going beyond formal education involves incorporating a variety of learning contexts, including community-based education, experiential learning, online platforms, and lifelong learning

initiatives. These diverse learning environments allow individuals to gain practical skills, engage with real-world issues, and develop critical thinking abilities that are essential for effective participation in societal development. For instance, non-formal education programs in Nigeria, such as vocational training and adult education, can provide essential skills that formal education might not cover, thus complementing and enriching the educational landscape (Colardyn & Bjornavold, 2004).

For development education in Nigeria, going beyond formal education can enhance its impact by making learning more relevant, accessible, and inclusive. By integrating non-formal and informal education approaches, development education can reach a broader audience, including those who are outside the formal education system, such as marginalized communities, out-of-school youth, and adults. This inclusivity is vital for fostering a more equitable society, as it ensures that everyone has the opportunity to engage with and contribute to sustainable development (Rogers, 2004).

3. Widen the concept of equity and inclusion in education: underscores the importance of ensuring that all individuals, regardless of their

background, have equal access to quality education and the opportunity to participate fully in the learning process. In the context of development education, this expanded focus on equity and inclusion is crucial for addressing the diverse needs of learners and for fostering a more just and sustainable society. Equity in education goes beyond simply providing access to schooling; it involves creating a learning environment where all students have the resources and support they need to succeed, regardless of socio-economic status, gender, disability, ethnicity, or geographic location. Inclusion ensures that all learners, particularly those from marginalized or disadvantaged groups, are fully integrated into the educational system and can participate meaningfully in the learning process (Ainscow, 2020).

By widening the concept of equity and inclusion, development education can better address the specific barriers that prevent certain groups from accessing quality education. For example, in Nigeria, challenges such as poverty, gender discrimination, and cultural biases often limit the educational opportunities available to girls, children with disabilities, and those from rural areas. Addressing these issues

requires a holistic approach that includes targeted policies, inclusive curricula, and supportive learning environments that cater to the needs of all learners (UNESCO, 2017). Incorporating a broader understanding of equity and inclusion into development education can significantly enhance its impact in Nigeria. Development education aims to equip learners with the knowledge, skills, and values necessary to address global challenges such as poverty, inequality, and environmental degradation. To achieve these goals, it is essential that education systems are designed to be inclusive and equitable, ensuring that all individuals have the opportunity to engage with and contribute to sustainable development (Bourn, 2015).

A more inclusive approach to development education can help reduce disparities in educational outcomes by providing marginalized groups with the support they need to thrive. This can include implementing flexible learning pathways, offering scholarships and financial aid, and creating accessible learning materials. By doing so, development education can empower all learners to participate actively in their communities and in global initiatives, thereby fostering a more inclusive and equitable society (Ainscow, 2020).

4. Improving cost-efficiency in education: The budgetary challenges that countries face today will not go away. Public expenses in education and other domains are fuelled by increasing levels of public debt, which tax future generations will carry. Demographic shifts will push governments to spend more on health, ageing and welfare. Challenges related to climate change will require higher levels of public spending as well. Pressures to increase value-for-money and cost efficiency in education are likely to mount, and education systems need to find ways to respond. Most states in Nigeria have increased their educational expenditure significantly over the past 4 years without, in most cases, any perceivable improvement in commonly measured outcomes. Whereas other public policy domains have increased productivity mostly through the targeted use of technology, the technology-driven increase in educational productivity has yet to materialize. The experiments in using technology during the pandemic should feed into reflections on how to change this.

Development education inherently focuses on sustainable practices, and improving cost-

efficiency aligns with this goal by promoting the sustainable use of educational resources. For example, adopting digital learning tools can reduce the need for physical materials, lowering costs and minimizing the environmental footprint of educational programs. Additionally, by making the education system more resilient and adaptable, cost-efficiency helps ensure that development education can continue to thrive even in times of economic or financial crisis (Pérez-Esparrells & Agasisti, 2013).

Improving cost-efficiency in education is vital for enhancing development education, particularly in resource-constrained environments like Nigeria. By maximizing the use of available resources, increasing access, enhancing quality, supporting sustainability, and facilitating long-term planning, cost-efficient education systems can more effectively prepare learners to tackle the pressing global issues that development education aims to address.

5. Focus on innovation of education: Innovation in education allows curricula and teaching methods to adapt to the rapidly changing global landscape. Development education focuses on issues such as climate change, social justice, and economic inequality, which are constantly evolving. By incorporating

innovative approaches, educators can ensure that content remains relevant and up-to-date, preparing learners to engage with contemporary global challenges (Anderson & Shattuck, 2012). For example, integrating real-time data analysis, case studies from around the world, and current events into the curriculum helps students understand the dynamic nature of global issues.

When education systems face increased pressure, they often revert to traditional methods, limiting opportunities for experimentation and innovation. This regression is driven by uncertainty about the benefits of reforms, concerns over costs, and fears of losing existing advantages. Even minor reforms can require significant resource reallocations and impact many lives. Despite these challenges, the case for innovation in education is strong. Increasingly, education systems are setting national guidelines while allowing local institutions more freedom to adapt, fostering greater innovation in improving outcomes, cost-efficiency, and equity.

Emphasizing innovation in education is crucial for advancing development education. It helps address global challenges by engaging students more effectively, expanding access, promoting critical thinking

and creativity, supporting lifelong learning, and encouraging collaboration. Innovative practices ensure that development education remains relevant, impactful, and accessible, better preparing students to tackle complex global issues.

Conclusion

Development education is pivotal for equipping individuals with the knowledge, skills, and values necessary to tackle global challenges and contribute to sustainable development. The discussions above highlight several critical aspects that enhance its effectiveness and impact such as Cost-Efficiency, Innovation, Equity and Inclusion, Research and Evidence-Based Practices.

However, to optimize development education, it is essential to focus on cost-efficiency, embrace innovation, prioritize equity and inclusion, and utilize research-based practices. These elements work together to create a more inclusive, engaging, and effective educational environment that empowers individuals to actively participate in addressing global issues and contributing to a sustainable future. By addressing these critical areas, development education can significantly enhance its impact and effectiveness in preparing learners for the challenges of the 21st century.

Recommendations

1. Strengthen Curriculum Design and

Relevance: Revise and update the development education curriculum to ensure it addresses current global and local issues, incorporates interdisciplinary approaches, and reflects the needs and contexts of Nigerian society. Engage stakeholders, including educators, students, and community leaders, in the curriculum development process.

2. Enhance Teacher Training and

Professional Development: Invest in comprehensive training programs for educators that focus on development education methodologies, innovative teaching practices, and strategies for engaging students in global issues. Provide ongoing professional development opportunities to keep teachers updated with the latest educational trends and research. Well-trained teachers are crucial for delivering effective development education. Continuous professional development will help educators implement modern teaching practices and effectively convey complex development concepts.

3. Promote Community Engagement and

Partnerships: Foster partnerships between educational institutions, government agencies, non-governmental organizations (NGOs), and community groups to support

and enhance development education initiatives. Encourage community involvement in educational activities and decision-making processes. Collaboration with various stakeholders can provide additional resources, support, and real-world perspectives, enriching development education and ensuring it is grounded in the community's context and needs.

4. Leverage Technology and Innovation:

Integrate technology and innovative tools into development education to enhance learning experiences, increase accessibility, and improve educational outcomes. This includes using digital platforms for remote learning, interactive resources, and multimedia content. Technology can expand the reach of development education, make learning more engaging, and provide learners with access to a wealth of resources and global perspectives that are essential for understanding and addressing development issues.

5. Implement Monitoring and Evaluation

Mechanisms: Develop and implement robust monitoring and evaluation (M&E) systems to assess the effectiveness and impact of development education programs. Use data and feedback to continually improve educational strategies, address challenges, and ensure that programs meet

their intended goals. Effective M&E is essential for understanding the success of development education initiatives,

identifying areas for improvement, and making data-driven decisions that enhance the quality and impact of education.

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Managing Secondary Schools for Effective Quality Service Delivery in the 21st Century: Challenges and the Way Forward

By

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Abstract

The study examined the challenges and the better ways of managing secondary schools for effective quality service delivery in the 21st century. Two research questions and one hypothesis guided the study. The study adopted the descriptive survey design. The population comprised 268 principals with a sample size of 180 principals representing 67% of the principals drawn from public secondary schools in Rivers State, Nigeria. A self-structured instrument titled Managing Secondary Schools for Effective Quality Service Delivery Questionnaire (MSSEQSDQ) was used to collect data. The reliability coefficient of the instrument using test re-test method was 0.96. Mean and standard deviation were used to analyze the research questions while z-test statistics was used to test the hypothesis. Findings of the study revealed that unqualified and untrained teachers, lack of motivation, politicizing of education and poor funding amongst others are the challenges; while political stability, adequate funding, proper planning and implementation of policies amongst others are ways of improving the management of public secondary schools for effective quality service delivery. Some of the recommendations made were that the government should adequately fund the educational sector and also deregulate education for secondary schools for effective quality service delivery in the 21st century.

Keywords: *Managing secondary schools, quality, service delivery*

Introduction

Education can be viewed as a process of assisting the individual to attain the fullest life he is capable of living. Basic education comprises formal, non-formal and informal education aimed at eliciting all round development of the human potentials. In the education industry, quality must be built in its operation in order to enable the system to achieve the desired goals. Government recognizes education as the greatest investment that the nation can make to bring about civilization, modernization (FRN,

2014). Education is also regarded as instrument par excellence and the means of achieving human capital and national development. This emphasizes the importance set on the attributes and worth which surrounds quality learning, capacity development for teachers, instructional process, resource inputs, effective management, monitoring and evaluation, and quality learning outcomes in secondary schools. Hence, Obanya (2000) stated that ignorance can be eliminated through

education, leadership and productivity skills which are necessary for quality living and are being achieved for future productivity. The educational enterprise has to do with the gradual growth of human intelligence, character and effective citizenship and technical training. For the purpose of better delivery of quality education at the secondary level or any other level for that matter, the application and management of a system that has quality becomes essential in achieving an education sector with high standard.

The day-to-day management and administration of secondary schools in Nigeria is the responsibility of the principal, otherwise known as 'the School Administrator'. In the principal's daily routine as the school administrator, he performs several functions. Nakpodia (2017) and Peretomode (2019) summarized these functions into seven broad categories of administrative task areas which include pupil personnel, staff personnel, community-school relationship, instruction and curriculum development, school finance and business management, school plant and general tasks. The principal's functions/responsibilities to the students, staff, community-school relationship, his functions/responsibilities in the area of instruction and curriculum development, school finance and business management, his functions in the maintenance of school plant and other general

tasks. For the principal to succeed in managing the secondary school system for effective service delivery in the 21st century, he must have the basic technical, human and cognitive skills required to accomplish the school's goals and objectives.

The education sector in Nigeria is changing on a daily basis and it is geared towards achieving specific goals like the Education for All (EFA, 2015) and the Nigeria vision by 2020. The different education goals will not be achieved if the process of teaching and learning is not advanced by school principals in implementing performance-based management. Growing the nation's economy revolves around secondary education since they are the engine room that provides input resources into the nation's economy and higher education production systems. When education at the secondary school level is well managed and it functions well, its products will move to the tertiary institutions and others who cannot move to the tertiary institutions will also be useful and productive in the society. It is of uttermost importance therefore to continually assess the secondary school level, especially the teachers whose roles are of critical importance to students' learning and performance. The standard of the school can be checked through assessments with which decisions about teachers and their performance can be made. Again, these teachers' qualities also give

students the confidence to compete amongst themselves, to take on difficult tasks so as to discover and develop their real mettle as thinkers.

Quality is of utmost importance in the school system and it is the means through which educational standards can be improved upon; and they are serious challenges facing any educational institution. Quality education has its significant impact and invaluable contributions to manpower development and it is considered in terms of exceptionally high standards, consistency, fitness for purpose, value for money (accountability) and transformative effects (Atanda in Atanda & Adeniran, 2020). According to Okenjom, Akoloh, Ikuriti, & Ihekoronye, (2017), quality in education is a multidimensional concept which should embrace all functions and activities, teaching and academic programmes, research and scholarship, staffing, students, buildings, facilities, equipment, services to the community and academic environment. Quality is also defined as a grade of goodness, excellence, or degrees (especially high degrees) of goodness or worth (Onuma & Okpalanze, 2017). Ajayi and Adegbesan in Okwuba and Umezinwa (2018) described quality as the totality of the performance of a process, product or service in customer or client's perception. Quality education has its significant impact and

invaluable contributions to manpower development hence students have the right to quality education (Eziamaka, Manafa & Iheanacho, 2022).

The service delivery in the educational sector requires essential quality human and material resources with adequate and sustained quality assurance measures in order to live up to expectations. The expansion and upgrading of facilities and equipment to enhance the capacity utilization of information communication technology (ICT) need not be over emphasized. Quality education provides students with the needed knowledge, skills, attitudes and creativity for problem solving both locally and globally and to actively contribute to the societies' sustainable and democratic development. In the school system quality service delivery refers to the various ways and manners in which teachers perform their assigned responsibilities so as to provide excellent services capable of meeting or exceeding the expectations of all stakeholders in the school. Teachers` provide services in the school to direct students in achieving goals that includes directives, students management, discipline, keeping of records, preparation of lesson plan and lesson notes, administration of examination, classroom management, and other responsibilities assigned to them. Service is a product or an activity that meets the needs of a user or can be applied by a user.

The continuous cyclic process for developing and delivering user- focused services is also known as service delivery. Effective delivery of quality service involves providing effectual and well organized products and services that bring about utility to users and customers. They are part of the basic building blocks in an educational institution or any other institution for that matter. The success of education is contingent on what happens in classrooms (Asiyai in Kejeh, Nwaogazie & Samuel, 2022).

Effective quality service delivery is focused on issues of standards and quality assurance; the degree of effectiveness of the product which aims at increasing productivity. This emphasizes the need for the attainment of excellence in educational activities. The school system has five qualities, which are service to the community/academic environment and research and academic activities, highly trained staff, visionary leadership and adequate funding (Odigwe, 2019). There are other indicators for delivering quality service in schools. They include provision of adequate instructional materials, adequate staffing, accommodation and equipment, provision of adequate information communication technology (ICT) in the library, co-curricular activities, provision of scholarship facilities, population (enrolment of students), uniform input and

output evaluation procedures, adequate management of infrastructure and management of funds (Ukoh & Oboshi, 2016). These are all needed to ensure a well-rounded complete that will guarantee the education production of quality students from the secondary schools as enshrined in the National Policy on Education (FRN, 2014) which stated that the main aims of secondary education in Nigeria are the preparation of students for living useful lives in the society, preparation of students for higher education. Specifically, the school at the secondary level tends towards opportunities and future roles, serving differences in talents, provide trained manpower in the applied sciences, technology and commerce at sub-professional grades; develop and promote Nigerian languages, art and culture in the context of world's cultural heritage, inspire students with a desire for self-improvement and achievement of excellence, foster national unity with an emphasis on the common ties that unite us in our diversity, raise a generation of people who can think for themselves, respect the views and feelings of others, respect the dignity of labour, appreciate those values specified under our broad national goals and live as good citizens and provide technical knowledge and vocational skills necessary for agricultural, industrial, commercial and economic

development (FRN, 2014). The aims and objectives make it clear that the ultimate goal of secondary education is to develop the individual's mental capacity and character for higher education and useful living within the society since the future of any nation depends quite considerably on the quality of education it provides for its citizens. The realization of these objectives hinges on quality of teachers, infrastructure and learning environment, resource inputs, teaching process, classroom management, academic assessment, principals' supervisory roles and students' commitment to learning. In spite of the societal demand for quality assurance education and the need for thorough supervision in schools, there is a growing concern about the realization of secondary education objectives. The societal quest for quality teaching which is a vital aspect of quality education is imperative because of the emergence of new information technologies, the evolution of the global digital economy and the global competition for technically skilled workers creates a national urgency to improve the educational system. This is an issue of preeminent national importance that must serve as guide post to principals and teachers, so as to effectively prepare all students to be contributing citizens and productive workers in the 21st century (CEO Forum, 2001).

Achieving quality service delivery in the management of secondary schools is not an easy task as it is faced with diverse challenges. Available literature as noted by Eziokwu and Amah (2019) revealed that a number of factors hinder effective quality service delivery in the management of secondary schools in Nigeria. These include inadequate funding, poor policy implementation, lack of motivation, unqualified and untrained teachers, poor supervision, inadequate provision of facilities, enforcement of the compulsory nature of the scheme, politicization of the education sector, and having total control over the education sector.

Babalola in Nyime-Oluka, Nwogu and Moses-Promise (2019) pointed out some challenges that can hinder effective service delivery to include lack of qualified and trained personnel, shortage of manpower, lack of adequate statistical compilation in the school system, inadequate funds to procure facilities, inadequate facilities for the inspectors, non-implementation/ inadequate implementation of educational changes, lack of cooperative attitude by some principals, political instability and frequent policy change. Nyime-Oluka, Nwogu and Moses-Promise (2019) posited that even though there could be some short comings on the part of the government, there are actually set

backs on the part of other parties because they fail to carry out their duties, which can hinder the execution of educational changes for quality education delivery.

Poor funding of the programme by the government, students are crowded in a particular class because of lack of classrooms, poor educational facilities, computers, textbook and instructional materials. The policies and curriculum designed at all level is often associated with some bureaucracy in its implementation. Poor policy implementation can hinder effective quality service delivery if there are inconsistencies, misalignment with objectives, resource mismanagement, lack of accountability, negative impact on service users and so on (Drucker, 2008). There is a high degree of pressure on school heads to raise funds for their schools to be fully functional (Garira, 2017). Teachers' salaries and other fringe benefits are not being paid as at when due including promotions not being released and retirement benefits of teachers not being paid promptly. This situation have made the teaching profession non attractive and have a negative multiplier effect on the students and the end result of such situation is to have half-baked products that will not be useful to themselves and the society at large (Aiya, 2014).

The ways in which quality service delivery in managing secondary education can be achieved are through adequate funding of the education sector, proper policy planning and implementation, adequate provision of infrastructures to accommodate all admitted students, recruitment of qualified and experienced teachers, proper supervision of academic activities, political stability in the education sector, continuous evaluation of both teachers and principals, provision of adequate instructional aids, deregulating the education sector and making available development programmes for teachers. Maiyashi (2003) agreed that good education funding is necessary for economic growth and suggested that the government should let people realize that it cannot do it alone. Maiyashi further submitted that the government has not performed up to expectation in terms of funding education in Nigeria, since the federal government has not allocated up to 17% of its annual budget in any given year. The author advised that the government should create awareness and avenues for communities to assist in financing education, noting that African citizens must continue to demand education as a right from their government. According to him, education must be well funded if we want economic growth and quality assurance and this will be easy if deregulation of

funding secondary education is put in place. Moses-Promise and Ahiakwo (2017) posited that for secondary schools to be adequately organized, they should be properly funded through the assistance of NGOS since the government cannot do it all by itself.

Statement of the Problem

Education cannot function adequately without certain qualitative and quantitative service delivery practices put in place in the day-to-day running of the school system. Despite successive governments claiming to have invested heavily in education, many public secondary schools still have dilapidated in Nigeria. This is because of the indifferent attitude on the part of the government. Even when contracts are awarded for building new structures or renovating of old dilapidated structures, greed and corruption on the part of contractors make them deliver inferior facilities that will not stand the test of time. Also, the school administrators, teaching staff and students' deficiency in managing available school facilities, all amount to inadequate facilities in the school setting. Again, politics in education as it concerns employing untrained teachers, not giving adequate discipline to erring teachers when the need arises amongst others are all impediments in managing secondary education. Considering these observations, this study examines the

challenges and ways of improving the management of public schools.

Research Questions

- 1) What are the challenges for managing public secondary schools for effective quality service delivery in Rivers State?
2. What are the ways to improve the management of public secondary schools for effective quality service delivery in Rivers State?

Hypothesis

- 1) There is no significant difference between the mean rating of male and female principals regarding the challenges of managing public secondary schools and the ways to improve management for effective quality service delivery in Rivers State.

Purpose of the Study

This study was carried out to:

- 1) Ascertain the challenges of managing public secondary schools for effective quality service delivery in Rivers State.
- 2) Determine the ways to improve the management of public secondary schools for effective quality service delivery in Rivers State.

Methodology

The design for the study was the descriptive survey. This is considered to be appropriate because the study aimed at collecting data and describing them in the way it appears, that is the features of facts of a given population. The

population of the study comprised all the principals from the 268 public secondary schools in Rivers State. Using the stratified random sampling technique, a sample of 180 principals was drawn representing 67% of the 268 principals in Rivers State public schools. A 4-point instrument designed after a modified likert scale model, titled, “Managing Secondary Schools for Effective Quality Service Delivery Questionnaire (MSSEQSDQ) was used for data collection.

Using the test re-test method and Pearson product moment correlation coefficient (PPMCC) a reliability index of 0.96 was obtained. Mean and standard deviation were used to analyze the research questions while z-test statistics was used to test the hypotheses at 0.05 alpha level.

Research Question 1: What are the challenges for managing public secondary schools for effective quality service delivery in Rivers State?

Table 1: Mean scores of male and female principals on the challenges of managing public secondary schools for effective quality service delivery in Rivers State

S/N	Items	Male			Female			Rank	Remark	
		N	\bar{X}	SD	N	\bar{Y}	SD			$\bar{X} + \bar{Y}$
1	Unqualified and untrained teachers	80	3.29	0.13	100	3.20	0.15	3.25	1 st	Agreed
2	Lack of motivation	80	3.28	0.12	100	3.17	0.14	3.23	2 nd	Agreed
3	Politicizing the education Sector	80	3.09	0.16	100	3.01	0.08	3.05	3 rd	Agreed
4	Inadequate funding of the education sector	80	2.79	0.24	100	3.10	0.12	2.95	4 th	Agreed
5	Poor supervision and follow up	80	3.04	0.14	100	2.65	0.03	2.80	5 th	Agreed
6	Poor policy Implementation	80	3.24	0.11	100	2.25	0.16	2.75	6 th	Agreed
7	Enforcement of the compulsory nature of the scheme	80	2.46	0.15	100	3.00	0.08	2.73	7 th	Agreed
8	Inadequate provision of Facilities	80	2.44	0.15	100	2.99	0.08	2.72	8 th	Agreed
9	Inadequate staff development programmes	80	3.04	0.06	100	2.03	0.23	2.54	9 th	Agreed
10	Having total control over the education sector	80	2.45	0.15	100	2.00	0.25	2.23	10 th	Disagreed
Aggregate Mean			2.91			2.74				

The result as revealed in Table 1 indicated that respondents agreed to the fact that the challenges for managing public secondary schools for effective quality service delivery in Rivers State are having unqualified and untrained teachers with mean score of 3.25 for both male and female principals, lack of motivation with mean score of 3.23 for both male and female principals, politicizing the education sector with mean score of 3.05 for both male and

female principals, inadequate funding of the education sector with mean score of 2.95 for both male and female principals, poor supervision and follow up with mean score of 2.80 for both male and female principals, amongst other identified challenges.

Research Question 2: What are the ways to improve the management of public secondary schools for effective quality service delivery in Rivers State?

Table 2: Mean Scores of Male and Female Principals on the ways of improving management of public secondary schools for effective quality service delivery in public secondary schools in Rivers State

S/N	Items	Male			Female			Rank	Remark	
		N	\bar{X}	SD	N	\bar{Y}	SD			$\bar{X} + \bar{Y}$
11	Political stability in the education sector	80	3.70	0.20	100	3.62	0.12	3.66	1st	Agreed
12	Adequate funding of the education sector	80	3.59	0.16	100	3.62	0.34	3.61	2nd	Agreed
13	Proper policy Planning and implementation	80	3.46	0.11	100	3.46	0.05	3.46	3rd	Agreed
14	Adequate provision of infrastructures to accommodate all admitted students	80	3.21	0.03	100	3.53	0.07	3.37	4th	Agreed
15	Recruitment of adequate number of qualified and experienced teachers	80	3.18	0.02	100	3.51	0.06	3.35	5th	Agreed
16	Proper supervision of instruction and other academic activities	80	3.14	2.11	100	3.24	0.02	3.19	6th	Agreed
17	Adequate provision of instructional aids	80	3.45	0.11	100	2.50	0.30	2.98	7th	Agreed
18	Making available staff development programmes for teachers	80	2.34	0.24	100	3.50	0.06	2.92	8th	Agreed
19	Continuous evaluation of both teachers and principals	80	2.80	0.11	100	3.00	0.10	2.90	9th	Agreed
20	Deregulating the education sector	80	2.37	0.24	100	2.98	0.11	2.68	10th	Agreed
Aggregate Mean			3.12			3.30				

The result as revealed in Table 2 indicated that respondents agreed to the fact that the

ways for improving the management of secondary school quality for effective service

delivery to be political stability in the education sector with mean score of 3.66 for male and female principals, adequate funding of the education sector with mean score of 3.61 for male and female principals, proper policy planning and implementation with mean score of 3.46 for male and female

principals, adequate provision of infrastructures to accommodate all admitted students with mean score of 3.37 for male and female principals, recruitment of qualified and experienced teachers with mean score of 3.35 for male and female principals, amongst other ways of improving management.

Testing of Hypothesis

Table 3: z-test Results on the difference between the mean scores of male and female principals on the challenges for managing public secondary schools for effective quality service delivery in Rivers State.

S/N	Gender	N	Mean	SD	DF	z-cal	z-tab	Remark
21	Male	80	2.91	0.82	178	0.50	1.96	Fail to Reject
22	Female	100	2.74	1.32				

Table 3 shows the result of the statistical significant test on the responses of male and female principals on the challenges for managing public secondary schools for effective quality service delivery in Rivers State. From the table, since the Z-cal value of 0.50 is less than the Z- crit.

value of 1.96, there is no statistical significant difference between the opinion of both male and female principals on challenges for managing public secondary schools for effective quality service delivery in Rivers State.

Table 4: z-test Results on the ways to improve the management of public secondary schools for effective quality service delivery in public secondary schools in Rivers State

S/N	Gender	N	Mean	SD	DF	z-cal	z-tab	Remark
23	Male	80	3.12	3.33	178	0.26	1.96	Fail to Reject
24	Female	100	3.30	1.23				

Table 4 shows the result of the statistical significant test on the responses of male and female students on the ways for improving the management of public secondary schools

for effective quality service delivery in public secondary schools in Rivers State. From the table, since the Z-cal value of 0.26 is less than the Z-crit. value of 1.96, there is no statistical significant difference between the opinion of

male and female principals on the ways for improving the management of public secondary schools for effective quality service delivery in public secondary schools in Rivers State.

Discussion of the Findings

The findings revealed that respondents agreed to the fact that the challenges for managing public secondary schools for effective quality service delivery are having unqualified and untrained teachers, lack of motivation, politicizing the education, inadequate funding of the education sector, poor supervision and follow up, poor policy implementation, enforcement of the compulsory nature of the scheme, inadequate provision of facilities and they also disagreed to having total control over the education sector as the challenges of managing school quality for effective service delivery in the 21st century. There was no significant difference between opinion of both male and female principals on the challenges for managing public secondary schools for effective quality service delivery in Rivers State. In agreement with the above, CEO Forum (2001) posited that these are issues of preeminent national importance that must serve as guide post to principals and teachers, so as to effectively prepare all

students to be contributing citizens and productive workers in the 21st century (CEO Forum, 2001). In support, Nyime- Oluka, Nwogu and Moses-Promise (2019) posited that even though there could be some short comings on the part of the government, there are actually set backs on the part of other parties because they fail to carry out their duties, which can hinder the execution of educational changes for quality education delivery.

The findings of this study revealed that the ways for improving the management of public secondary schools for effective quality service delivery in public secondary schools to be political stability in the education sector, adequate funding of the education sector, proper policy planning and implementation, adequate provision of infrastructures to accommodate all admitted students, recruitment of qualified and experienced teachers, proper supervision of academic activities, adequate provision of instructional aids, making available staff development programmes for teachers, continuous evaluation of both teachers and principals and deregulating the education sector. There is also no statistical significant difference between the opinion of male and female principals on the ways for improving the management of public secondary schools for effective quality service delivery

in public secondary schools in Rivers State. In agreement with this, Maiyashi (2003) agreed that good education funding is necessary for economic growth and suggested that the government should let people realize that it cannot do it alone. In line with this, Moses-Promise and Ahiakwo (2017) posited that for secondary education to be adequately organized, it should be properly funded through the assistance of NGOS since the government cannot do it all by itself.

Conclusion

The study concluded that the government, school administrators, teachers and other education stakeholders have a role to play in attaining quality secondary education. In other

words, the necessary strategies should be employed so as to attain effective service delivery in secondary schools in this 21st century.

Recommendations

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

1. The government should deregulate the education sector completely as this will pave way for adequate funding of the education sector.
2. School administrators should also play their roles as administrators by following up their teachers and students.
3. Politics in the education sector should be at its minimal as it is one of the ways to attain quality in secondary education.

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Jigsaw Learning Model as Determinant of Academic Performance between Public and Private Schools Geography Students in Map work In Wamakko, Sokoto State

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Abstract

The study examined Jigsaw Learning Model as Determinant of Academic Performance between Public and Private Schools Geography Students in Map work In Wamakko, Sokoto State. To conduct the study, two objectives were stated and transformed into research questions and hypotheses to be responded to and tested respectively. Quasi-experimental design involving pre-test/post-test experimental group was adopted for the study. 614 senior secondary two (SSII) students comprised the population for the study, and the sample size for the study took cognizance of 100 SS II geography students drawn from two selected co-schools (public and private). The instruments used for data collection were Students' Map Reading Objective Test (SMROT), and Students' Map Reading Practical Test (SMRPT). A reliability coefficient of 0.822 was determined from the response of the sampled students. Mean and standard deviation were used to respond to all the research questions raised and t-test for independent sample statistic was used to test the null hypotheses stated at 0.05 level of significance. Findings from the study revealed that: there is a significant difference in the post-test performance mean scores of the public and private school students in Wamakko, sokoto state, this implies that students in private school performed significantly better than their counterpart in the public school; p-value $0.0002 < 0.05$. Based on these findings, it was recommended that Jigsaw learning model should be used as alternative strategy to improve the teaching of map reading in geography at senior secondary schools in Sokoto.

Keywords: *Jigsaw learning model*, determinant, academic performance, school type, map work

Introduction

The enterprise of education is as old as mankind, and it is important for passing down culture, knowledge, and social values to every generation. In accordance with the National Policy on Education of the Federal Republic of Nigeria (FRN, 2013), investing in education is the best way for the country to quickly develop its human, political, and economic resources. For an individual to

adapt to the changing needs of the society, he or she needs quality education which is obtainable in various subjects and courses taught in schools. These courses cut across a range of disciplines in which Geography as one of the disciplines play a vital role in making an individual an existing part of the society. Geography as a subject enlighten students about the earth in its totality. The

subject studies the physical features of the earth and its atmosphere, and of human activity as it is affected by certain factors including the distribution of population, resources, political and economic activities (Edward 2014).

Geography studies both physical and human or cultural features on the earth. These features are depicted, expressed and illustrated most of the times in maps, diagrams, graphs and figures (Ulebor 2014). Fairgrieve (2014) believes that Ninety percent (90%) of all geographic information can be put on the map. Since maps are vital in the hands of the geographers, its reading and interpretation is also vital and paramount. Map making, reading and interpretation are therefore an important branch of geography that students and young learners should not avoid. It is a crucial aspect of the study of Geography, especially at the secondary school level. Amosun (2014) asserted that map reading and interpretation is an important aspect in the secondary school geography curriculum in Nigeria. This area occupies a major place in the final examination. It attracts more marks than any other area in geography examination, as such, teachers are expected to teach this aspect diligently.

Despite the valuable opportunities geography and map work in particular offer in our daily

life, available literatures show that fewer students enroll for it as against the large number of students who opt for other social subjects such as economics, government, accounting, and marketing at the secondary school level. This low enrolment according to Edward (2014) is also evident at the University and College levels of Education. Several factors have been reported in literatures to be responsible for this low enrolment in geography amongst which are wide coverage of the subject (scope), difficult topics, lack or insufficient instructional materials (Aso, 2018). Similarly, Haliru (2022) posited that inadequate qualified Geography teachers, the use of unsuitable methods of teaching, insufficient time allocated to geography on the school timetable and lack of interest on the part of the students are factors responsible for low enrolment, which is also corroborated by Mansarray, (2022).

In a bid to cover the geography syllabus, with the wide scope of the subject coupled with insufficient time allocated to the subject on the time table, most of the Geography teachers opt for conventional lecture method. This method of teaching do not bring about active interaction among the teacher, students and the materials to be learnt. The resultant effects resort to poor knowledge and

understanding of what has been taught which eventually transcends to poor performance in termly or external examinations. To curb this reoccurring poor performance of students in map reading, studies suggest the use of active learning strategies where the students get involved in the learning process and not just mere listeners, as such, the idea of Jigsaw learning model, an off-shoot of the cooperative and active learning approach is believed to be a way forward.

Johnson, Johnson and Stanne (2010) identified that the Jigsaw learning model derived its name from the jigsaw puzzle as it involves putting the parts of an assignment together to form a whole picture of the assignment which is similar to the jigsaw puzzle. The assignment is divided into parts and the class is also divided into the same number of groups as that of the assignment. Each of these group is given a different topic and allowed to learn about it. These groups are shuffled to form new groups consisting of members from each group (Gupta 2021). For example, an in-class assignment is divided into topics, and students are then split into groups with one member assigned to each topic.

There are many benefits to using the jigsaw model in one's classroom. For starters, in most instances, students who take ownership

in their learning will better understand the material. As active learners, students are directly immersed in the information and material, which promotes a deeper understanding of that material. When students are given the opportunity to contribute to a group, they also learn life skills such as communication and working within a timeline. This method also promotes collaboration and discussion, as well as self-motivated learning strategies. Students who work together learn to ask questions to clarify their understanding and provide critical feedback in appropriate manners. In addition, the jigsaw model in education effectively produces academic gains in problem solving, analyzing and attempting practical skills.

On school type and academic performance, Considine and Zappala (2022) quoted that students' learning outcome and educational performance are strongly linked to standard and type of educational institutions in which they attend. The educational environment students attend sets the parameters for subsequent learning outcome. Before Nigeria gained its independence in 1960, research by Adeyemi (2024) revealed that there were a number of private schools and few, if any, government-established educational institutions. However, because of these private schools' shortcomings, the

government accelerated the takeover of private schools from their original owners following the civil war in 1970, and also opened new public schools; like the establishment of Federal Unity Schools across regions, to regulate educational standards and to foster national unity (Kalagbor, 2016). The difficulties facing Nigeria's planners and policy makers in the field of education are how to raise the standard of instruction and academic accomplishment in her educational institutions (Nwajagu, 2022).

There is a perception that education is not treated in public schools with the seriousness it merits. The widespread apathy of the people towards public institutions is evident here. Because of this, a lot of educators in public schools, have a negligent attitude and have this belief that a brilliant student will have good grades on their own regardless of the input of the teacher (Adeyemi, 2024). Creation of numerous private schools has made it easier for people to choose the schools that their wards would attend, however, because of the expensive nature of private education and the state's support for free secondary education, poor families that want high quality education for their children but occasionally cannot afford the high

tuition costs of private schools find themselves in a challenging position.

Private schools today are more likely to offer cutting-edge tools like computers and interactive (white) boards, and to hire graduate teachers who can manage the new facilities. Parents would be happy to pay the high fees in consideration of these facilities, raising the expense of education (Nwajagu, 2022). Students' effort in exams determines their academic performance, and the type of school a student is enrolled in has a huge impact on his academic success (Adeyemi, 2024). This study therefore seeks to ascertain the level of geography students' academic performance in map work, using the jigsaw learning model, based on public and private school.

Statement of the Problem

Despite the importance of map work skills in geography, students in Wamakko, Sokoto State, continue to perform poorly in this area, with many struggling to demonstrate a clear understanding of spatial relationships, geographic concepts, and critical thinking skills. This persistent weakness in map work skills not only hinders students' academic progress in geography but also limits their ability to navigate and interact with their physical environment effectively, draw the map outline to scale correctly, calculate

actual distances on the map by a given scale, and insert features inside a reduced map. If this problem continues amongst the students, it will lead to having poorly equipped cartographers, geologists, weather forecasters, astronomers, remote sensing users and even shallow knowledge teachers in the nearest future. An ideal teaching and learning of map work in Geography encompasses good learning school environment, appropriate instructional materials, presence of map room, and the use of active learning strategies as method of teaching among others. But the situation seems different with the current state of teaching and learning despite improvement in research. A reconnaissance study conducted by the researcher shows that the learning environment seems uncondusive, absence or poorly equipped map rooms, teachers do not utilize available instructional materials and also do not apply the active learning approach to teach Geography, specifically, map reading and interpretation.

Furthermore, the ineffective teaching methods and lack of innovative learning strategies in many schools exacerbate this problem, leading to a persistent achievement gap in map reading and interpretation. While some studies suggest that the jigsaw learning strategy has been effective in improving

academic performance in other subjects, its impact on map work skills in geography education remains unclear, particularly in the context of Wamakko, Sokoto State. This knowledge gap highlights the need for a comprehensive investigation into the effectiveness of the jigsaw learning model in improving map work skills among geography students in both public and private schools in Wamakko, Sokoto State

Objectives of the Study

The objective of the study is to examine Jigsaw learning model as determinant of Academic performance in map work among Geography Students in Public and Private Schools in Wamakko, Sokoto State. Similarly, other objectives of the study are:

1. To determine the pre-test performance mean score of geography students in map work
2. To find out the post-test performance mean score between public and private school geography students in map work.

Research Question

The following research questions guided the study:

1. What is pre-test performance mean score of geography students in map work?
2. What is the post-test performance mean score between public and private school geography students in map work?

Hypotheses

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

1. There is no significant difference in the pre-test map work performance mean score of geography students in private and public schools.
2. There is no significant difference in the post-test map work performance mean score of geography students in private and public schools.

Methodology

The study adopted the quasi-experimental research design to ascertain the effects of jigsaw cooperative learning model on the performance of geography students in map work. The targeted population for the study were the entire 614 senior secondary two (SSII) students who are offering geography as a subject. Data obtained from Sokoto state Ministry of Education (2024) reveals that there are a total of 28 secondary schools secondary schools in Wamakko local government area of the state (19 private and 9 public secondary schools). The sample for the study consisted a total of 100 senior secondary two (SS II) geography students drawn out from two co-educational (public and private) secondary schools in Wamakko Local Government of Sokoto state. The

simple random probability sampling was adopted for the study. The researcher used two instruments for data collection in the study. These instruments were Students' Map Reading Objective Test (SMROT), and Students' Map Reading Practical Test (SMRPT). Three experts were contacted to validate the two instruments (SMROT and SMRPT). One from Geography Education Unit, the second from Test and Measurement Unit of the University of Jos, and the third was a seasoned geography teacher from any of the secondary schools in the study area. The content validity was done by an expert in Geography Education, while the face validity of the instrument was done by the expert in Test and measurement. The instruments were trial tested using a separate sample size from a different population which had same characteristics with the population of the study. After collecting data from the trial test, the reliability coefficient of SMROT and SMRPT was computed using Cronbach's coefficient alpha method on the SPSS Software Version 23. The reliability coefficient of 0.822 was determined from the response of the sampled students. The researcher used descriptive statistics to answer all the research questions. All the Hypotheses were tested using Students' t-test for independent or unrelated samples.

Result and Discussion

Research Question One: What is the pre-test performance mean score of geography students in map work?

Table 1: Pre-test map work performance mean score of public and private school students.

<i>Group</i>	<i>School type</i>	<i>N</i>	<i>Mean</i>	<i>Std. Dev.</i>	<i>mean diff</i>
Experimental Group	Private	50	45.7	3.02	2.2
	Public	50	43.5	3.63	

Research question one examined the pre-test map reading performance mean scores of public and private school students in the experimental group of secondary school students. The table presents the performance mean scores gained by both school type in the study. The result shows that the students in public school had a mean score of 43.5, while

the students in private school had a mean score of 45.7 at the pre-test level, with a mean difference of 2.2.

Research Question Two: What is the post-test performance mean score between public and private school geography students in map work?

Table 2: Post-test map reading performance mean scores of private and public school students in the experimental group.

<i>Group</i>	<i>School type</i>	<i>N</i>	<i>Mean</i>	<i>Std. Dev.</i>	<i>mean diff</i>
Experimental Group	Private	50	49.6	8.29	18.4
	Public	50	31.2	3.97	

Research question two examined the pre-test map reading performance mean scores of boys and girls in the experimental group of secondary school students. The table presents the performance mean scores gained by both school type in the study. The result shows that the private school students had a mean score of 49.6, while the public school

students had a mean score of 31.2 at the post-test level, with a mean difference of 18.4.

Hypothesis One: There is no significant difference in the pre-test map reading performance mean scores of public and private school students in the experimental group of secondary school students.

Table 3: t-test analysis of significant difference between the pre-test performances of public and private school students in the experimental group.

<i>Group</i>	<i>School Type</i>	<i>N</i>	<i>X</i>	<i>t-cal</i>	<i>α</i>	<i>Df</i>	<i>p-value</i>	<i>Decision</i>
Experimental	Public	50	43.5	2.93	0.05	98	0.21	Accepted.
	Private	50	45.7					

The calculated t-test in table 10 reflects 2.93 at $\alpha= 0.05$ with $df= 98$, while the p-value (probability level) = 0.21. Since the p-value is greater than the level of significance, it then signifies that there was no significant difference in the pretest map reading performance mean scores between public and private school students in the experimental

group. Therefore, the conclusion is that the null hypothesis is upheld.

Hypothesis Two: There is no significant difference in the post-test map reading performance mean scores of private and public school students in the experimental group of secondary school students.

Table 4: t-test analysis of significant difference between the post-test performances of private and public school students in the experimental group.

<i>Group</i>	<i>School Type</i>	<i>N</i>	<i>X</i>	<i>t-cal</i>	<i>α</i>	<i>Df</i>	<i>p-value</i>	<i>Decision</i>
Experimental	Private	50	49.6	3.66	0.05	98	0.0002	Rejected
	Public	50	31.2					

In table 5, the calculated t-test as 3.66 at $\alpha= 0.05$ with $df= 98$ while the p-value (probability level) = 0.002. Since the p-value is less than the level of significance, it then implies that there was a significant difference in the posttest map reading performance mean scores of the experimental between public and private school students. Therefore, the conclusion is that the null hypothesis is rejected and the alternative is upheld.

between public and private schools geography students in map work in Wamakko, Sokoto state. The study was prompted by the prevalence of poor academic performance of Senior Secondary School Geography students in Map work, as well as the observed poor quality of teaching at this level particularly as it affects the teaching of Map work in Geography in Public and private schools. Similar studies conducted by Ezinwa-Nebife (2018) and Fariha (2021) determined the effects of Jigsaw learning strategy on Geography students' academic achievement in map work in Abia and

Discussion of the Findings

This study examined Jigsaw learning model as determinant of academic performance

Nassarawa respectively. Both studies captured gender as a variable in the work and also adopted a quasi- design for the study, but didn't consider school type (public and private). Findings show that students that engaged in the jigsaw learning strategy performed significantly better than other students not exposed to the strategy. The present study also reported a major performance mean difference of 18.4 between private and public secondary school students at the post test level of the experiment. This simply mean that after exposure to treatment, students in the private school performed significantly better than their counterparts in the public school. On the whole, the findings in the present study proved that there is a positive effect in adopting the Jigsaw learning model to teach map work in geography, and to boost students' academic performance.

Conclusion

Based on the discussion and findings of this study the following conclusion is drawn: The Jigsaw Learning model appears to have a strong record of successes in increasing student's motivation to learn and enhancing

higher academic performance. The strategy was found to be student-friendly, irrespective of school type. This model can be used to address the present trend of poor academic performance of senior secondary school geography students in map reading and interpretation. Geography teachers at senior secondary level can explore the potentials of Jigsaw Learning model in order to improve the teaching of map reading in geography irrespective of any aspect of the subject and school type.

Recommendations

The following recommendations are made.

1. The Government, proprietors of school and other stakeholders should equip geography laboratories with basic facilities that facilitate learning of map reading in geography to enable the students, irrespective of the type of school to benefit from the use of Jigsaw Learning model at this level.
2. Geography teachers should be encouraged to use Jigsaw Learning Strategy as alternative strategy that they can fall back on in order to improve the teaching of map reading and other difficult areas in senior secondary geography.

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Capacity Building Needs of Carpentry and Joinery Teachers in Technical Colleges in Kano State, Nigeria

By

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Abstract

The study was designed to determine the capacity building needs of carpentry and joinery teachers in technical colleges in Kano State, Nigeria. Five research questions guided the study. The population of this study was 1,387 and the sample for this study was 138 respondents. The instrument used for data collection was questionnaire which was validated by three woodwork technology education experts from Department of Woodwork Technology Education, Federal College of Education (Technical) Bichi, Kano State, Nigeria. Cronbach Alpha Method was used to establish the reliability of the instrument and the coefficient of 0.86 was obtained. It was found out that carpentry and joinery teachers needed capacity building in formulating specific objective for carpentry and joinery lessons, following approved carpentry and joinery procedures in and determining the progressive growth/assimilation of programme. Based on the findings, the following recommendations were made, the findings of this study should be package as a training materials and use to train carpentry and joinery teachers by science and technical schools board in Kano State during seminars and workshops, in-service training should be offered to carpentry and joinery teachers by staff training department of science and technical schools board to improve carpentry and joinery teachers efficiency and effectiveness in teaching carpentry and joinery courses and the carpentry and joinery teachers as the curriculum implementers should teach the necessary skills that will equip the students to participate efficiently and effectively in skilled carpentry and joinery students.

Keywords: *Capacity building*, instruction, evaluation, resource utilization, carpentry and joinery

Introduction

Capacity building involves structured training activities designed to enhance skills and capabilities. It is increasingly regarded as a strategy for effective change in the education system (Aitken, 2022). According to the United Nations Committee (2020), Capacity building enables teachers to

acquire, improve, and retain the knowledge and skills necessary for competent job performance. Capacity building encompasses the abilities, knowledge, skills, experience, and proficiency needed by individuals to accomplish specific tasks (Olaitan *et al.*, 2019).

The role of Technical College Education in Nigeria includes providing full-time or part-time courses in technology, applied science, and commerce. These courses address the industrial, commercial, and vocational needs of Nigeria, including fields such as agriculture, engineering, and other applied technologies. Technical colleges also serve other functions deemed necessary by society to promote their objectives, relevant to the needs of the development of Nigeria in the area of industrial, commercial and vocational agriculture, professional studies in engineering and other technologies and perform such other functions as in the opinion of the society as may serve to promote the objectives of the Technical Colleges (Abdulkadir, 2021). The curriculum of Technical Colleges aims to provide training and impart the skills necessary for producing enterprising and self-reliant craftsmen, technicians, and other personnel (UNESCO & NBTE, 2020). The courses offered include Computer Craft Practice, Wood Trades, Textile Trades, Printing Trades, Beauty Culture Trade, Electrical Engineering Trades, Automobile Trade, and Building Trade (Okolocha & Baba, 2023). These institutions train craftsmen to achieve the middle-level National Business and

Technical Examination Board Certificate (Okorie, 2021).

A teacher is a professional prepared to promote the academic and social development of both young and old students through a structured curriculum (Auyakacha, 2023). A Carpentry and Joinery Teacher is trained in both technical and pedagogical aspects of carpentry and joinery to help students achieve learning objectives. This involves teaching the full content of the carpentry and joinery curriculum through practical activities and field experiences. Teachers focus on achieving the objectives set in the National Curriculum by the National Board for Technical Education (NBTE, 2020).

Statement of the Research Problem

The aim of capacity building for carpentry and joinery teachers is to create an environment conducive to understanding concepts, developing scientific skills, and fostering positive attitudes among teachers. Carpentry involves structural works such as rafters, floor-wedges, formwork construction, and wooden roofs, primarily focusing on exterior construction that does not require machining, finishing, or precise joints. In contrast, joinery involves interior finishing works like furniture construction, paneled framing for doors and windows, and

requires well-seasoned timber and precise joints through machining and finishing (Kareem, 2019). Technical colleges aim to equip individuals with practical skills, fundamental scientific knowledge, theoretical understanding, and hand-on workshop practice, preparing them to become skilled craftsmen and technicians at sub-professional levels, theory and related courses, workshop practice and attitude required as craftsmen and technicians at sub-professional levels (Besmart-Digbori, 2021). Many students in technical colleges perform poorly in carpentry and joinery, leading to a high number of white-collar job seekers despite the completing the carpentry and joinery curriculum. To address this issue, it is essential to focus on the teachers, who are the implementers of the curriculum. The researchers observed that the poor performance might be due to carpentry and joinery teachers needing to update their knowledge in implementing the new curriculum. Therefore, capacity building of these teachers is necessary.

Aim and Objectives of the Study

The study was designed to determine the capacity building of needs of carpentry and joinery teachers in technical colleges in Kano state, Nigeria. Specifically, the study determined the:

- (1) Capacity building needs of carpentry and joinery teachers in planning lessons.
- (2) Capacity building needs of carpentry and joinery teachers in implementing lessons.
- (3) Capacity building needs of carpentry and joinery teachers in evaluating lessons.
- (4) Capacity building needs of carpentry and joinery teachers in resource utilization, and
- (5) Capacity building needs of carpentry and joinery teachers in workshop management.

Research Questions

This study is guided by the following research questions:

- 1 What are the capacity building needs of carpentry and joinery teachers in planning lessons?
- 2 What are the capacity building needs of carpentry and joinery teachers in implementing lessons?
- 3 What are the capacity building needs of carpentry and joinery teachers in evaluating lessons?
- 4 What are the capacity building needs of carpentry and joinery teachers in resource utilization?
- 5 What are the capacity building needs of carpentry and joinery teachers in workshop management?

Methodology

Descriptive survey research design was considered appropriate for this study. This research design is mostly applied to real life situation in education where need to determine the capacity building needs. Olaitan, *et al.* (2020) stated that the descriptive survey research design is the plan, structure and strategy that the investigator/researcher wants to adopt in order to obtain solution to research problems using questionnaire in collecting, analyzing and interpreting the data. Descriptive survey research design uses questionnaire, interview and observation among other in order to determine the opinions, attitudes perceptions and preferences of persons. Data collected from the carpentry and joinery teachers in technical colleges were obtained through questionnaire. This study was carried-out in Kano State. The state is one of the seven states in North-Western Nigeria. The population for this study was 268 carpentry and joinery teachers in Kano State. The respondents constitute the population of carpentry and joinery teachers using purposive sampling in technical colleges as identified by Planning, Research and Statistics Department in Science and Technical Schools Board Kano State (2022). The instrument for data collection was 42 items structured questionnaire titled:

Carpentry and Joinery Teachers Capacity Building Questionnaire (CJTCBQ). The items have two categories of response scales. The level of needed category has four point response opinions of Highly Needed (HN), Needed (N), Slightly Needed (SN), and Not Needed (NN).

The performance category has four point response options of High Performance (HP), Performance (P), Slight Performance (SP), and No Performance. The response options are coded as follows: Highly Needed/High Performance – 4 Points, Needed/Performance – 3 Points, Slightly Needed/Slight Performance – 2, and Not Needed/No Performance – 1 Point. The instrument was subjected to face and content validated by three woodwork technology education experts from Department of Woodwork Technology Education, Federal College of Education (Technical) Bichi, Kano State, their corrections, observations and suggestions were used to develop the final copy of the instrument. Fifteen copies of the questionnaire were administered to carpentry and joinery teachers in Katsina State which is outside the area of study but share similar responses. Cronbach Alpha Method or Formula was used to establish the reliability instrument and the coefficient of 0.86 (that is, high reliability) was obtained.

Two hundred and sixty eight copies of the questionnaire were administered by the researcher and nine research assistants (three research assistants for each zone). 268 copies of the questionnaire were retrieved from the respondents representing 97.04 which were used for data analysis. Performance Gap Index Analysis (PGIA) was use in determining capacity building of carpentry and joinery teachers. PGIA is a method of

assessing the performance of a business unit to determine whether business requirements or objectives was achieved or not. It is the process that companies use to compare their current performance with their desired, expected performance. It was determine as follows:

Result Presentation

Data for answering research questions are presented in Table 1 – 5.

Table 1
Mean Responses of Carpentry and Joinery Teachers on Capacity Building Needs in Planning Carpentry and Joinery Lessons

S/No.	Item Statements	\bar{X}_n	\bar{X}_p	PG = $(\bar{X}_n - \bar{X}_p)$	Rem.
1.	Formulate specific objective for carpentry and joinery lessons.	3.40	2.53	0.87	N
2.	Decide on how the objective should be categories.	3.59	2.59	1.00	N
3.	Set target on how carpentry and joinery lessons will be actualized.	3.59	2.58	1.01	N
4.	Identify materials to be used in the lessons.	3.53	2.46	1.07	N
5.	Select relevant materials for the lessons.	3.46	2.58	1.01	N
6.	Make budget for tools/items.	3.21	2.34	0.87	N
7.	Identification of source of obtaining finance for its actualization	3.21	2.28	0.93	N
8.	Organize these carpentry and joinery lessons through the use of school calendar	3.10	2.28	0.81	N
9.	Determine the method of lessons.	2.96	2.46	0.50	N
10.	Assign duties/specific tasks to students.	3.34	2.21	1.13	N
11.	Determine evaluation strategies.	3.40	2.52	0.88	N

Source: Field Work

KEYS: N = Needed, NN = Not Needed, \bar{X}_n = Level of Mean Needed, \bar{X}_p = Level of Mean of Performance, PG = Performance Gap.

Data in **Table 1** revealed that all the 11 items had their performance gap values ranged from 0.50 to 1.37 and were positive such as: decide on how the objective should be

categories, set target on how carpentry and joinery lessons will be actualized and identify materials to be used in the lessons.

This indicated that carpentry and joinery teachers in technical colleges in Kano State agreed, they needed capacity building on all

the 11 items on planning of carpentry and joinery lessons.

Table 2
Mean Responses of Carpentry and Joinery Teachers on Capacity Building Needs in Implementing Carpentry and Joinery Lessons

S/No.	Item Statements	\bar{X}_n	\bar{X}_p	$PG = \bar{X}_n - \bar{X}_p$	Rem.
12.	Layout carpentry and joinery lesson plans.	3.46	2.71	0.75	N
13.	Arrange materials	3.52	2.40	1.12	N
14.	Strict adherence to formulated carpentry and joinery lessons.	3.15	2.28	0.87	N
15.	Review carpentry and joinery lessons periodically.	3.59	2.59	1.00	N
16.	Preparation of class/home work	3.21	2.65	0.56	N
17.	Set-up committee to monitor carpentry and joinery lessons.	2.96	1.85	1.11	N
18.	Follow approved carpentry and joinery procedures.	3.03	2.09	0.94	N

Source: Field Work

KEYS: N = Needed, NN = Not Needed, \bar{X}_n = Mean Level of Needed, \bar{X}_p = Mean Level of Performance, PG = Performance Gap, REM = Remark

Table 2 above revealed that the seven items had their performance gap ranged from 0.56 to 1.12 and were positive, such as: review carpentry and joinery lessons periodically, set-up committee to monitor carpentry and

joinery lessons and follow approved carpentry and joinery procedures.

This indicated carpentry and joinery teachers in technical colleges in Kano State need capacity building in all the seven items on implementing carpentry and joinery lessons.

Table 3**Mean Responses of Carpentry and Joinery Teachers on Capacity Building Needs in Evaluation of Carpentry and Joinery Lessons**

S/No.	Item Statements	\bar{X}_n	\bar{X}_p	$PG = \frac{\bar{X}_n - \bar{X}_p}{\bar{X}_n - \bar{X}_p}$	Rem.
19.	Assess students' understanding of the lessons.	3.46	2.46	1.00	N
20.	Assess students' mastery of competency.	3.78	2.28	1.50	N
21.	Identify key points to be evaluated.	3.46	2.53	0.93	N
22.	Identify areas of improvement.	3.46	2.34	1.12	N
23.	Determine quality of output	3.35	2.21	1.14	N
24.	Determine progressive growth/assimilation of programme.	3.40	2.35	1.05	N
25.	Disseminate knowledge of result	3.28	2.36	1.00	N
26.	Keep performance record	3.28	1.27	1.00	N

Source: Field Work

KEYS: N = Needed, NN = Not Needed, \bar{X}_n = Mean Level of Needed, \bar{X}_p = Mean Level of Performance, **PG** = Performance Gap, **REM** = Remark

Table 3 above revealed that the eight items had their performance gap ranged from 0.92 to 1.50 and were positive, such as: assess students' understanding of the lessons, assess students' mastery of competency and identify key points to be evaluated.

This indicated carpentry and joinery teachers in technical colleges in Kano State need capacity building in all the seven items on evaluation carpentry and joinery lessons.

Table 4**Mean Responses of Carpentry and Joinery Teachers on Capacity Building Needs in Resource Utilization of Carpentry and Joinery Lessons**

S/No.	Item Statements	\bar{X}_n	\bar{X}_p	$PG = \frac{\bar{X}_n - \bar{X}_p}{\bar{X}_n - \bar{X}_p}$	Rem.
27.	Get enough supply and utilization of resources.	3.59	2.15	1.44	N
28.	Guide the students' on the use of materials and implements.	3.53	1.96	1.57	N
29.	Set-out panels/committee to analyze the effects of resources.	3.21	2.21	1.00	N
30.	Decide appropriate tools/machines for the lessons.	3.65	2.59	1.06	N

Source: Field Work

KEYS: N = Needed, NN = Not Needed, \bar{X}_n = Mean Level of Needed, \bar{X}_p = Mean Level of Performance, **PG** = Performance Gap, **REM** = Remark

Table 4 above revealed that the four items had their performance gap ranged from 1.00

to 1.57 and were positive, such as: guide the students' on the use of materials and

implements, set-out panels/committee to analyze the effects of resources and decide appropriate tools/machines for the lessons. This indicated carpentry and joinery teachers

in technical colleges in Kano State need capacity building in all the four items on resources utilization of carpentry and joinery lessons.

Table 5
Mean Responses of Carpentry and Joinery Teachers on Capacity Building Needs in Colleges
Carpentry and Joinery Workshops Management

S/No.	Item Statements	\bar{X}_n	\bar{X}_p	$PG = \frac{\bar{X}_n - \bar{X}_p}{\bar{X}_n - \bar{X}_p}$	Rem.
31.	Select relevant materials for each stage of practical work.	3.40	2.78	1.12	N
32.	Identify practical activity.	3.65	2.78	0.88	N
33.	Direct students' practical activity.	3.40	3.56	-0.06	NN
34.	Identify material resources implementation of practical work.	3.34	3.34	0.99	N
35.	Organize students' into group for practical activities.	3.65	2.78	0.88	N
36.	Assign responsibility or work activities to each group.	3.71	2.34	1.34	N
37.	Record work activity.	3.35	2.34	1.01	N
38.	Assess students' practical knowledge of result.	3.28	2.46	0.82	N
39.	Provide knowledge of result.	3.40	1.96	1.44	N
40.	Decide on maintenance culture.	3.59	2.46	1.19	N
41.	Provide knowledge of skills.	2.90	1.96	0.94	N
42.	Report poor performance of the skill by the students.	3.65	2.46	1.19	N

Source: Field Work

KEYS: N = Needed, NN = Not Needed, \bar{X}_n = Mean Level of Needed, \bar{X}_p = Mean Level of Performance, **PG** = Performance Gap, **REM** = Remark

Table 5 above revealed that the 11 out of 12 items had their performance gap ranged from 0.62 to 1.44 and were positive, such as: assign responsibility or work activities to each group, Organize students' into group for practical activities and assess students' practical knowledge of result. This indicated 12 items had performance gap value of -0.06 was negative, indicating that carpentry and

joinery teachers in technical colleges in Kano State not need capacity building on the item. Generally, carpentry and joinery teachers needed capacity building on college carpentry and joinery workshop management.

Discussion of the Findings

The findings of this study revealed that carpentry and joinery teachers needed

capacity building on formulation of specific objectives for carpentry and joinery lessons, decisions on how objectives will be categorized, set target in how carpentry and joinery lessons will be actualized, identify materials, tools, and machines to be used in lessons, select materials for lessons and make budget for tools/machines. This is conformity with finding of Robert and Dyer (2024) which revealed that strategies of planning of technical lessons required because teachers ability to plan for the next lesson, develop effective ways of communication and evaluate effectiveness of the whole teaching or programme is an act of professionalism. The findings is also in conformity with Kamisah, *et al.* (2020) who asserted that the planning of technical lessons creates a need for teachers to make their lessons to be interesting and attractive especially for students with low cognitive levels.

Furthermore, this study revealed that carpentry and joinery teachers needed capacity building on strict adherence to formulated carpentry and joinery lessons, arrangement of materials, tools and machines layout of carpentry and joinery instructional plan, review carpentry and joinery instructions periodically, and preparation for class/home works. This is a sign that they perform how low in carpentry and joinery

curriculum instruction implementation. The findings of this study is in consonance with the findings of Olaitan, Alaribe & Nwobe (2019) that teachers of carpentry and joinery perform low in implementing general carpentry and joinery curriculum content in Colleges of Education, Polytechnics and Universities.

In addition, the findings of this study revealed that carpentry and joinery teachers needed capacity building in deciding appropriate materials/tools and machines for instructions, set-out committee to analyzed effects of resource get enough supply and utilization of resource, guide students on the use of materials and methods. These findings were in agreement with Lawal, *et al.* (2019) that carpentry and joinery teachers needed capacity building in organizing college carpentry and joinery workshop practical works.

Conclusion

The purpose of this study was to determine the capacity building needs of carpentry and joinery teachers in technical colleges. The five research questions were designed for study on planning of lessons, implementation of lessons, evaluation of lessons, resource utilization, and workshops management for effective and efficient in the lessons delivery. Based on the findings of the study, the mean

responses of respondents shows need capacity building on all five research questions only one item for the whole instrument at level of not needed for the whole respondents.

Recommendations

Based on the findings, the following recommendations were made:

- (i) In-Service training should be offered to carpentry and joinery teachers on lesson planning by the Staff Training and Development Department of Science and Technical Schools Board Kano State. This can be achieved by organizing seminars and workshops aimed at improving teachers' effectiveness and efficiency in delivering carpentry and joinery lessons.
- (ii) The findings of this study should be compiled as training materials and used to train carpentry and joinery teachers on implementing the carpentry and joinery

curriculum. This will ensure effective and efficient teaching and learning of carpentry and joinery lessons.

- (iii) Regular seminars and workshops should be organized by the Science and Technical Schools Board, Kano State, for carpentry and joinery teachers on evaluating students' performance in carpentry and joinery trade.
- (iv) Training should be organized by the Science and Technical Schools Board, Kano State, for carpentry and joinery teachers on how to utilize available resources during carpentry and joinery lessons.
- (v) In-Service training should be organized by the Science and Technical Schools Board, Kano State, for carpentry and joinery teachers on managing carpentry and joinery workshops in the technical colleges.

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Impact of Conflict Management among Staff of Benue State University, Makurdi

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Abstract

This study examined the impact of conflict management among staff of Benue State University, Makurdi. Two research questions and two hypotheses guided the study. The study adopted a descriptive survey research design. The population consists of 1232 and a sample of 302 staff was selected using simple random sampling techniques. The instrument used for data collection was the “Impact of Conflict Management Questionnaire (ICMQ)”. The questionnaire contained 10 items. Items 1 to 5 sought responses on the impact of conflict management on productivity of staff, while items 6–10 sought responses on the impact of conflict management on job performance. The questionnaire was validated by three experts in the Faculty of Education, Benue State University Makurdi. Data collected was analyzed using mean scores and standard deviations to answer the research questions. The hypotheses were tested using chi-square at the 0.05 level of significance. The study concludes that conflict at Benue State University has a positive and negative impact on staff productivity and job performance. Based on the findings of the study, it was recommended that prompt payment of salary arrears and timely implementation of promotion benefits to the staff of the university should be made, and management should embark on training and retraining of its staff in the area of conflict management to create a conducive working environment for the staff to work effectively.

Keywords: *Conflict*, management, productivity and performance

Introduction

Every individual is unique, with varying wants, interests, opinions, beliefs, and values that, if not well managed, could lead to conflict. Although there are times when conflict is beneficial, most conflict situations are harmful. Because of the disparities that frequently arise in industrial relations, managers and their employees are bonded together in a work environment that appears fragile and has a clear potential for recurrent conflict situations. Organizations

of all sizes, whether public or private, small or large, exist primarily to accomplish specific political, social, or economic goals (Wang & AnqiLiu, 2019). These goals could include, but are not limited to, producing goods and services, earning a profit, and offering services. However, these objectives can only be achieved when human resources are employed to utilize other natural and physical resources, such as raw materials, machinery, land, and water resources. Organizations are made up of different

people with different attitudes, beliefs, abilities, and personalities; therefore, conflict is inevitable (Olasupo, 2018). This implies that organizations need conflict as a "necessary evil." It is a common characteristic of formal organizations that arises from differences between management's and individual employees' interests (Ibrahim & Adeyemi, 2019).

Conflicts are an everyday phenomenon in each organization. There is growing recognition of the importance of conflict in an organization. A recent survey indicated that managers spend a considerable portion of their time dealing with conflict and that conflict management becomes increasingly important to their effectiveness. Obisi (1996) argues that despite this fact, peace forms one of the fundamental factors for enhanced productivity with resultant benefits to both the labour and management as well as for the economic development of the country.

Therefore, it won't be inappropriate to view conflict as a necessary and desirable element in the workplace. One way to conceptualize conflict would be as a competitive situation where both parties are aware of the incomparability of their prospective future positions and each wants to occupy a position that is incompatible with the other's wishes.

Employees' pursuit of profit maximization may give rise to conflict, as workers' representatives want to guarantee that their members continue to live in better conditions. Another thing that could lead to conflict is not honoring collective bargaining agreements. Damachi (1999) emphasizes that if those workers rights and employee prerogatives are trampled upon, it could also cause conflict. These include pay, condition of service, and fringe benefits, among others. Azamosa (2004) observed that conflicts involve the total range of behaviors and attitudes that are in opposition between owners/managers on the one hand and working people on the other. It is a state of disagreement over issues of substance or emotional antagonism and may arise due to anger, mistrust, or personality clashes.

The detrimental effects of strikes and lockouts on organizations have been extensively studied. These industrial conflicts can result in significant consequences at three levels: psychological, political, and economic. All parties involved in industrial actions are affected by these negative outcomes. The importance of effective conflict management in mitigating the problems arising from conflicts and assisting organizations in achieving their

corporate objectives cannot be overemphasized (Awan and Saeed, 2015)

Benue State University is one of the institutions that have experienced a series of conflicts that have significant influence on both staff commitment and overall productivity. Effective conflict management strategies can foster a more harmonious work environment, which is crucial for the managerial and academic success of the institution.

Statement of the Problem

The available literature shows that conflict in the workplace is a leading cause of stress and causes loss in productivity as employees try to avoid those with whom they disagree. Albelt (2001) affirmed that there are productive and destructive conflicts in the workplace. According to Albelt (2001), “conflict is said to be positive when it is constructively discussed by the parties and amicable terms for the settlement reached”. The study emphasized that constructively managed conflict in the workplace induces positive employee performance, while poorly managed conflicts lower employees’ productivity, increase employee absenteeism, increase the chances of losing skilled personnel and levels of loss of man and machines hours, and may lead to an increase in the number of defective products

produced due to a lack of employees’ commitment to work.

Conflicts at Benue State University, Makurdi, often arise from interpersonal and inter-group dynamics, with inter-group conflicts between unions and management being particularly prevalent. These conflicts can lead to industrial disharmony and disruptions in institutional activities if not effectively managed through collective agreements. Unresolved conflicts among employees can result in low morale, decreased productivity, loss of skilled personnel, loss of man-hours and machine hours, absenteeism, increased defective products due to lowered employee commitment, and health issues stemming from stress and depression (Fareo & Jajua, 2018). Given the recurring conflicts within the university, it is crucial to investigate the impact of conflict management among the staff of Benue State University, Makurdi

Objectives of the Study

The purpose of the study is to examine the impact of conflict management among staff of Benue State University, Makurdi. Specifically, the study seeks to:

1. examine the impact of Conflict management among staff of Benue State University, Makurdi on productivity

2. Ascertain the impact of conflict management among staff of Benue State University on job Performance.

Research Questions

The following research questions guided the study:

1. What is the impact of conflict management among staff of Benue State University, Makurdi on productivity?.
2. What is the impact conflict management among staff of Benue State University on job Performance?.

Hypotheses

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

1. Conflict management has no significant impact on staff of Benue State University, Makurdi on productivity.
2. Conflict management has no significant impact on staff of Benue state University on job performance.

Methodology

This study adopts a survey research design that allows for an in-depth exploration of a particular research problem. The area of coverage for this study is Benue State University, Makurdi, with a focus on teaching and non-teaching staff. The target population of this study comprises all teaching and non-teaching staff at Benue State University, Makurdi. Hence, the study

has a total population of 1232staff (Benue State University Establishment Office, 2022).

A sample of 302 respondent representing the total population of 1932 teaching and non teaching staff of Benue State University, Makurdi representing 23% of the total population of thirteen faculties and 70 departments in the University. This agrees with Emaikwu (2015) who recommended that when a population is 1000 or above, 10% or more will be enough to constitute the sample of the study. Simple random sampling technique was used to select the sample for the study. The instrument used for data collection was “Impact of Conflict Management Questionnaire (ICMQ)”.The questionnaire contained 10 items. Items 1 to 5 sought responses on impact of conflict management among staff of Benue State University while items 6-10 sought responses on impact of conflict management among staff of Benue state university on job performance. The instrument was structured on four-point rating scale of Strong agree (SA)=4, Agree (A)=3, Disagree (D)=2 and Strongly Disagree (1)=1. The questionnaire was validated by three experts in the Faculty of Education, Benue State University, Makurdi. Cronbach Alpha was used to determine the reliability of the instrument

and it yielded reliability coefficient of 0.93 which shows that the instrument was high enough to be used for the study. Data collected were analysed using Mean scores and Standard Deviations to answer the research questions. If an item has a Mean score of 2.50 cut-off point and above it therefore means that conflict management among staff of Benue state university have impact on the staff. On the other hand, if it scored less than 2.50, involvement of staff conflict management on job performance . The hypotheses were tested using chi-square at 0.05 level of significance.

The sample size for the study is 302 respondents, who are proportionately distributed across the categories of staff. The study employed simple random sampling and proportionate sampling techniques in distributing the questionnaire among the teaching and non-teaching staff. Simple random sampling was used to avoid bias and to ensure that each respondent had an equal

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

N= given population

e= margin of error

1= constant

n= sample size

To determine the sample size using this formula: thus,

$$\text{Total population} = 1232$$

$$\text{Sample size (n)} = \frac{1232}{1+1232 (5\%)^2}$$

chance of being selected from each category. The study used the first staff member who came to work as a point of random selection for the survey and the online platforms for teaching and nonteaching staff. On the other hand, proportionate random sampling through the use of Bowley's formula (1926) was used in selecting respondents proportionate to the size of the population of each category of staff. The study, therefore, used a sample size of 302 respondents. The data for this study were collected through the administration of a questionnaire to the respondents using physical distribution of the questionnaires. Three hundred and two (302) questionnaires were distributed to respondents only 300 were returned for analysis. The instrument was validated using the Cronbach's alpha coefficient through a pilot study.

The sample size for this study is calculated using the formula propounded by Yamane (1967)

Where:

$$n = \frac{1232}{1 + 1232(0.05)^2}$$

$$n = \frac{1232}{1 + 1232(0.5) \times (0.5)}$$

$$n = \frac{1932}{1 + 1232 \times (0.0025)}$$

$$n = \frac{1232}{1 + 4.83}$$

$$n = 302$$

Data Analysis

Table 1: Research Question one: What is the impact of Conflict management among staff of Benue State University, Makurdi on low Productivity?.

Mean and Standard Deviation Rating on conflict management among staff of Benue State University, Makurdi

S/No	Item Description	SA	A	D	SD	\bar{X}	SD	Decision
1	Conflict causes staff to be late to work	224	32	31	13	3.56	.846	Agree
2	Conflict situation create anxiety and lower productivity	180	61	34	25	3.32	.973	Agree
3	Conflict between management and staff create behavioral change and lower productivity	220	47	17	16	3.57	.825	Agree
4	Conflict foster a hostile work atmosphere, which reduces employee engagement and overall organizational effectiveness	179	43	36	42	3.20	1.115	Agree
5	Loss of trust among employee lead to conflict situation and it diminish productivity.	175	59	38	28	3.27	1.007	Agree
Cluster Mean						3.04	0.10	

Table 1 shows mean ratings of 3.56, 3.32, 3.57, 3.20, 3.27 and cluster mean of 3.04 with a corresponding standard deviation ratings of .846, .973, .825, 1.115 and 1.007 respectively. The result indicated that items 1-5 individual ratings agreed that conflict situations affect the overall effectiveness make staff to be late to work, conflict situation create anxiety and lower productivity, conflict between management and staff create behavioral change and lower productivity, conflict foster a hostile work

atmosphere, which reduces employee engagement and overall organizational effectiveness and Loss of trust among employee lead to conflict situation and it diminish productivity. The cluster mean value of 3.04 was found to be above the mean score benchmark of 2.50. This showed the impact of conflict management on staff of Benue State university, Makurdi on productivity.

Table 2: Research Question two: What is the impact conflict management among staff

of Benue State University on job Performance?

Mean and Standard Deviation Rating on conflict management among staff of Benue State University, Makurdi on job performance

S/No	Item Description	SA	A	D	SD	\bar{X}	SD	Decision
6	There is lack of cooperation between management and staff on conflict management to enhance job performance	153	39	42	66	2.93	1.237	Agree
7	Staff abscond duty as a result of conflicts	157	42	71	30	3.09	1.075	Agree
8	There is lack of trust among staff and management as a result of conflicts	136	36	100	28	2.93	1.077	Agree
9	Due to autocratic nature of management the staff are afraid air their views in a meeting.	158	37	72	33	3.07	1.098	Agree
10	There is a behavioural change by the staff as a result of persistence conflicts which lead to poor job performance.	144	43	60	53	2.93	1.177	Agree
Cluster Mean						2.99	1.04	Agree

Source: Researcher’s Field Work, 2023

Table 2 shows mean ratings of 2.93, 3.09, 2.93, 3.07, 2.93 and cluster mean of 2.99 with a corresponding standard deviation ratings of 1.237, 1.075, 1.077, 1.098 and 1.177 respectively. The result indicated that items 6-10 individual ratings agreed that there is lack of cooperation between management and employees on conflict management to enhance job performance, Staff abscond duty as a result of conflicts, there is lack of trust among staff and management as a result of conflicts, due to autocratic nature of management the employee are afraid air their

views in a meeting and there is a behavioural change by the employees as a result of persistence conflicts which lead to poor job performance. The cluster mean value of 2.99 was found to be above the mean score benchmark of 2.50. This showed the impact of conflict management on staff of Benue State University, Makurdi on job performance.

Hypotheses Hypothesis one: Conflict management has no significant impact on staff of Benue State University, Makurdi on productivity.

Table 3: Chi-Square Analysis on the impact of conflict management among staff in Benue State university on productivity.

Responses	Fo	Fe	Df	x^2	p	Remark
Strongly Disagree	25	75.0	3	264.080 ^a	0.000	Rejected
Disagree	31	75.0				
Agree	48	75.0				
Strongly Agree	196	75.0				
Total	300					

Table 3 shows that $\chi^2(df, 3) = 264.080^a$, $p = .000 < 0.05$. Since the p value is less than the alpha value of 0.05, the null hypothesis is rejected. This finding implies that conflict management among staff of Benue state

university and management have significant impact on productivity.

Hypothesis 2: Conflict management has no significant impact on staff of Benue state University on job performance.

Table 4: Chi-Square Analysis on the impact of conflict management among staff in Benue State University on job performance.

Responses	Fo	Fe	Df	χ^2	p	Remark
Strongly Disagree	42	75.0	3	99.547 ^a	0.000	Rejected
Disagree	60	75.0				
Agree	49	75.0				
Strongly Agree	149	75.0				
Total	300					

Table 4 shows that $\chi^2(df, 3) = 99.547^a$, $p = .000 < 0.05$. Since the p value is less than the alpha value of 0.05, the null hypothesis was rejected. This implies that conflict management among staff of Benue state university has significant impact on job performance.

Discussion of the Findings

The first finding of the study showed that Conflict management has no significant impact on staff of Benue State University, Makurdi on productivity. This is justified that conflict situations affect the overall effectiveness make staff to be late to work, conflict situation create anxiety and lower productivity, conflict between management and staff create behavioral change and lower productivity, conflict foster a hostile work atmosphere, which reduces employee

engagement and overall organizational effectiveness and Loss of trust among employee lead to conflict situation and it diminish productivity. This finding is in line with the findings of Albelt (2001), who revealed that conflict in the workplace lower employees' productivity, increase employee absenteeism, increase the chances of losing skilled personnel and levels of loss of man and machines hours, and may lead to an increase in the number of defective products produced due to a lack of employees' commitment to work.

The second finding of the study showed that conflict management has no significant impact on staff of Benue state University on job performance. This finding could be justified that the lack of cooperation between management and employees on conflict management to enhance job performance,

staff abscond duty as a result of conflicts, there is lack of trust among staff and management as a result of conflicts, due to autocratic nature of management the employee are afraid air their views in a meeting and there is a behavioural change by the employees as a result of persistence conflicts which lead to poor job performance. This finding was also confirmed with test of hypothesis 1 which revealed that conflict management among staff and management of Benue State University has significant impact on productivity.

This finding agreed with the findings of Nuel-Okoli, Mbah, and Okeke (2018) also investigated the effect of conflict management on organizational performance in private universities in Anambra state. The study established a relationship between conflict management strategies and their implications for an organization's performance and found that there is a significant positive contribution of conflict management strategies to organizational performance. The finding was confirmed with the test of hypothesis 2 which revealed that conflict management among staff has significant impact on job performance. The findings of the study is also in line with the finding of Ndulue and Ekechukwu (2016) also examined the impact of conflict

management on employees' performance at Nigerian Breweries Plc Iganmu, Lagos state. The study found that there is a significant relationship between conflict management and employees' performance in Nigerian Breweries Plc.

Conclusion

Conflict is inevitable in any organization as a 'necessary evil' if properly managed can be of great benefit to both parties involved in the conflict. Based on the finding, the study concluded that conflict management at Benue State University has both a positive and negative impact on staff productivity and performance.

Recommendations

Therefore, the study makes the following recommendations for improved performance of staff and the management working relationship.

- Management should formulate policies that will ensure that conflicts that may occur within the organisation are quickly resolved.
- There should be efficient and effective communication among all categories of the employees the organisation.
- The management should embark on training and retraining of its staff in area of conflict management so as to create a conducive working environment.
- There should be prompt payment of salaries arrears and timely implementation of

promotion benefits to the staff of the university

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Evaluating the Impact of Inflation on Investment Priorities in Basic Education: Teachers' Perspectives in Delta State, Nigeria

By

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Abstract

This study identified the factors that teachers believe should be prioritized for investment in Basic Education during inflation in Delta State, Nigeria. It was guided by three research questions. A descriptive survey research which adopted the ex-post facto design was utilized. The population comprised 3068 public primary schools teachers from the eight local government areas in the Delta South Senatorial District of Delta State, Nigeria. A sample of 1026 teachers was selected using simple random sampling technique, from thirty public primary schools in four local government areas of Delta South Senatorial District. The questionnaire was employed for data collection. It was validated by two colleagues who are experts in test and measurement. The corrections and suggestions made was imputed in the final draft. The reliability of the instrument was determined through the Cronbach Alpha Statistic which yielded a coefficient index of 0.76. Data analysis was performed using percentages, and mean rating with a decision level set at 2.50. The findings emerging from the analyzed data indicated that among the factors considered, school related factors received the priority for investment. The study recommends that priority should be given to timely payment of teachers salaries.

Keywords: Teachers, priorities, investment, basic education, inflation

Introduction

In Contemporary time, policymakers, economists and governments of developed and undeveloped nations, Nigeria inclusive have shown interest in the relationship between inflation and economic growth. The Central Bank of Nigeria through its Monetary Policy Committee mandates, is charged to foster and sustain the price stability and ensure an efficient financial system because a sound monetary policies brings about

sustained growth in the economy which increase the monetary value, halt inflation and other macroeconomic uncertainties that could grow the economy (Central Bank of Nigeria Act, 2007). The concept of Inflation is the constant rise of prices of goods and services which can lead to low production and retardation of economic growth. When there is inflation the strength and stability of money which is the medium for exchange of

goods and services is being affected and thus restrain individuals from acquiring enough goods and services (Jacobs, Perera, & Williams, 2014). In the year 2020, to be precise 22nd of September, the apex bank of the country decreased the Monetary Policy Rate by 100 basis points, from 12.5 per cent to 11.5 per cent, in order to reduce the economy's money supply so as to usher the increase of domestic prices which could channel capital into the economy resulting to the rise of the nations' foreign reserve (Central Bank of Nigeria Statistical Bulletin, 2020). But despite these stride, the menace of inflation continued to advance significant challenges to the Nations' economy's growth and development, and the education sector particularly the widely publicized Universal Basic Education is not left out as the cost of providing qualitative and quantitative Basic Education definitely involves huge capital outlay.

It is often sad to mention that the UBE in Nigeria is not left out of the heat of inflation and this could have led to shortfalls in the payments of teachers' salaries, non-payment of annual increment and accumulated promotion arrears for many years, poor infrastructure, among other factors which have caused serious harm to the education sector. For this obvious reason, many parents

and stakeholders are scared of poor quality delivery services which ankles on poor and inappropriate investment priorities. According to UNESCO (2010) some of the effects of inflation on education are underfunding of Education, reduction in teachers employment, brain drain due to teachers migration and mobility pattern. All of these poses threat to the goal of UBE programme which centre on eradication illiteracy among the citizenry. Thus making the right priorities of resource to invest in will no doubt save education industry particularly the UBE from collapse.

In modem economies, every sector of nation building begs for development and so there are always opportunity cost and alternative forgone in any priority made in investment. In the education system, there are always scarcities of resources as budgetary allocation has been on downward trend owing to a rising economic inflation, poverty and the low foreign earning of our mono-economy of oil. Akinyemi, Olorunfemi and Igot Bassey (2010) interposed that in a country (Nigeria) where much more fiscal resources are being spent on paying and servicing both external and domestic debts, will sustainable Universal Basic Education be achieve? There is the need for appropriate investment priorities to ensure maximum

utility to enhance attainment of educational goals and objectives.

The Nigerian government has long adopted primary education as his social responsibility for every primary school going age as well as adult literacy and nomadic education since 1999. Universal Basic Education (UBE) programme cost is therefore borne by the Federal Government of Nigeria with 2% of its Consolidated Revenue Fund in conjunction with state and local government (Akpotu, 2018). By implication, tax payers' money is used in financing UBE which necessitates adequate planning in terms of priorities of inputs. Therefore, planning the provision of resources will help in determining the area of more felt need in order to avoid wastage. Benwari and Agih (2018) specifically maintained that lack of in depth understanding, proper planning and wrong placement of priorities, even when the nation is endowed with great wealth, education sector does not benefit. Wrong priorities of investment can set the educational system on backward trend and resultant wastage. It is in view of these concerns that this study will investigate the teachers' choice of factors that should be given priority investment in provision of Basic Education at a time of rising inflation in Nigeria.

Statement of the Problem

The economic downturns and rising inflation have led to reduced budgetary allocation for education, making it crucial to prioritize investment effectively. Inflation rate in Nigeria is almost climbing to two digits; low exchange rates of the Naira as well low Gross Domestic Product (GDP) have no doubt may have created deep financial constraints in the educational sector which is evident in diverse forms such as high rate of illiteracy, dearth of infrastructural and instructional facilities, and the poor remuneration and working conditions of teachers. It is therefore imperative to prioritize the right investment in Basic Education in an era of inflation and dwindling financial allocation. Nwadiani (2018) maintained that in planning the educational system, priorities has to be made based on need assessment and often required reasoned judgment. Such priorities can strategically lead to improvement in the educational process thereby leading to improved quantity and quality of output. There is a dearth studies in teachers' priorities on investment in Basic Education in Delta State, particularly in South Senatorial District of Delta State as very few studies exist. This is the gap the study sought to fill. This research was therefore conducted to find out teachers' priorities of factors (among

resources inputs) that should be considered for investment in Basic Education in the current surge of inflation in the country.

Research Questions

The following research questions were raised to provide direction for the study:

1. What factors do teachers consider most important for investment in Basic Education during inflation?
2. What prevailing variables in each factor best determine teachers' investment priorities in Basic Education during inflation?
3. What variable among all the factors has the highest rating by teachers as priority for investment in Basic Education during inflation?

Review of Related Literature

Theoretical Framework

The study adopts the Rational Choice Theory in line with Chicago school of economics propounded by Becker Gary Stanley in 1993. According to the theory, costs and rewards are both material and immaterial, and also are personal and situational and that man has ordered preferences and evaluates events and maximizes utility when choosing a course of action. This theory is deemed relevant because choice consists of the mental process of judging the merits of multiple options and selecting one or more of them. Choice of action is therefore the result of purposive

actions of individuals with preferences, who are embedded within a socio-cultural context that both structures and restricts their actions. Unfortunately, virtually all levels of education in Nigeria seem to be replete of proper priorities of investment. In the present inflation situation which has led to poor budgetary allocation to education in the country and made evident in high rate of illiteracy, acute school facilities, and poor remuneration and working conditions the need to prioritize the right investment in Basic Education is paramount due to scarce financial resources

Need for Investment in Basic Education

Investment according to Akpotu (2018) is the act of investing money in something; the act of giving time or effort to a particular task in order to make it successful. The Federal Republic of Nigeria (FRN, 2014) made a momentous decision in 1999 by declaring universal basic education programme (UBE) that primary and junior secondary school education shall be free for every Nigerian child of the age bracket of 6-15 years. This is no doubt a gigantic project that is capital intensive in terms of resources, fiscal, physical and human. Already, there are some indications of paucity of fund as well as inadequate resource as our economy is in a depressed state due to rising inflation. For

example, Enueme (2021) found from his study in Delta state that out of the 137 schools he studied, 52 (37.6%) had no toilet of any kind. He also found out that only 54 (39.42%) had modern toilets and 31(22.23%) had pit latrine. Akporehe (2018) also mentioned that 15.6% of Delta State budget was allocated to education sector. In the view of Nwadiani (2020) the growing scarcity of resources for education sector, call for cost-effectiveness and accountability which has made education to be an economic investment. .

Need for Teachers' Priorities in Investment of School Resources

More often, decision of resources to be provided are made in political arena where no implementers are consulted. This has often resulted in misplaced priorities which could lead to unintended outcome of schooling such as low internal efficiency. Jeffrey (2015) critically analyzed the MacArthur Foundation Support to Nigerian Universities grant to four Federal universities to justify the use of grant as regards choice thus: have they been the right choices? Have the activities financed by Foundation support been wisely selected, in terms of creating a solid foundation for longer-term renewal; and as well as redressing more immediate weaknesses? Ehiametalor (2021) maintained that programme of instruction have their specific demands for physical facilities and

therefore should be available based on specification and maintained in a usable state. Akpotu (2018) maintained that it is important to examine the relevance of the mix of investment options for different levels of education.

Resources and Learning

Relevant resources availability as well judicious utilization could lead to effective teaching and learning process. Akpotu (2018) defined student engagement as participating in the activities offered as part of the school programme. Egboro (2021), maintained that the education industry has inputs in the form of human resources (students, teachers and other personnel) and material resources (equipment, facilities and funds).

Ayodele (2019) found that an increase in teacher quality will tend to reduce wastage ratio and will in turn enhance school internal efficiency. Akporehe (2018) using Statistical Package for Social Sciences found a significant relationship between teacher qualification and internal efficiency at .024 significant level. William and Michele (2012) found that economic incentive matters for educational performance, and that input into the educational process, in terms of expenditure per pupil, has a positive effect on educational performance. Investment should therefore be targeted at more felt needs of

schools to encourage pupils' active participation in class for meaningful learning to take place.

Methodology

This is a descriptive survey research that employed the ex-post facto design; therefore the independent variable cannot be manipulated under any disguise. The population comprised 3068 public primary schools teachers from the eight local government areas in the Delta South Senatorial District of Delta State, Nigeria in the 2022/2023 academic session. (*Source: State Universal Basic Education Board, Asaba, Delta State, April, 2023*).. A sample of 1026 teachers was selected using simple random sampling technique, from thirty public primary schools in four local government areas of Delta South Senatorial District. A self designed questionnaire titled 'School Resource Investment Determinant Questionnaire' (SRIDQ) was used to collect data from the respondents (teachers). The questionnaire consists of thirty items which were rated by the teachers. The questionnaire consists of two sections: 'A and B'. Section A sought data on some demographic variables while section B contained all the items to be rated. The ratings were: 5 =

Highest determinant factor, 4 = High determinant factor, 3 = Moderate determinant factor, 2 = Low determinant factor, 1 = Very low determinant factor. The questionnaire was validated by two colleagues who are experts in test and measurement of the Delta State University, Abraka for face and content validation. They scrutinized the items of the instrument and provided comments which were used to modify the instrument before the final draft was printed. The reliability of the instrument was determined through the Cronbach Alpha Statistic. This was conducted on 50 teachers who were not among the sampled schools and it yielded a coefficient index of 0.76 indicating the instrument was reliable. The data generated from the research instrument were analyzed with descriptive statistics using percentages and mean rating of each factor to determine the variable to be given priority investment with a decision level set at 2.50.

Results

The answer to the research questions are presented as follows:

Research Question 1: What factors do teachers consider most important for investment in Basic Education during inflation?

Table 1.1: Mean Rating of Factors Teachers Consider Important for Investment in Basic Education during Inflation.

S/N	School Variables	N	Mean	% Mean	Decision
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1	Providing electricity in the school	1026	3.55	71	+
2	Providing toilets	1026	3.75	75	+
3	Providing internet facilities in school	1026	3.55	71	+
4	Providing computers for in-school	1026	2.81	56.2	+
5	Providing more classrooms	1026	4.08	81.6	+
6	Fencing schools	1026	2.88	57.6	+
7	Providing school laboratories	1026	4.07	81.4	+
8	Providing professional teachers in schools	1026	4.30	86	+
9	Providing libraries in schools	1026	4.15	83	+
10	Providing boarding facilities in school	1026	3.83	76.6	+
			3.70	74	
	Class Variable				
11	Providing computer facilities	1026	2.17	43.4	+
12	Providing sporting facilities	1026	3.33	66.6	+
13	Providing a meal a day for pupils	1026	4.14	82.8	+
14	Funding on excursion	1026	3.82	76.4	+
15	Providing uniform	1026	3.83	76.6	+
16	Providing textbooks	1026	3.91	78.2	+
17	Supplying furniture for pupils	1026	4.21	84.2	+
18	Reducing class size for pupils	1026	3.79	75.8	+
19	Providing toilet facilities for pupils	1026	2.93	58.6	+
20	Spending on inter school competitions	1026	2.64	52.8	+
			3.45	69	
	Teacher's Variable				
21	Funding in teaching instructional material for teachers	1026	3.85	77	+
22	Providing technological tool like computers	1026	3.77	75.4	+
23	Funding in-service training of teachers	1026	2.39	47.8	
24	Providing transport facilities to teachers	1026	2.21	44.2	
25	Pay allowances as at when due	1026	4.10	82	+
26	Providing medical services to teachers	1026	3.93	78.6	+
27	Improving salary structure	1026	2.59	51.8	+
28	Paying teachers salary as at when due	1026	4.38	87.6	+
29	Providing comfortable staff room	1026	4.32	86.4	+
30	Rewarding hardworking teachers.	1026	3.15	63	+
			3.47	69.4	
	Grand Mean		3.54	70.8	

NOTE: Positive sign (+) represent Significant Investment

Table 1.2: Summary of the Factors Consider to be Determinant of Investment Priorities of Basic Education during Inflation

	School variables	Teachers Quality variables	Class- size variable
Mean	3.70	3.47	3.45
Percentage (%)	74	69.4	69

From Table 1.2, the mean rating of factors being considered as priorities Investment in

Basic Education during inflation are school size factors 3.7 (74%), teacher related factor

3.47 (69.4%) and Class size related variable with 3.45 (69%) responses. This signified that school related factor had the highest rating among others of teacher and class- size related factors. The grand mean of 3.54 (70.8%) implies that all the school resources were rated as significant investment choice in Basic education.

Research Question 2: What prevailing variables in each factor best determine teachers' investment priorities in Basic Education during inflation?

To answer this question, the responses of each factor in table 1.1 were analyzed in relation to the variables in each of the three factors (school size, class- size and teacher related factor). Teacher related factor: as shown in item 28 which is paying teachers salary as at when due 4.38 (87.6%), school size factor: providing professional teachers in schools, as shown in item 8 has the highest mean rating of 4.30 (86%) and class- size factor: item 17 which are supplying furniture for pupils 4.21(84.2%) are the prevailing variables in each factor that best determine teachers' investment priorities in Basic Education during inflation

Research Question 3: What variable among all the factors has the highest rating by teachers as priority for investment in Basic Education during inflation?

A careful look at the percentage rating of all the variables in table 1.1 shows that paying teachers' salary as at when due 4.38 (87.6%) rating has the highest rating by teachers as priority for investment in Basic Education during inflation.

Discussion
Factors teachers consider most important for investment in Basic Education during inflation: The finding revealed that school related factor 3.7 (74%) was rated as the highest important investment priority, while teacher related factor 3.47 (69.4%) and Class size related factor 3.45 (69%) pooled second and third position in the teachers' rating priorities. This finding is in agreement with the studies of Akpotu (2018), Ehiametalor (2021), Egboro (2021) who opined that the education industry has inputs in the form of human resources (students, teachers and other personnel) and material resources (equipment, facilities and funds). The result of the study has relevance for the necessary input mix investment in the school system in order to attain effective learning which by so doing, the right priorities of investment will be made in the educational system at this present time the country experience inflation.
Prevailing variables in each factor that best determine Teachers' Investment priorities in Basic Education during

inflation: The finding showed that for School size factors: the provision of professional teachers in schools 4.30 (86%), Class- size factor: Supplying furniture for pupils 4.21(84.2%) and Teacher related factor: Paying teachers salary as at when due 4.38(87.6%) are the variables that best determine teachers' investment priorities. The finding supports Ayodele (2019) that an increase in teacher quality and reducing class size will tend to reduce wastage ratio. Thus investing on professional teachers, good remuneration package, facilities such as furniture, library, computers that are in dearth need in most basic schools may have impact on academic performance of pupils in the school system.

Highest rating variable by teachers as priority for investment in Basic Education during inflation: The study revealed that payment of teachers' salary as at when due 4.38 (87.6%) was rated as the highest variable teachers prioritize for investment in Basic education during inflation. This finding corroborates William and Michele (2012) who found that economic incentive matters for educational performance. Payment of teachers' salaries on time has implication on teacher's concentration in class teaching because teachers find other means of making ends such as trading if they are not paid as at

when due thereby neglecting teaching in school. This observed teachers' prioritization on investment in Basic Education may be due to the poor remuneration, conditions of service and delay teachers had encountered over time. Hardly do teachers enjoy any improved salary and better conditions of service without fighting for it through threats and strike actions. Thus the self esteem of teachers have been eroded and many related vices such as undue politicization of education, mismanagement, corruption, and related problems where mediocrity rather than meritocracy considerations take precedence in the affairs of education. The best brains have gradually drifted away as a result of unfavourable conditions of service for serving teachers.

Conclusion

From the study, it is concluded that investing in providing teacher salaries as at when due as well as provision of professional teachers in basic schools should be given priority attention in choice of investment. School related variables such as building of more classrooms should also be considered when investment priorities are being made in basic education. There is the need for a paradigm shift from foisting policies on teachers to proper consultation and seeking teacher

perception on priorities of investment in schools.

Recommendations

Based on the emerging findings, the following recommendations were proffered:

1. Priority investment on teachers' salary and professional training in schools such as regular salary adjustments, workshops and seminars for teachers.
2. School size variable such as providing libraries, computers and school fencing should also be given attention in school resource investment through increased budgetary allocation.
3. Planning and avoiding wastage of school productive resources through careful planning and strategic needs assessment.
4. Consultation with Actual users of education resources through surveys, focus groups, or advisory committees whenever resources investment priorities are being debated in political arena as they are in best position to know their more felt needs. In this way, frivolous investment can be avoided.
5. Government should respond promptly to teacher's recommendation through the down-line authorities such as School-Heads, Chief Inspectors of Education and other designated UBE monitoring bodies if the schools are to function efficiently.

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Nigeria's Road to Economic Recovery and Reconciliation and the Significance of Humanistic Education

By

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Abstract

Nigeria faces significant challenges in its political, economic, and security landscapes, including religious diversity, unemployment, poverty, and violent conflict. Addressing these complex issues requires a multifaceted approach, with education playing a crucial role. This paper explores the potential of humanistic education to foster social cohesion, stimulate economic recovery, and promote national reconciliation. Grounded in the theory of critical pedagogy, particularly as articulated by Freire, this study investigates how humanistic education can effectively tackle the intertwined difficulties within Nigeria's socio-political and economic frameworks. Utilizing an existential phenomenological approach, this research examines issues such as humanistic education, national reconciliation, economic revitalization, the challenges of implementing humanistic education in Nigeria, and its role as a strategic solution. The significance of this study lies in the recognition that humans are inherently problem solvers seeking meaningful true life experiences, with education being integral to this journey. The conclusion drawn is that humanistic education is essential for cultivating a more equitable, peaceful, and prosperous society, thereby driving sustainable development for the future. However, it is emphasized that for education to succeed in this transformative role, strong political will is necessary to support its revitalization efforts.

Keywords: *Humanistic education, national reconciliation, economic revival*

Introduction

Nigeria is grappling with a myriad of significant political, economic, and social cohesion challenges, including multiculturalism, religious tensions, unemployment, pervasive poverty, political instability, and violent conflicts. These complex issues necessitate a multidimensional approach, highlighting the crucial role that education can play in fostering progress and stability. Humanistic education, characterized by its emphasis on critical thinking, problem-solving, personal growth, self-actualization, and the cultivation of compassionate, socially

responsible citizens, presents a compelling strategy for addressing these pressing concerns. This paper investigates the potential of humanistic education to promote national reconciliation, stimulate economic revival, and enhance social cohesion in Nigeria. Grounded in the philosophy of critical pedagogy, the inquiry seeks to answer the pivotal question: How can humanistic education effectively address the challenges of social cohesion, political stability, and economic revival in contemporary Nigeria? To explore this question and related issues, the paper

adopts an existential phenomenological approach in examining key concepts such as humanistic education, national reconciliation, economic revitalization, critical pedagogy, the challenges associated with implementing functional humanistic education in Nigeria, and the role of humanism as a strategic solution to the identified issues. The urgency of this exploration stems from the understanding that humans are inherently problem-solving beings who seek meaningful and realistic true life experiences.

Despite Nigeria's rich cultural diversity and human capital, the country remains plagued by profound social divisions, economic disparity, and political instability. Inter-ethnic and inter-religious conflicts – exemplified by the frequent clashes between herders and farmers in the Middle Belt and terrorist activities by groups like Boko Haram in the North-East and Militancy in the South-South – underscore the urgent need for a cohesive national identity and unity. Additionally, soaring unemployment rates, particularly among the youth, contribute to an environment of frustration and potential unrest. The lack of a well-rounded education system that fosters critical thinking and social responsibility further exacerbated these challenges, leading to a cycle of poverty and instability.

The motivating factors for pursuing humanistic education in Nigeria are clear. For instance, the rising tide of youth unemployment seems to have created a generation disenfranchised and vulnerable to extremist ideologies to the extent that they see schooling as a scam and take to internet fraud. In a country where over half the population lives below the poverty line, the potential for social unrest is palpable. Moreover, the historical context of Nigeria's civil war and recurring ethnic tensions suggests that education can be a powerful tool for promoting national reconciliation and understanding among ethnic nationalities and diverse groups. Empirical evidence from initiatives that integrate humanistic education principles in community development – such as programmes that foster dialogue among tribal leaders – demonstrates that education can effectively reduce tensions and foster social cohesion. Thus, the implementation of humanistic education in Nigeria is not merely an educational reform; it is a critical strategy to addressing the country's entrenched socio-economic and political challenges.

Freirean Theory of Critical Pedagogy
Critical pedagogy is a philosophical approach to education that positions teaching as a political act, intrinsically connected to social justice and the empowerment of learners. Rooted in Paulo

Freire's (1970) influential work, the core premise of critical pedagogy is that education must address social inequalities and cultivate critical consciousness among learners. The theory emphasizes the dialogical method, which fosters open, respectful, and meaningful conversations between teachers and students. This method facilitates mutual learning and strengthens the social construction of knowledge, moving away from traditional teacher-centred approaches to more collaborative teacher-student relationships. In such an environment, the student is encouraged to engage in fundamental questioning and explores real-life issues in a democratic space, marking education as a practice of freedom rather than a passive knowledge transfer (May-Varas, 2023; Knight, 1989; Freire, 1970).

Another crucial aspect of critical pedagogy is the process of conscientization, which develops the learner's awareness of social, political, and economic contradictions. By understanding the forces that shape their lives, the learner gains the agency to effect positive change and pursue social justice, economic resilience, and political emancipation. The curriculum must be culturally relevant and responsive to the learner's background, ensuring that diverse perspectives are valued and included (Nussbaum, 2010; Ozmon & Craver, 2008; Freire, 1970).

Despite its transformative potential, critical pedagogy faces challenges in practical implementation, particularly within traditional education systems that may restrict its principles through standardized curricula, assessment methods, and institutional barriers. Also, effective critical pedagogy requires well-prepared and committed educators. Balancing the identification of oppression with the promotion of hope and action is crucial for fostering an empowering educational environment (Hooks, 1994; Knight, 1989; Giroux, 1988).

Critical pedagogy provides a foundational framework for the present study by promoting empowerment, dialogue, cultural relevance, and the challenge of social inequalities. These principles are fundamental to addressing the complex issues of economic recovery, national reconciliation, and social cohesion in the Nigerian context. By applying the tenets of critical pedagogy, this study can contribute to strategies that foster understanding, cooperation, and shared goals among ethnic nationalities in the Nigerian state. Critical pedagogy serves as a powerful framework for rethinking education, aiming to create a more equitable and inclusive society while addressing the pressing issues of national reconciliation, social cohesion, and economic revival (Ireyefoju & Ireyefoju, 2010).

Humanism and Education

Humanism is a philosophy which believes in the potential, welfare, intelligence and supremacy of man or in man as the measure of all things. Its focus is over human interests, human welfare and happiness. As a philosophy of education, humanism provides a set of moral resources with which the individual learner learns how to become human in relation to other individuals. While this moral understanding may appear perfectly reasonable in some quarters of the educational setting, it seems not to make sense under the current global conditions, where a sense of morality has to be applied to education and learning (Zhang & Tian, 2024).

Humanism has been understood and utilized in a way more closely aligned with the task of education. The link between the two has been less pronounced. However, it could be the case that humanism has always had an almost necessary relation with education. This is because, as a theory of the human person and its place within the world, it has helped educationalists and philosophers of education to develop curriculum and pedagogical strategies. Humanistic education is an education that is conducted based on the work of humanistic psychologists, most notable among them are Abraham Maslow, Carl Rogers and Rudolf Steiner. It is a process of education which emphasizes one-on-one teaching,

connections and empathy between teacher and learner and a personalization of the teacher as something. It seeks to engage the whole person's intellects, feeling life, social capacity, artistic and practical skills, which are all important focuses for growth and development. It has the objective of including and developing the learner's self-esteem, ability to set and achieve appropriate goals and development towards autonomy (UNESCO, 2023; Holt, 2023). It also suggests that the learner only acts in a good or bad manner because of the reward or punishment, and could be trained based on that desire for a reward (Macleod, 2018). Earlier in its humanistic psychology, Maslow claims that learners are inherently good and will make good decisions when all their needs are met. The idea that learners brings out the best in themselves and driven by their feelings more than rewards and punishments is a focus that was demonstrated by Maslow's works. This underlying human, emotional issues, was developed to harnesses the idea that if the learner is upset, sad, or distressed, they are less likely to focus on learning (Rogers, 1961; Maslow, 1943). This could probably encourage the teacher to create a classroom environment that would help the learner feel comfortable and safe, so they could focus on their learning. The passions, rather than reason, are at the centre of humanistic

education (UNESCO, 2023; Holt, 2023; Kinnari & Silvennoinen, 2023).

The humanistic teacher has specific roles for success. For them, they are facilitator and role model within and without the classroom. The specific roles of the humanistic teacher are as follows:

- *Teach learning skills* focus on helping the learner to develop learning skills and the learner is responsible for their learning choices. So helping the learner to understand the best ways to learn is basic to their success.
- *Provide motivation for classroom tasks* focus on engagement, so the teacher needs to provide motivation and exciting activities to help the learner feel engaged about learning.
- *Provide choices to the learner in task/subject selection* is central to humanistic learning, so the teacher has a role in helping the learner to make choices about what to learn. They may offer options, help learners evaluate what they are excited about, and more.
- *Create opportunities for group work with peers* creates group opportunities to help the learner to explore, observe, and self-evaluate. They can do this better as they interact with other learners who are learning at the same time that they are.
- *Teachers can help learners set learning goals* at the beginning of the year, and

then help design pathways for learners to reach their goals. Learners are in charge of their learning, and teachers can help steer them in the right direction.

- *Teachers can create exciting and engaging learning opportunities* by trying to help learners understand government can allow learners to create their own government in the classroom. Learners will be excited about learning, as well as be in-charge of how everything runs.
- *Teachers can create a safe learning environment for learners* by having snacks, encouraging learners to use the bathroom and get water, and creating good relationships with learners so they will trust speaking to their teacher if there is an issue (Western Governors University, 2007).

Humanism is related to this present study in the sense that it may help to reducing absolute dependence on religion and the Ultimate Being as solutions to human problems in the Nigerian state.

National Reconciliation and Economic Revival

National reconciliation and economic revival are interdependent concepts that are essential for growth and development in Nigeria's multicultural society. The two variables indicate that Nigeria has passed through some difficult moments and there

is need to look inward and ask fundamental questions that are necessary for her sustainable growth and development. What, then, is national reconciliation and economic revival in the context of modern-day Nigeria? National reconciliation is the process of rebuilding relationships between different ethnic nationalities, communities, and individuals after a period of conflict or division. Since the forceful amalgamation of the various ethnic nationalities into one country, there seems to be feeling of betrayal, lack of faith, trust and confidence in the Nigerian project. This is because, to some of them, the Nigerian project is a sham. Several strategies such as “operation feed the nation” “national youth service corps” (NYSC), “Unity Schools”, “change begins with you”, and “Oputa Reconciliation Panel” were put in place for the purpose of reconciliation and to encourage national unity and national consciousness. Unfortunately, these attempts were fluke because “conceived values” are not the same as “operative values” in man’s existential experiences. That is, the people and their government were too idealistic about their national goals (Momodu & Ireyefoju, 2017; Ireyefoju & Momodu, 2014; Ireyefoju & Ireyefoju, 2010). Reconciliation is critical to addressing historical, political, economic, and social grievances that have led to conflicts and tensions among various

ethnic nationalities, religious groups among others. The Oputa Reconciliation Panel was government attempt at reconciliation. Its efforts involve initiatives such as truth-telling, apologies, reparations, and institutional reforms to promote justice, equity, and inclusiveness. Although, the intention was a good one, the end result seems to be a waste of time and resources because once again the Nigerians failed to tell themselves the truth.

Economic revival refers to the process of revitalizing and strengthening the economy after a period of crisis, recession, or stagnation. Economic revival is crucial to addressing the country’s development challenges, including poverty, inequality, and unemployment. Economic revival strategies include among other things fiscal discipline, monetary policy reforms, trade liberalization, investment in infrastructure and human capital, and promoting economic diversification. The current dependence on mono economy is an indication that the people have to diversify the economy by encouraging entrepreneurial skills and leveraging essential technologies for sustainable growth and development (UNESCO, 2023; Katoch & Sharma, 2017).

The relationship between Reconciliation and Economic revival is that reconciliation and economic revival are interconnected; reconciliation has the capacity to create a

conducive environment for sustainable economic growth and development. The perpetuation of the conflict in the Niger-Delta is pointer to this fact. Secondly, reconciliation can address the root causes of conflicts, promote peace, stimulate social cohesion, and build trust among different ethnic nationalities, which can foster a stable and predictable environment for economic investment and growth. Conversely, economic revival contributes to reconciliation when its purpose is to address some of the underlying grievances and inequalities that may have contributed to conflicts. Nigeria faces several challenges in achieving national reconciliation and economic recovery, including political polarization, nepotism and favouritism, corruption, insecurity, and inadequate infrastructure. However, there are also opportunities for Nigeria to leverage its natural resources, demographic dividend, and technological advancements to drive economic growth and reconciliation. The government, civil society, private sector, and international community must work together to create an enabling environment for reconciliation and economic revival.

Existential Phenomenological Method

Existential phenomenology is a philosophical tradition developed by thinkers such as Buber, Kierkegaard, Nietzsche, Heidegger, Gadamer, de

Beauvoir, Sartre, Marcel, Merleau-Ponty, and Levinas. Existential Phenomenology is an attempt to understand how an individual experiences a phenomenon. It seeks to develop an in-depth, embodied understanding of human existence. The major focus is to enter the inner world of each participant to understand their perspective and experience (Johnson & Christensen, 2014; Unah, 2002). As a methodology, it deepens people's understanding of the experiences and perspectives of others through its focus upon the meanings that they make in their lives and the choices that are reflected in their understandings and actions. It nourishes openness to understanding the lives and needs of others by helping them to identify and set aside our theoretical, ideological prejudgments, superstition, and bias as they approach their studies as researchers (Johnson & Christensen, 2014). Existential phenomenology attempts to understand how people experience a phenomenon from each person's own perspective. This is because existential phenomenology challenges the modern tendency to interpret the human condition through a set of narrow technological lenses. It also challenges approaches which view human beings in a reductionistic way. Finally, the existential-phenomenological approach is ethical in recognizing that the

fundamental characteristic of being human is to be responsible to others.

Challenges of Humanistic Education to National Reconciliation and Economic Revival

Humanistic education is concerned with the development of the whole person and focuses on personal growth, self-actualization, self-reliance, and fostering a sense of social responsibility. There are elements of humanistic education in the national policy on education (NPE) when it emphasizes the utilitarian nature of education. However, its utilization is situational in the sense that, even though the learner is at the centre of the Nigeria education system, they learner have some limitations as a result of cultural boundaries. The progressive nature of existential-humanistic education may not be able to change the mindset of the learner because the school is not a continuation of the home in terms of knowledge, learning and teaching (Oyebamiji & Bello, 2013).

Another sociocultural and psychological challenge of existential-humanistic education is that in traditional African experience, elders and adults see the learner not good enough to think, provide adequate evidence for their argument, and cannot ask fundamental questions. So the learner is not given the opportunity to express themselves all the time, because there is a limit to which they can do so. This narrative has to change

for humanistic education to strive and provide sustainable solutions to the issues of national reconciliation, social cohesion and economic recovery in the country. There may also be cultural resistance to humanistic education principles, particularly in communities where traditional hierarchical structures and authoritative teaching methods are prioritized (Kalusi et al., 2018; Ireyefoju & Mogbeyiteren, 2009). What this means is that Africans encourage gerontocracy, the leadership of elders. The youths are not given prominent role in their affairs.

Thirdly, insufficient funding has been the hallmark of Nigeria's educational system. This is because her educational institutions are often faced with serious underfunding which are evidence in the area of infrastructure, resources, and teacher salaries. This lack of funding can limit the implementation of humanistic educational practices. In addition to this, every form of educational philosophy requires teacher professionalism and development. Many teachers are not adequately trained in humanistic educational approaches. The focus is often on rote learning and standardized testing rather than fostering critical thinking and personal development (Ireyefoju & Mogbeyiteren, 2009).

Another challenge is the rigidity of the school curriculum. A rigid curriculum that does not easily accommodate flexible and

student-centred approaches is not a requirement for humanistic education. The Nigerian school system has a centralized curriculum, which seems not to take cognizance of the prevailing circumstance of each region, and needs of each individual learner. Maybe, this could be the reason why the curriculum is examination-oriented. Every teacher encourages the learner to read and pass tests. Time allocation is meant to meet specific objectives and learning may not be applied to abstract things that demand critical thinking for the time allotted may not be enough for the teacher and learner (Ireyefoju & Mogbeyiteren, 2009).

Large class size could also be a hindrance to humanistic education in Nigeria. This is because individualized attention is a key component of humanistic education. Unfortunately, public schools in Nigeria are overcrowded. Overcrowded classrooms make it difficult for teachers to give individualized attention to the learner. The ratio of teacher to learners at all levels of education is only intentionally planned for in the NPE, practically, the learner population to the teacher is geometrically outrageous. Consequently, humanistic education cannot survive in such a situation (FRN, 2014).

Socioeconomic barrier which include living with poverty and disparities could mitigate the learner's ability to fully engage with and

benefit from educational opportunities. Many learners face external pressures that impact on their education, such as the need to work to support their families before they attend school each day. Some may have nothing to eat and what some of them eat may not be nourishing enough to stimulate critical thinking. The government feeding programme is not for every school, talk less every learner. This could be a hindrance to humanistic education in Nigeria. Not only this, effective humanistic education requires support services philanthropic organisation, community intervention, and counselling (Gupta et al., 2024; UNDP, 2019; Oyebamiji & Bello, 2013). Against these challenges, this paper still believes that humanistic education can still foster social cohesion, stimulate economic recovery, and promote national reconciliation.

Humanistic Education and Issues of National Reconciliation and Economic Revival in Multicultural Society

The nexus between humanistic education, national reconciliation and economic recovery centres on the idea that fostering a value-laden education can be a transformative tool for Nigeria's struggle against division along ethnic lines. Whereas humanistic education would emphasize the integration of values such as critical thinking, empathy, cultural awareness and development of the whole person into

educational curricula, national reconciliation would emphasise healing and rebuilding societal trust (UNESCO, 2021; Tawil, 2020). That is to say, humanistic education would promote understanding and respect for diverse perspectives which would basically help to bridge divides and facilitate dialogue between the majority and minority ethnic nationalities through shared common values. The nexus between humanistic education and economic recovery is that an educated populace is critical to economic revitalization. Because, humanistic education would essentially contribute to a workforce that is not only skilled but also innovative and resilient. As these individuals engage in economic activities, they contribute to rebuilding and diversifying the economy (Tawil, 2020; Galtung, 2019). In addition, humanistic education fosters social cohesion by instilling a sense of community and collective responsibility in the individual learner. When education promotes social values and encourages collaboration, it enables individuals from varying backgrounds to work together towards shared responsibility and common societal goals, which is essential for maintaining peace and stability (Morrison, 2022; Harris, 2021). The point made here is that humanistic education serves as a foundational pillar that supports national reconciliation, drives economic recovery,

and enhances social cohesion. By rethinking education that cultivates critical thinking, empathy, cultural awareness and development of the whole person, the Nigerian state can address deep-rooted divisions like north-south dichotomy and build a shared vision for future generation. Thus, investing in this educational philosophy is not just about individual development; it is a strategic imperative for achieving sustainable peace and prosperity in the Nigerian state, where its definition of democracy is a game of number and a winner-takes-it-all affairs. Democracy is not just a system of government, but an institution which ought to protect the rights of both the majority and minorities in the Nigerian context (Ireyefoju, 2024; Brock & Cummings, 2020).

Conclusion

The conclusion drawn is that humanistic education is essential for cultivating a more equitable, peaceful, and prosperous society, thereby driving sustainable development for the future. However, it is emphasized that for education to succeed in this transformative role, strong political will is necessary to support its revitalization efforts. By focusing on personal growth, critical thinking, and social responsibility, humanistic education could empower individuals to contribute to national reconciliation, economic revitalisation and social cohesion.

Suggestions

Based on this conclusion, to address issues of national reconciliation and economic recovery in Nigeria, the following suggestions were advocated:

1. To address the economic challenges aggravated by poverty, unemployment, and weak governance, it is recommended that the Nigerian state implements a multifaceted strategy that includes the promotion of non-oil sectors, the encouragement of local manufacturing and industrialization, the strengthening of the services sector, and the enhancement of governance efficiency. Such measures are essential for diversifying the economy, creating sustainable job opportunities, and improving the overall welfare of the populace, thereby facilitating Nigeria's transition from its current economic difficulties.
2. To tackle the problem of large classroom sizes within the school system, it is essential for the government and local communities to construct and provide additional classrooms. This initiative will facilitate the effective application of humanistic education principles and practices in the educational environment.
3. The Nigerian education system should implement metrics to evaluate the effectiveness of humanistic education

initiatives in promoting economic recovery and reconciliation. Conducting regular assessments will aid in refining strategies and ensuring that educational programs effectively address the needs of the community.

4. To tackle the challenges of national reconciliation and economic revival in Nigeria, it is essential to establish a dialogue platform that unites diverse community groups to discuss economic issues and reconciliation initiatives. Humanistic education can significantly contribute to these discussions by fostering understanding and respect for various perspectives within the classroom setting.
5. It is essential to organize workshops and seminars for school administrators and teachers focused on the principles and practices of humanistic education. By understanding the fundamentals of humanistic education, educators can develop sustainable strategies that enhance classroom experiences and foster student growth.

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Psychosocial Correlates of Parental Involvement in Post-Registration Truancy among Secondary School Students in Nasarawa State, Nigeria

By

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Abstract

The study examined psychosocial correlates of parental involvement in post-registration truancy among secondary school students in Nasarawa West Senatorial District, Nasarawa State. Two research questions were raised to guide the study, and one hypothesis formulated and tested. The study employed the use of correlational survey research design. The targeted population was junior secondary school students in public secondary schools with total population of 67,087. The sample size for the study consisted of 382 male and female students, collected by using the stratified random sampling techniques. The instrument used for data collection was a self-developed questionnaire titled: Psychosocial Correlates of Parental Involvement in Post Registration Truancy (PCPIPRT-Q). The instrument was face and construct validated by experts and its reliability was ascertained using Cronbach coefficient which yielded a reliability index of 0.79. The data were analyzed using Pearson's Product Moment Correlation to answer the research questions and linear regression was used to test the hypothesis at 0.05 level significance. The result of the study revealed that there was significant contribution of the independent variables (parental involvement and socioeconomic status – parents' educational level) to post-registration truancy among secondary school students and relative contribution of the independent variables (parental involvement and socioeconomic status – parents' educational level) to post-registration truancy among secondary school students. The study recommended frequent sensitization and orientation programmes for parents on the importance of parental involvement on the academic life of the students.

Keywords: *Psychosocial*, post-registration, correlates, truancy, students

Introduction

Truancy is one of the many inappropriate behaviours and antisocial discipline problems among secondary school students in Nigeria. Despite the numerous benefits of attending school regularly, truancy seems to persist among students in schools. According to Ugbodaga (2022), of all the identified indiscipline acts among students in secondary schools, truancy had the largest number; even

more than gangsterism. Truancy has been described as a cankerworm that has eaten deep into the fabrics of the educational programmes and has caused a lot of setbacks for secondary school students in their educational pursuits. Truancy is quite typical and likely to create problems which can lead to varied set of negative and even more dangerous consequences.

In a broad term, truancy is simply defined as an unapproved absence from school, usually without a parent's knowledge. It can also be described as any intentional unauthorized or illegal absence from compulsory schooling. Truancy is a serious delinquent behaviour characterized by students that often leads to other deviant behaviours. It is running away from school or classes without the consent of school authorities. That is the habitual staying away of students from school and class without permission to avoid responsibilities such as assignments, test, examinations and other extra-curricular activities. Okwulanya (2022) also defined truancy as keeping away from school during school hours with neither the permission of the parents nor school authorities with a view to avoiding punishment, dodging specific functions and neglecting certain lawful school duties.

Truancy can be classified as blanket and post registration truancy. For the purpose of this study, post registration truancy is the focus. As defined by Eremie and Victor-Asia (2021), post registration truancy is where the student initially registered officially as being present at school only for him/her to dodge the subsequent lesson of the day. This form of truancy occurs when a student had marked the attendance register as being present in the

school, but decided to leave classroom or school premises without permission from any of the school authority. Over the years, the attention and efforts of scholars were focused on blanket truancy (i.e. absenteeism), while there have been conspicuous neglect of post-registration truancy.

The consequences of truancy span through the home, school, community and the students themselves. On the students, the consequence is short-term and long-term. The short-term effect include maladjustment, poor academic performance, dropping out of school, substance abuse, delinquency, unwanted pregnancy and several other risky psychosocial behaviours while the long term effects are job instability, marital instability, adult criminality and incarceration. In fact, an estimated 95% of juvenile offenders were those who started as truants. The effects of truancy on schools are loss of funds and failure to meet performance requirements (Goldstein, Little, & Akin-Little, 2019) while the community is challenged by the presence of students who engage in criminal activities such as robbery, substance abuse, cultism, political thuggery, vandalism and prostitution. It is therefore not an overstatement that such community will have higher government spending for social services and unproductive citizens. It should

also be noted that truancy is a prelude to school dropout syndrome that is being witnessed across many parts of the world. These negative and adverse consequences of truancy call for more research efforts in understanding factors that make students to engage in post registration truancy.

One of the independent variables that will be considered in this study is involvement of parents on the post registration truancy among adolescents in secondary schools. Parental involvement in schooling enhances students' academic performance, positive attitude towards school, time spent on homework and regular school attendance behaviour. If parents however, abdicate their responsibility towards their children to their teachers, the students may become delinquent. Again, parents' inability to inculcate good moral values may also negatively affect their children's academic achievement. Parents are the first agent and bedrock of socialization and education, upon which the school will build. Hence, failure or default on the part of the parents to do what is expected of them will set a bad tone for the future academic performance of any child. Parents have the most control over the developmental process of learning) and are expected to provide home environment and school support. Based on social cognitive

theory by Bandura, parents have the potential to model positive attitudes and behaviors toward school, and research in developed countries has shown that parental involvement contributes to youth academic success (Olatoye & Agbatogun, 2019). Indeed, adolescents who are not working hard at school may begin to perceive school as valuable when parents actively demonstrate that they value school through involvement. Hence, the higher parental involvement could be responsible for low level of post registration truancy; and vice versa. This study will lay more emphasis on the roles that parents play in ensuring that the adolescents not only attend schools, but also stay in school without absconding.

When considering the determinants of school attendance, there is robust evidence suggesting an association between children's socioeconomic background and truancy. Specifically, students from lower socioeconomic backgrounds are overrepresented among those absent from school and have a higher risk of post registration truancy than those from more advantaged socioeconomic backgrounds. The pathways between family socioeconomic status (SES) and school absenteeism are multifaceted and complex. According to developmental theories,

children from lower socioeconomic backgrounds face several individual and structural barriers that affect their developmental outcomes and subsequent educational experiences such as truancy (Gottfried & Gee, 2017). Although research on the mechanisms by which family SES influences absenteeism is limited (Gee, 2018), empirical studies suggest that the consequences of living in socioeconomic disadvantage have, in turn, detrimental effects on children's school attendance. For instance, children from lower socioeconomic backgrounds are at a greater risk of developing behavior problems that are known risk antecedents of being absent or excluded from school. Moreover, wealthy households have the ability to pay for the direct costs of schooling, such as school uniforms, books, and fees. In addition, children from wealthy families are less likely to be prevented from attending and/or withdrawn from school for child labour activities. Thus, socio-economic status of a family cannot be ruled out in understanding the determinants of students' behaviour, such as post registration truancy. While socioeconomic status is a prominent determinant of absenteeism, scholarly efforts have not been directed to post registration truancy which is a different phenomenon

entirely. This study will therefore help to unravel the likely connection between socioeconomic status and post registration truancy among secondary school students in Nasarawa state.

Statement of the Problem

One of the challenges facing the educational system in Nigeria has to do with the ugly incidence of students leaving the school premises before the closing time without taking permission from any constituted authority. Already battling with the problem of high rate of out-of-school children, the menace of post registration truancy is very rampant across different levels of school system, especially in secondary schools in Nigeria. It has been observed that the problem of post registration truancy is more pronounced among the adolescents in secondary schools. Hence, there is a need to focus more scholarly attention at this critical level of education; in order to nip in the bud, the problem of post registration truancy.

Meanwhile persistence and continuous manifestation of this act of indiscipline have direct and indirect consequences on students, parents, teachers, school and government. There are very many other antisocial behaviour such as thuggery, drug abuse, violence, etc. that are associated with post registration truancy. Adolescents are full of

energy and want to engage in something; so, if they leave school without permission, they can go about fomenting troubles and engaging in these antisocial and illegal behaviours. This means that rather than these students becoming useful member of the society, they could become spanner in the wheel against the peace, development and growth of the society. Nigeria is already facing a lot of criminal challenges; and continuous engagement of students in post registration truancy could lead to more of these adolescents being recruited by the criminal elements in the society. In addition, the overall performance of students in academic activities will also be low because students that are engaging in post registration truancy will not participate fully in the classroom activities. Invariably, the efforts and resources being spent on these adolescents by the parents and government will be a waste. Therefore, the study was one of the scholarly attempts at curtailing the problem of post registration truancy among secondary school adolescents.

Research Questions

The following research questions were answered in this study:

- i. What is the correlation between parental involvement and post-registration

truancy among secondary school students in Nasarawa West Senatorial District?

- ii. What is the relationship between socioeconomic status and post-registration truancy among secondary school students in Nasarawa West Senatorial District?

Hypothesis

For the purpose of this study, the following hypotheses were tested at 0.05 level of significance:

H₀₁: There is no significant relationship between parental involvement and post-registration truancy among secondary school students in Nasarawa West Senatorial District.

Methodology

The study employed the use of correlation research design. Emaikwa (2021) sees correlation research design as one in which a group of people or items are studied by collecting and analyzing data from a few people considered to be a representative sample of the entire population. The population consisted of 67,087 junior secondary school students from 483 public secondary schools in Nasarawa West Senatorial District (Nasarawa State Secondary Education Board). The sample comprised of 382 students selected from 4 junior secondary schools using stratified

random sampling techniques from secondary schools across the study area.

The instrument used for this study was a self-developed questionnaire based on the research variables in line with the research questions. The instrument was titled “Psychosocial Correlates of Parental Involvement in Post Registration Truancy” Questionnaire (PCPPIRT-Q). This questionnaire has four sections A, B, C and D. Section A: sought demographic information of participants. Section B is a measure of Post Registration Truancy. Section C sought to find out the Parents’ Socio-Economic Status of the respondents. Section D measured the involvement of parents in the secondary schools.

The instrument was face and content validated by two Professors’ from the department of Guidance and Counselling in Nasarawa State University Keffi. To

determine the reliability of the instrument, a trail test was done using twenty (20) JSS 2 students who did not participate in the main study for the first time and second time within an interval of two weeks. Cronbach coefficient was used in computing the internal consistency of the instrument. The reliability index of 0.79 was established.

The data collected for the study was analyzed using Pearson’s Product Moment Correlation to answer the research questions and linear regression was used to test the hypothesis. Two research questions and one hypothesis guided the study and the results were presented in Table 1 to 3.

Result Presentation

Research Question One: What is the relationship between parental involvement and post- registration truancy among secondary school students in Nasarawa West Senatorial District, Nasarawa

Table 1: PPMC on correlation between parental involvement and post-registration truancy among secondary school students in Nasarawa West Senatorial District, Nasarawa State

Variable	N	Mean	Std. Deviation	Df	r-cal	Sig
Post-registration truanc	382	10.11	1.31	380	-0.61	.000
Parental Involvement	382	21.55	0.46			

Table. 1 reveals the pearson product moment correlation coefficient (PPMC) on the relationship between parental involvement and post-registration truancy among

secondary school students in Nasarawa West Senatorial District, Nasarawa State. Based on the result in the table, the mean score for post-registration truancy and parental involvement

are 10.11 and 21.55, while the standard deviations are 1.31 and 0.46 respectively at 380 degree of freedom. In addition, the correlation index obtained from the table (r0.61) informs a negative relationship between parental involvement and post-registration truancy. Hence, there is a negative correlation between parental involvement and post-registration truancy

among secondary school students in Nasarawa West Senatorial District, Nasarawa State.

Research Question Two: What is the relationship between socioeconomic status (parents’ educational level) and post-registration truancy among secondary school students in Nasarawa West Senatorial District, Nasarawa State?

Table 2: Descriptive statistics on the relationship between socioeconomic status and post-registration truancy among secondary school students in Nasarawa West Senatorial District, Nasarawa State.

Variable	N	Mean	Std. Deviation	Df	r-cal	Sig
Post-registration truanc	382	10.11	1.31	380	-0.62	.000
Parental Involvement	382	5.71	0.58			

Table 2 shows the descriptive statistics on the relationship between socioeconomic status (parents’ educational level) and post-registration truancy among secondary school students in Nasarawa West Senatorial District, Nasarawa State. According to the result in the table, the mean score for and post-registration truancy are 10.11 and 5.71, while the standard deviations are 1.33 and 0.58 respectively at 380 degree of freedom. Furthermore, the correlational index (r-0.62) shows that a positive relationship exists between socioeconomic status (parents’

educational level) and post-registration truancy. Conclusively, there is a negative correlation between socioeconomic status and post-registration truancy among secondary school students in Nasarawa West Senatorial District, Nasarawa State.

Hypothesis

Hypothesis One: There is no significant relationship between parental involvement and post-registration truancy among secondary school students in Nasarawa West Senatorial District.

Table 3: Regression Analysis showing prediction of post-registration truancy by independent variables

Multiple R= 687					
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Multiple R = .610 Multiple R ² (Adjusted) = .601 Standard Error of Estimate = 1.92246					
Source	Sum of Squares	Df	Mean Square	F	f. Sig.
Regression	18254.530	2	9127.265	882.032	.000a
Residual	3073.451	297	10.348		
Total	21327.981	299			

a. Predictors: (Constant), parental involvement and socioeconomic status

b. Dependent Variable: post—registraflon truancy

Table 3 shows multiple regression analysis on relationship between parental involvement and post-registration truancy among secondary school students in Nasarawa West Senatorial District.. The regression table reveals that multiple R = .687, R² .610, adjusted R² .601, Standard Error of Estimate = 1.92246 and p-value = .000. Specifically, the independent variables jointly made 61% of the variance of post-registration truancy among secondary school students in Nasarawa West Senatorial District, Nasarawa State. This means that there is a significant relationship between parental involvement and post-registration truancy among secondary school students in Nasarawa West Senatorial District.

Discussion of Findings

The hypothesis sought to test the contribution of parental involvement in post-registration truancy among secondary school students in Nasarawa West Senatorial District, Nasarawa State. Based on the result of this study, it was clearly shown that parental involvement and

socioeconomic status (parents' educational level) had significant joint contribution to post-registration truancy among secondary school students in Nasarawa West Senatorial District, Nasarawa State. The result of this study corroborates previous studies that have been conducted in related areas. For instance, scholars like Chowa, Masa and Tucker, (2019); Olatoye and Agbatogun, (2019) supported through research findings that psycho-social variables are significant determinant of truancy among students. While the study by Olatoye and Agbatogun, (2019) supported that parental involvement is a significant psycho-social factor that determine truancy, Chowa, Masa and Tucker, (2019) discovered socioeconomic status (parents' educational level) to be one of the significant factors that determine truancy. McDaniel, Henson, Box, Slowick and Edwards, (2020) concluded that poverty and parental involvement were independent predictors of school truancy rates. Adelabu. Ovelana and Adelabu (2019) further affirmed

that socioeconomic status (parents' educational level) of a family cannot be ruled out in understanding the determinants of students' behaviour, such as post registration truancy. Imperatively, higher parental involvement and socioeconomic status (parents' educational level) could be responsible for low level of post registration truancy. Similarly, high parental involvement and socio-economic status, when combined, could reduce or eliminate cases of truancy among the students. The reason that could be given for this result is that, parent that get well involved in their children academic life and have good socioeconomic resources will monitor their children, ensure they get to school, visit the school, interact and relate well with teachers, as well as ensuring that their children do not belong to bad peer group that could have negative influence on them. Similarly, socioeconomic status (parents' educational level) had negative contribution to post-registration truancy among secondary school students in Nasarawa West Senatorial District, Nasarawa State. This study corroborates the findings by Ekpo and Ajake (2022) found that family socio economic status and the educational level of parents significantly influences students' delinquency. Similarly, Enwin, Okirigwe and Onu (2020) found that family background

contributes greatly to student's level of truancy in senior secondary schools. In addition, Hosokawa and Katsura (2018), Arowolo, Arowolo and Adaja (2019) found socio-economic background is responsible for much maladjusted behaviour of school adolescents. Gottfried and Gee, (2017) reasoned that children from lower socioeconomic backgrounds face several individual and structural barriers that affect their developmental outcomes and subsequent educational experiences such as truancy. Although research on the mechanisms by which family SES influences absenteeism is limited (Gee, 2018), empirical studies suggest that the consequences of living in socioeconomic disadvantage have, in turn, detrimental effects on children's school attendance. Similarly, children from lower socioeconomic backgrounds are at a greater risk of developing behavior problems that are known risk antecedents of being absent or excluded from school (Gubbels et al., 2019). In the same vein, children from wealthy families are less likely to be prevented from attending and/or withdrawn from school for child labor activities (Henry, 2017). According to consequences (Ngale, 2021), the negative consequences of poor socioeconomic status (parents' educational level) include truancy and absenteeism, poor

academic performance and illicit behaviour. To substantiate this study, Zhao, Valcke, Desoete and Verhaeghe (2019) reasoned high SES parents provide conducive home resources, home atmosphere, personal library books, study materials, food and other basic needs of life which children from low SES home do not have access to.

Conclusion

Based on the findings of this study, it could be concluded that socioeconomic status (parents' educational level) and parental involvement significantly correlates with post registration truancy among secondary school students in Nasarawa West Senatorial District, Nasarawa State.

Recommendation

Based on the conclusion drawn from this study, the following recommendations are offered:

1. There is the need to engage in frequent sensitization and orientation programmes for parents on the importance of parental involvement on the academic life of the students.
2. Since this study revealed the correlation between socioeconomic status (parents' educational level) and post-registration truancy, efforts need to be geared towards ensuring that parents are gainfully employed.

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Report on Validation of Cybercrime Related Behaviour Scale (CRBS) for a Survey of Guidance Services in Curbing out Cybercrime Related Behaviours among Senior Secondary School Students in Jigawa State

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Abstract

The aim of this pilot testing is to presents the validation procedures for the data collection instrument intended to be used for describing guidance services in curbing out cybercrime related behaviours among senior secondary schools in Jigawa state. The instrument to be used in the study was titled; Cybercrime Related Behaviour Scale (CRBS). The objective of the report in pilot testing was conducted with sample of thirty seven (37) SS II students which were randomly selected, 19 males from GUSS Ringim and 18 females from GGDSS Nassarawa all from Ringim Zone. The face validity of the instrument was established by the supervisor and experts in related areas. In the methodology content validity index of 0.96 was ascertained as a result of expert judgment. The divergent construct validity coefficient was found to be 0.040 after being correlated with another scores generated from GSQ-30 measure. In the findings of the report, the data collected were statistically analyzed to determine the internal consistency as well as reliability of stability of the items using Cronbach Alpha reliability test and test retest method through IBM SPSS Version 20. In Conclusion, the reliability coefficient obtained was 0.899 and 0.987 which indicated that the instrument is valid and reliable for collecting data for the proposed study. It was recommended that there is need to use appropriate items in the development of an instrument to be lined with objectives of the study and need to divide the items of the instruments in to sub construct instead to be in blocked.

Keyword: *Validation, cybercrime, related behaviours, guidance services, curbing – out*

1.0 Introduction

This paper attempts to discuss the report on validation of data collection instrument to be used in the study titled “A survey of Guidance Services in Curbing out Cybercrime Related Behaviours among Senior Secondary School Students in Jigawa state. Validation of a research instrument is one of the essential qualities of a test or any measuring instrument in conducting any piece of Educational

research. Validation entails determining the reliability and validity of a given measuring instrument which aimed at ensuring that the results or research findings generated are acceptable and free from any form of bias within the domain of Educational research (John & Soto 2007). Pilot testing are often recommended by scholars and other researchers in order to address a variety of issues including preliminary scale or

instrument development and validation. Specific concerns such as item analysis, investigation of construct validity, internal consistency reliability, response rates and other parameter of estimation in general are all relevant (Hulin, Netemeyer & Cudeck, 2001).

Pilot testing of the research instrument is the only way a researcher can be sure that everything will work according to plan (Uzoagulu, 2011). The purpose of pilot testing is to confirm the suitability of the research instrument. It is done for the following reasons such as identify problems or difficulties that might arise before the final administration of the instrument to the study samples, determine the appropriateness of the instrument, determine the difficulty and discrimination features of the items as well as determine the adequacy and accuracy of the instrument, test for the layout, language use, possible ambiguity, clarity of instructions, acceptability of the statement and length of the instrument. The paper highlighted brief introduction, statement of the problems of pilot testing, objectives and research questions of the pilot testing. Sample size of the pilot testing as well as the description of data collection instrument mentioned, validation of the instrument in terms of face,

content and construct validity and reliability of the internal consistency and finally discussion and conclusion were made.

Validity of the instrument is the degree to which an instrument measures what is supposed to measure. Reliability on the other hand, is the degree to which the measuring instrument consistently measures whatever it purports to measure whether an instrument is said to be valid or not; this can be established through the various ways such as; content validity, construct validity, concurrent validity and predictive validity (Ringim, 2019: 88). Moreover, a reliability of an instrument can be established through the following methods; parallel or alternate method, test-retest method, split-halves method, kuder-Richardson (20 and 21) method and Cronbach's alpha method (Kumar, 2011).

For any measuring instrument in educational research has to be considered worthwhile and acceptable to be used for data collection for generalizing research finding. It must have a reliability coefficient index of not less than .60. This reliability coefficient index is considered by the researchers as the statistical measure of reliability of any measuring instrument in research. This means that any research measuring instrument that has a reliability

coefficient index of anything below .60, so the measuring instrument should be considered as unreliable or invalid because it is assumed that the data to be generated with the instrument is bias.

The above explanations tend to highlight on the relevance of any measuring instrument to be credible and valid in conducting any piece of educational research. Therefore, this establish the need by the researcher to validate Cybercrime Related Behaviour Scale to be used in determining the influence of guidance services in curbing out cybercrime related behaviours among senior secondary school students in Jigawa state. Thus, the main research objectives, research questions and hypothesis are presented as an appendix.

2.0 Statement of the Problem

A time many research studies failed to meets the quality standards of measuring instrument for data collection. This might be as a result of poor quality assurance of measuring instrument and no doubt a research with poorly and unreliable instrument for data collection and the results leads to invalid findings and in turn misleading to the entire research community. Also the more valid and reliable a data collection instrument is the more valid the result is. If an instrument is

not truly valid and reliable, the results presented may be invalid, unreliable and misleading. After reviewing and consultation of available literatures and detecting the gaps that need to be filled, the most important things to be considered in conducting any research is sourcing the data to be used in filling that gap detected. No data or information could be sourced without having a strong, valid and reliable instrument for data collection. The instrument for data collection is among the most important keys of success to any research especially that of education.

Sometimes the face and content validity of the Scales developed by the researcher as well as the divergent construct coefficient validity were not in line with the objectives of the developing the instruments. In view of that test – retest reliability was neglected and apply only one test which will not show the expected report at the end.

As stated above, to obtain credible and accurate results in conducting any piece of educational research more especially a quantitative research that involves data collection from participants, the data to be collected should not be flawed or bias, it should be able to justify the research findings after analysis using relevant statistical means, it is able to give a true

picture of the situation. This is to say that the data to be generated must be dependable so as to produce acceptable or justifiable results. This can only be achieved through validation by making sure that the instrument to be used for data collection is reliable as well as valid. Hence in this presentation, a researcher intend to carryout validation of cybercrime related behaviour scale to be used in determining the influence of guidance services in curbing out cybercrime activities among senior secondary school students in Jigawa state.

3.0 Objectives of the Pilot Testing

The objectives of this pilot testing are; to establish:

1. The face and content validity of Cybercrime Related Behaviours Scale (CRBS) developed by the researcher.
2. The divergent construct validity of Cybercrime Related Behaviours Scale (CRBS) developed by the researcher.
3. The internal consistency reliability of Cybercrime Related Behaviours Scale (CRBS)
4. The test – retest reliability of Cybercrime Related Behaviours Scale (CRBS).

4.0 Research Questions of the Pilot Testing

Based on the above stated objectives, the following research questions were answered

1. What are the face and content validity of cybercrime related behaviours scale (CRBS)?
2. What is the divergent construct coefficient validity of cybercrime related behaviours scale (CRBS)?
3. What is the Alpha coefficient of cybercrime related behaviours scale (CRBS)?
4. What is the coefficient of stability of cybercrime related behaviours scale (CRBS)?

5.0 Methodology

The face validity of the instrument was established by the supervisor and experts in the areas of Tests and Measurement, Guidance and Counselling, Educational Psychology as well as Library and Information Sciences all from the Faculty of Education, Bayero University Kano. In the methodology Content validity Index of 0.96 was ascertained as a result of expert judgment. The divergent construct validity coefficient was found to be 0.040 after being correlated with another scores generated from GSQ-30 measure.

Sample Size of the Pilot Testing was employ in order to establish the face,

content and construct validity and the reliability of the data collection instrument for this study, the researcher conducted a pilot testing on a sample of 37 senior secondary school students which were randomly selected from a population outside sample. The said validation sample share similar characteristics in terms of location and socio-economic background. Eighteen (18) females' respondents were randomly selected from Government Girls Day Secondary School Nasarawa Ringim and the remaining nineteen (19) males' respondents were also randomly selected from Government Unity Secondary School Ringim both of them were under Ringim Educational Zone.

The idea behind the selection of the validation sample was according to Johanson & Brooks (2010) which suggested that 10% of the main study sample is adequate for pilot testing in survey research. Also the statement was in line with population of Connelly (2008) who maintained that 10% of the projected sample size of the main study should be enough for pilot testing. It is to be noted that the projected sample size of the main study is 370. Hence, 10% of 370 stand at 37 respectively. The table below shows the distribution of the sample among the selected schools.

Table I
Sample of the Pilot Testing

S/N	Name of Selected Schools	Number of Students
1.	GGDSS Nasarawa Ringim	18
2.	GUSS Ringim	19
Total		37

6.0 Description of Data Collection Instrument

The instrument for data collection was a researcher developed scale titled: Cybercrime Related Behaviours Scale (CRBS). The instrument was constructed to seek the opinions of the students towards cybercrime activities in senior secondary

schools. The purpose of selecting cybercrime related behaviours scale as an appropriate instrument for the research to stand as a medium of obtaining and processing information that would not have otherwise been obtained from large population. The instrument consisted of two parts and these are; A and B with a total of

30 items. The part (A) solicited for personal information of respondent including; zones, name of school, student I.D, Programme offered, type of school, form and gender. The part (B) requires the opinion of the respondents on the items raised on a survey of guidance services in curbing out cybercrime related behaviours among Senior Secondary School Students; the 30 items were designed in form of five-point likert type rating scale indicated as Strongly Agree (SA), Agree (AG), Undecided (UD), Disagree (DA) Strongly Disagree (SD) with value of 5, 4, 3, 2 and 1 respectively. Therefore, the instrument provided available information to the researcher from the respondents on the agreement or disagreement to the items rose.

6.1 Scoring Procedure

The items in the instrument were scored by the researcher using five-point likert type rating scale because the researcher has keen interest to find out the opinion of the respondents on the influence of guidance services in curbing out cybercrime related behaviours. The instrument has 30 items; the highest possible score a respondent could obtain is 150 (i.e. 5 x 30) while the lowest possible score is 30 (i.e. 1 x 30). The range was 120 (i.e. 150 - 30); the midpoint of range is 60. The cut-off point was

therefore 150 – 60 (i.e. maximum score minus (-) the mid-point of range) or 30 + 60 (i.e. the minimum score plus (+) midpoint of range), which was 90. Thus, respondents who obtained scores from 90 to 150 were considered as those who have higher level in terms of their perceptions to cybercrime related behaviours among senior secondary school students in Jigawa state. While those who scored below 90 were considered as those who have lower level in terms of their perceptions to cybercrime related behaviours.

7.1 Answers to Validation Questions

7.1 What is the face validity of Cybercrime Related Behaviour Scale (CRBS)?

The face validity of Cybercrime Related Behaviour Scale (CRBS) was established by presenting the instrument together with research's objectives, questions and hypotheses to the supervisor and other experts in the areas of Tests and Measurement, Educational Psychology, Library and Information Sciences, Special Education, Educational Guidance and Counselling within and outside Department of Education, Bayero University Kano for face validity. These experts were required to examine and improve its worthiness, simplicity of comprehension and

preciseness of measuring scale. The instrument was taken to the experts to ascertain the:

- a. Appropriate use of items in terms of language clarity in the study.
- b. Clarity of the statement in the instrument.
- c. Check possible errors in the proposed answers.
- d. The conformity of the items with the subject specification of the item.

Experts were suggested that, there is need for self-introduction before assurance of confidentiality. In part A, also need to provide options for each item such as gender, types of school and programme offered. Therefore, most of the experts were advice to modify items 6, 8, 12, 20 and 30 respectively. Finally, the instrument was

revised on the bases of the reports and observations made by the experts. So their inputs were effected and incorporated in to the final draft of the instrument. Evidences of face value judgment of the experts were (enclosed in appendix).

7.2 What is the Content Validity Index (CIV) CRBS?

The researcher first prepares the instrument for content validation form for the experts to have clarity of the domains as well as understanding of the concepts in each construct. Then, the selection of experts was done based on their areas of specialization and professional experiences in subject matter. Yusoff (2019) explained that, a minimum of two experts are adequate to determine the content validity of an instrument.

Table 2: Content Validity Ratios (CVRs) and Content Validity Index (CVI)

Item	N	NE	CVR	Item	N	NE	CVR	Item	N	NE	CVR
1	5	5	1	11	5	5	1	2	5	5	1
2	5	5	1	12	5	5	0.6	22	5	5	1
3	5	5	1	13	5	5	1	23	5	5	1
4	5	5	1	14	5	5	1	24	5	5	1
5	5	5	1	15	5	5	1	25	5	5	1
6	5	4	0.6	16	5	5	1	26	5	5	1
7	5	5	1	17	5	5	1	27	5	5	1
8	5	4	0.6	18	5	5	1	28	5	5	1
9	5	5	1	19	5	5	1	29	5	5	1
10	5	5	1	20	5	5	0.6	30	5	4	0.6
CVI										0.96	

Where:

CVR = Content Validity Ratio

CVI = Content Validity Index

N = Total number of Panelist;

NE = Number of subject matter experts indicating “essential” for each item.

The content validity ratios and content validity index is presented in the table above. The indices were derived from Lawshe (1975) formula using excel spreadsheet. From the table, it can be seen that, only 5 items did not meet the agreement of all raters i.e. items 6, 8, 12, 20 and 30, the obtained CVI was 0.96 which considered acceptable value as recommended by Lawshe (1975); CVI value of 0.8 and above with 3 or more experts is considered an acceptable content validity index.

7.3 What is the divergent construct validity coefficient of Cybercrime Related Behaviour Scale (CRBS)?

In an attempt to ascertain the construct validity of the CRBS, the instrument was subjected to discriminate construct validity. Discriminate or divergent construct validity is a type of construct validity established by presenting correlations between a measure of a construct and a number of other measure(s) that should not, theoretically, be highly related with each other, or shows an inverse relationship (Gregory, 2007, Jackson, 2012). Thus, discriminate construct validity of the instrument was ascertained by distributing copies of the instrument alongside copies of the General

Symptom Questionnaire-30 (GSQ-30) concurrently.

The GSQ-30 is a 30 item questionnaire which assesses symptom burden over a 2 week time period. Modeled after measures of somatic symptom burden in primary care, the PHQ- 15 (5) and the SSS-8 (6), the GSQ-30 asks: “how much have you been bothered by any of the following?” with five options: “not at all,” “a little bit,” “somewhat,” “quite a bit,” and “very much”

(scored 0–4); total score ranges from 0 to 120. The filled set of the two scales were scored and recorded by the researcher in an excel sheets. The responses were then exported to Software Package for the Social Sciences (SPSS) version 20 for correlation analyses (George & Mallery, 2003). Pearson Production Moment Correlation (PPMC) was performed to determine the correlation coefficients for the discriminate validity of the two scales as follows:

Table 3: Correlation between CRBS and GSQ-30

	Scales	CRBS	GSQ-30
CRBS	Pearson Correlation	1	.040
	Sig. (2-tailed)		.834
	N	30	30
GSQ-30	Pearson Correlation	.040	1
	Sig. (2-tailed)	.834	
	N	30	30

A Pearson Production Moment Correlation (PPMC) was performed via Software Package for the Social Sciences (SPSS) in examining the relationship between the CRBS and GSQ-30. From the result in the table above, it can be seen that there is weak correlation between the two scales where r was found to be 0.040 and the relationship between the two is not statistically significant ($P = .834 > .05$). Thus, based on the analysis, it can be inferred that, the established correlations between the CRBS and GSQ-20 measure were not theoretically highly related with

each other. This is an evidence of good discriminate validity (Gregory, 2007, Jackson, 2012).

7.4 What is the Cronbach’s alpha coefficient of Cybercrime Related Behaviours Scale (CRBS)?

To test the reliability of the instrument for data collection pilot testing was conducted using 37 subjects that are not part of the target population. The instrument was administered to the 19 male samples from GUSS Ringim and another 18 female samples from GDSS Nasarawa, Ringim to

determine the internal consistency of the instrument. Therefore, the data collected were analyzed statistically using scale

analysis and obtained the reliability coefficient of the instrument as shown in the table below:-

Table 4: Internal Consistency Reliability of Cybercrime Related Behaviour Scale (CRBS)

Scale	Number of Items	Alpha Value
CRBS	30	.899

The table 3 above shows that the overall internal consistency reliability index for (CRBS) was = 0.899 at $p < 0.00$, N 37 with 30 items. This indicates strong positive reliability coefficient for the items in the instrument. The CRBS analyzed to determine the internal consistency reliability via SPSS 20v. The outcome of the analysis revealed that, the Cronbach's alpha coefficient was found to be 0.899 which considered being satisfactory and reliable and good for research purpose (field 2005; Asika, 2006). Thus, it can be concluded that the Cronbach alpha reliability coefficient obtained was above the minimum acceptable level of 0.70 as suggested by Cortina (1993) that scales with 20 and above items can have 0.70 even when items inter-correlations are very

small. Based on this assertion, the (CRBS) is said to be reliable and in addition to the suggestion of George and Marley (2003:231) who posited a tiered approach of the following: $> .90$ = Excellent, $> .80$ = Good, $> .70$ = Acceptable, $> .60$ = Questionable, $> .50$ = Poor and $< .50$.

7.5 What is the coefficient of stability of Cybercrime Related Behaviours Scale (CRBS)?

To establish the reliability of stability for the Cybercrime Related Behaviour Scale (CRBS), the scale was administered to 37 samples at two different times after an interval of two weeks. Each student had two set of scores, the scores were subjected to scale analysis using Statistical Software for Social Sciences (SPSS) version 20.

Table 5: Intraclass Correlation coefficient of Cybercrime Related Behaviour Scale (CRBS)

	Intraclass		F Test with True Value 0		
	Correlation	Value	df1	df2	Sig
Single Measures	.974 ^a	108.605	36	36	.000 ^a
Average Measures	.987 ^c	108.605	36	36	.000 ^c

The Intraclass correlation coefficient was computed and presented in the table above to show the degree of absolute agreement between the two measurements. The Intraclass correlation coefficient of the average measures was found to be .987 and sig. value of 0.000. According to Gregory, (2007) and Jackson, (2012) correlation coefficient between two measurements should be moderate to high correlated (i.e. ± 0.40 to ± 0.70 is considered moderate correlation; ± 0.701 to 0.90 is considered high) before an Intraclass correlation coefficient is accepted. The Intraclass correlation coefficient of 0.987 fell within the range of high correlation and the relationship is significant at 0.000. Thus, the stability coefficient of Cybercrime Related Behaviour Scale (CRBS) stood at 0.987.

8.0 Discussion of Findings

The results of the pilot test indicated that, the overall reliability coefficient of 0.899 obtained.

Therefore, the result of reliability test answered the validation question 3 of the paper which is “what is the internal consistency (reliability) of the instrument for data collection (Cybercrime Related Behaviour Scale) (CRBS)? This indicated that the instrument is reliable as it is evident

from the overall reliability coefficient of 0.899. In the same vein, Hulin, Netemeyer and Cudeck (2001) in their findings indicated that, the alpha value of .6 to .7 is generally considered as acceptable reliability indices and .8 or greater is considered as very good reliability. Hence the instrument is acceptable and reliable to be used for data collection in the main study.

Similarly, the exercise ascertained the reliability of stability which as an answer to validation question 4 which says: what is the coefficient of stability of the CRBS? The study found out that the Intra class correlation coefficient of the average measures was found to be .987 and sig. value of 0.000 after two administration of the instrument in an interval of two weeks to the same set of sample (test retest). Thus based on the obtained the result, the CRBS was proved to have a strong stability over time. The paper examined the psychometric properties of the instrument to be used for data collection, the data collection instrument was self-developed by the researcher titled; Cybercrime Related Behaviour Scale (CRBS). Based on the forgoing activities of the validation of the instrument intended to use for the conduct of the main study (William, 2021), it was

indicated that, face content and construct validity for the instrument were sought. In the process of establishing the face, content and construct validity for the instrument of data collection; initially the researcher forwarded the developed instrument to the supervisor with the research's objectives and questions for his scrutiny and later it was forwarded to experts in Library Science Education, Tests and Measurement, Guidance and Counselling Educational Psychology, Special Education all inside and outside Department of Education, Bayero University Kano for face, content and construct validity. The experts made some observations and corrections and all were affected.

Thus, as an answer to question one (1) of the validation exercise, what are the face, content validity of the instrument for data collection instrument which is cybercrime related behaviours scale (CRBS)?. Therefore the instrument was now returned valid in terms of face and content validity, thus to be used for data collection for the main study. This also corroborated the assertion of Cohen, Manion and Marrison (2007:137) which opined that to demonstrate face and content validity, the instrument must show that it fairly and

comprehensively covers the domain or items that it purports to cover.

Moreover, the instrument is valid in terms of content validity; since it covers all the content hence it is valid for use in the main study. Kumar (2011) pointed out that, the judgment that an instrument is measuring what it is supposed to measure as primarily based upon the logical link between the question and the objective of the study. This is agreement with Awotunde and Ugodulunwa (2014) stated that instrument has and face and content validity when it shows clarity of language.

In the same vein, the procedures for validating instrument answered question two (2) of this exercise that is, what is the divergent construct validity of the instrument for data collection which is Cybercrime Related Behaviours Scale (CRBS). Therefore, the validation exercise found out that there is a weak and insignificant relationship between the CRBS and another parallel measure of GSQ-30. This is an evidence of good divergent construct validity. This in line with the assertion of Uzoagulu (2011) who opined that, divergent construct validity is the type of validity that measures the degree to which a two measuring instrument do not

accurately measure a theoretical constructs or traits that is design to measure.

On the other hand, in establishing the internal consistency of the items in the instrument (CRBS) was done by conducting a pilot testing using subjects that are not part of the target population. The instrument was administered to 18females' students of Government Girls Day Secondary School Nasarawa Ringim as well as 19 males' students of Government Unity Secondary School, Ringim respectively to determine the internal consistency of the instrument. The data collected were analyzed statistically using Cronbach alpha test to obtain the reliability coefficient of the instrument.

9.0 Conclusion

The main focus of pilot testing was to establish a validation procedure of the data collection instrument to be used in the study. The paper described the validity and reliability of the developed instrument. Based on the obtained psychometric properties of the measuring instrument and its sub-section. The instrument was found to

have face, content and construct validities based on the supervisor assessment and other experts from different field of knowledge. On the other hand reliability of the instrument was established using Cronbach alpha test and test retest method of reliability of stability. The result indicated that the coefficient values of 0.899 and 0.987 respectively. It is concluded that, the CRBS is valid and reliable to be used for data collection in the main study.

10.0 Recommendations

1. There is need to use appropriate items in the development of an instrument to be lined with objectives of the study.
2. There is need to divide the items of the instruments in to sub constructs instead to be in blocked.
3. There is need to increase the number of validaters from the Departments of Criminology and Sociology for more inputs when considering the topic of study.

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Comparative Study on Academic Performance in Biology between Convergent and Divergent Thinking Students at Senior Secondary Schools in Katsina Metropolis

By

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Abstract

This study compares academic performance in Biology between convergent and divergent thinking students in Katsina Metropolis, Katsina State. The study adopted quantitative research method in which Expos-Facto research design was used as research design. The population of the study (879) consists of all public senior secondary year II students in Katsina Metropolis offering Biology in 2023/2024 session. A total number of 261 students were selected in line with recommendation of research advisor table (2006). Simple random sampling technique was used to select subjects of the study. Biology Performance Test (BPT) and Convergent and Divergent Test Questionnaire (CDTQ) were used as data collection instruments. The BPT and CDTQ were developed by the researchers and validated by experts in the Department of Science and Vocational Education, Al-Qalam University, Katsina. The reliability coefficients of BPT and CDTQ were found to be $r=0.871$ and $r=0.912$ respectively. Hypotheses were tested using t-test independent statistics at 0.05 level of significant. The findings revealed that there is significant difference between academic performance in biology of convergent and divergent thinking students, there is no significant difference between academic performance in biology between male and female convergent thinking students and there is no significant difference between academic performance in biology between male and female divergent thinking students in Katsina Metropolis. It was concluded that students' cognitive learning styles have significant influence on academic performance in biology. The study recommended that teachers should endeavour to identify cognitive styles of individual students by conducting tests that will unravel the types of their cognitive styles and utilize relevant teaching methods to foster their academic performance in biology.

Keywords: Academic, convergent, divergent, performance, thinking

Introduction

Cognitive learning styles of students differ because of the way they think and this difference in their styles determines the way and manner they think and solve their personal, social and academic problems. Some are divergent in nature while a number of them are convergent. The distinctions between convergent and divergent thinking

students can only be examined by the way they respond to questions in the class (Tomar & Sharma, 2015). In the context of senior secondary education in Nigeria, the academic performance of students holds significant importance as it paves way for higher education pursuits and future career endeavors. Convergent thinking refers to the

ability to generate a single and well-defined solution to a given problem (Sandless, 2017). The thinking in this situation is not diversified, rather, converged, meaning this type of learning style do not require a lot of information in a diverged way. On the other hand, divergent thinking involves collection of different thoughts or ideas in diverged way and in response to a stimulus or stimuli. In the context of education, there is need for educators to know which of the children from convergent and divergent thinking excel academically as to enable teachers apply appropriate teaching approaches that could help the two categories of learners learn at the same pace. Learning styles refer to the methods by which individual student process new information in their minds. In other words, the personal methods used by an individual learner for information processing in learning new concepts are called learning styles (Koe, 2006) in Lipoff (2018).

Convergent learning style is an abstract conceptualization and active experimentation Williams (2019). People with convergent learning style have the ability of finding practical use for ideas and theories and solving problems (Lipoff, 2018). These individuals use hypothesis - deductive reasoning to solve problems. Generally, manipulation of objects, logical analyses of

opinions, planning, and learning through thinking are among the characteristics of students with convergent thinking learning styles (Anderson & Adams, 2002). Students with convergent learning style are more successful in specialized tasks and technology (Bogdan & Biklen, 2018).

Divergent learning style is formed by combining two methods of concrete experience and reflective observation. Learners with this type of learning style have tendencies for imagination from different perspectives and insights. In general, those with divergent learning styles are creative and have high social relationships and art background (Thompson, 2008) in Ali et al. (2013).

The idea of divergent thinking learning style has been developed by psychologist (Guilford, 2001) and since then educators have been searching for appropriate teaching methods suitable for this category of students so that they can excel in their academic pursuits. Ali et al. (2013) states that Divergent Thinking is based on four things: - Guilford Theory of Factor Analyzing of Creativity. - Piaget's Theory of Cognitive Growth. - Theories of contemporary intelligence "theory of multiple intelligences to Gardner". - Brain Theories. Divergent Thinking (DT) can be defined as a group of

invisible mental processes that occur in multiple directions as a result of new connections among neurons in the brain to help the individual adapt to different life situations. There are studies conducted on both divergent and convergent learning styles.

Literature Review

Ramadan (2016) conducted a study titled "impact of divergent thinking learning style on primary students' achievement in science". The sample consisted of two groups: the experimental from Kobry primary School and the control group from Al Talia' primary School for boys in Cairo. Both of them were from 6th basic students. An achievement test was constructed by the researcher to measure students' improvement in science. The findings showed that there were significant statistically difference between the mean scores of the experimental group and the control in which improvement was in favor of the students from experimental group. The teaching of biology as a subject in senior secondary schools is faced with many problems. The poor academic performance of students in biology as indicated in the report of WAEC (Bah, 2023) has generated public outcry and at the same time a threat to the interested students trying to pursue their career in biology related courses. Biology is

a very important subject; it has to be given more priority because its enables one to study any science related courses at higher institute of learning. The knowledge acquired in Biology is applied in many fields such as Medicine, Biochemistry, Pharmacy, Microbiology and Agriculture among others (Paul, 2018). Ogunjimi, Olutola and Sheu (2017) concluded a research to find out which of the students perform academically better between convergent and divergent thinking learning style. They found that there is significant difference between the two categories of learners and the difference was in favour of students with divergent thinking cognitive style. Furthermore, Gappi (2013) explored students' preferred learning styles and their academic performance. His findings showed that there was no significant effect of gender, age and academic program on the learning styles preference of students. Also, he found that there was significant effect of gender, age and academic program on the students with divergent learning style. The problems of student's underachievement in biology have been observed by many researchers and viewed in different angles due to its diversity. Chan and Lau (2011) put it that directly or indirectly classroom interactions are controlled by the teacher and he is responsible to enhance students'

academic performance through organization of experience, selection of appropriate instructional materials and methods to facilitate teaching and learning. Nwike and Catherine (2019) were of the opinion that inadequate supply of teaching and learning resources such as chemicals, charts, apparatus, models, local specimens, laboratories, textbooks, and libraries led to poor performance in Biology were the factors responsible for inability of the teachers to identify which of the learning styles between convergent and divergent is most suitable for the students to excel in their academic pursuits. The above mentioned studies indicate factors responsible for low academic performance of students in biology. In order to improve students' academic performance in biology, students have to be taught biology using different learning materials so as to enable them discover their learning styles which in turn will help to improve their academic performance in biology.

Statement of the Problem

Students' way of thinking is one of the factors that affect their academic performance. They think differently, some are convergent while others are divergent in the way they think. This makes them learn and understand lessons at different pace. These two types of students do not think and reason the same

way when trying to solve academic or related problems. In fact, in a classroom setting, students possess different cognitive learning styles which give rise to differences in their academic performance. The poor academic performance among senior secondary school students has been linked with a number of factors. Ibrahim (2016) conducted a research to examine the influence of personality traits on students' academic performance in biology. Adebisi, Dekunle and Femi (2016) also conducted a research to determine influence of students' attitude and interest on students' academic performance in biology in senior secondary schools. Despite all these efforts, the percentage failure keeps increasing. The current research explores influence of cognitive learning styles on academic performance in biology. Senior secondary school stage is a crucial period for students to develop cognitive learning skills that are capable to enhance their academic performance and also to their future endeavors. Thus, the interplay between these two types of cognitive learning styles and their influence on academic performance among senior secondary school students forms the basis for this comparative study conducted by the researchers. This comparative study will help to unravel the best cognitive learning styles between

convergent and divergent learning styles students should adopt as to enhance their academic performance in biology.

Objectives of the Study

The objectives of the study are to:

1. determine the differences in academic performance in biology between convergent and divergent thinking students in senior secondary schools in Katsina metropolis.
2. identify the differences in academic performance in biology between convergent thinking male and female students senior secondary school students in Katsina metropolis.
3. examine if there is difference in biology academic performance of divergent thinking male and female senior secondary school students in Katsina metropolis.

Hypotheses

1. There is no significant difference in academic performance in biology between convergent and divergent thinking senior secondary school students in Katsina metropolis.
2. There is no significant difference in academic performance in biology between convergent thinking male and female senior secondary school students in Katsina metropolis.
3. There is no significant difference in the academic performance in biology between

divergent thinking male and female senior secondary school students in Katsina metropolis

Methodology

The study employs Quantitative Research Method. Expos-Facto research design was used as research design. The study aims at collecting information from respondents on their cognitive styles (convergent and divergent) which were considered non manipulated variables. This means the researcher cannot influence the variables under investigation. This design was chosen because of its ability to obtain quantitative data with regards to the existing cognitive styles and how they influence academic performance in Biology.

The Population of this Study is all the senior secondary schools (SS2) offering Biology in Katsina metropolis, Katsina State. The Population of the students comprises of 879 Senior Secondary Schools (SS2) students. Five schools were randomly sampled from all the eleven schools that made up the population of the study. Random Sampling Techniques was used for selecting samples from the target population. 261 students were chosen as sample size and this was in accordance with the recommendation of Research Advisor (2006). Screening tests using divergent and convergent

questionnaires were administered to the students to identify those that were divergent and those that were convergent among the students. These instruments are Convergent and Divergent Test Questionnaire (CDTQ). Biology Performance Test (BPT) was used to collect individual student's score.

Copies of the instruments were taken to experts in the Department of Science and Vocational Education, Al-Qalam university, Katsina, Katsina for face and contents validity and as to examine the appropriateness and suitability of the instruments for the conduct of the study. Some items were modified and others were rejected based on their advice and

suggestions with respect to spellings, language construction and items ambiguity level of the instruments. Cronbach Alfa reliability test was used to establish the internal consistencies of the instruments. The results indicated that, the reliability coefficient of Biology Performance test (BPT)and Convergent and Divergent Questionnaire Test (CDQT) were 0.871 and 0.712 respectively. The data collected was analysed using t-test independent sample.

Hypothesis One: There is no significant difference in academic performance in biology between convergent and divergent thinking students in senior secondary schools in Katsina metropolis

Table 1

Independent sample t test for academic performance in biology mean scores between convergent and divergent senior secondary school students.

Variables	N	X	SD	DF	P-value (2-tailed)	Decision
Convergent	138	33.23	7.62	259	0.028	Rejected
Divergent	123	22.51	4.51			

Table 1 revealed that there was statistically significant difference in performance in biology between convergent and the divergent thinking students. More so, the p-value is 0.028. The p-value was greater than the alpha value of 0.05 level of significance. Based on this evidence, the null hypothesis which states that there is no significant

difference between the academic performance of convergent and divergent Biology students was rejected .Meaning that there is significant difference between academic performance in biology of convergent and divergent thinking students.

Hypothesis Two: There is no significant difference in academic performance in

biology between convergent thinking male and female senior secondary school students in Katsina metropolis.

Table 2

Independent sample t test for performance in biology mean scores between male and female convergent thinking students.

Convergent	N	X	SD	DF	P-value (2-tailed)	Decision
Male	76	18.21	5.21	136	0.054	Accepted
Female	62	17.02	4.99			

Results on the independent t-test statistics indicated that the p-value =0.054 was greater than 0.05 level of significance and based on this, the null hypothesis which states that there is no significant difference in academic performance in biology between male and female convergent students is therefore accepted. Meaning

that there is no significant difference in biology academic performance of male and female convergent students.

Hypothesis Three: There is no significant difference in academic performance in biology between divergent male and female thinking senior secondary school students in Katsina metropolis.

Table 3

Independent sample t test for academic performance in biology mean scores between male and female divergent thinking students.

Divergent	N	X	SD	DF	P-value (2-tailed)	Decision
Male	67	17.11	4.01	121	0.052	Accepted
Female	56	16.88	3.84			

Results on the independent t-test statistics indicated that the p-value =0.052 was greater than 0.05 level of significance and based on this, the null hypothesis which states that there is no significant difference in academic performance in biology between male and female divergent students is therefore accepted. Meaning that there is no significant difference in biology

academic performance of male and female divergent students.

Discussion of Findings

Results of the independent samples t-test statistics revealed from table 1 indicated that, the difference in performance in biology between convergent and divergent students was statistically significant. The p-value was greater than the level of

significance which made the researchers rejected the null hypothesis which stated that there is no significant difference in academic performance in biology between convergent and divergent students in Katsina metropolis rejected. This finding conforms with the findings of Ogunjimi et al. (2017).

The result from the test of hypothesis two shows that there is no significant difference between academic performance in biology between convergent male and female senior secondary school students in Katsina metropolis. This finding was in line with the finding of Gappi, (2013), which explored students' preferred learning styles and their academic achievement. His findings showed that there was no significant effect of gender, age and academic program on the learning styles preference of students.

The result from hypothesis three shows that there is significant difference in academic performance in biology between senior secondary school male and female secondary school divergent students. This finding was not in line with the findings of Gappi, (2013), which explored the students' preferred learning styles and their academic achievement. His findings showed that there was significant effect of gender, age and academic program on the students with

divergent learning style. This means gender is one of those factors influencing students' academic performance in biology.

Conclusion

Divergent thinking students performed academically better than their convergent thinking counterparts in biology. Therefore, students with the ability to engage in brainstorming and mind mapping will perform academically better than their mates. Cognitive learning styles have no significant influence on gender regarding academic performance of male and female students in biology because the findings of hypotheses two and three indicated no significant difference in academic performance in biology between convergent thinking male and female students and between divergent thinking male and female senior secondary school students in Katsina Metropolis.

Recommendations

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

1. Teachers should endeavour to identify cognitive styles of individual students by conducting tests that will unravel the types of their cognitive learning styles and utilize relevant teaching methods to foster their

academic performance in biology.

2. Male and female senior secondary school students should be encouraged to enhance their academic performance in biology using convergent cognitive learning style to generate possible solutions and choose the most suitable ones to solve problems.

3. Teachers should help to guide male and female senior secondary school students on how to best make use of divergent cognitive learning style to create tutorial classes that pave way for brainstorming and mind mapping for optimal academic performance in biology.

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Enhancing Workplace Communication Skills through English Language Adult Education

By

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Abstract

The study examined the enhancement of workplace communication skills through English language adult education using Ibadan North Local Government of Oyo State Nigeria. The rarity of studies exploring importance of enhancing workplace communication skills through adult English language education necessitated this study. Descriptive (cross-sectional) design was employed for this study, and 300 consenting workers of Ibadan North Local Government served as sample, alongside a self-structured questionnaire with a reliability index of 0.84 and a 'Yes or No' scale used to elicit information on the variables of the study using simple percentages for analysis of the research questions. 188 (62.6%) respondents clearly showed that workplace communication skills of employed adults can be positively enhanced through adult English language education in Ibadan North Local Government. 275 (91.5%) depicted that an improvement in the curriculum of adult English language education will positively boost workplace communication skills, strengthen unity among staff and increase productivity output of organizations while, 278 (92.8%) revealed that there are numerous benefits associated with the acquisition of communication skills through adult English language education to workplace in Ibadan North Local Government Area. It was recommended that employees must strive to enhance their workplace communication skills through further adult English language education in Ibadan North Local Government Area.

Keywords: *Enhancement*, adults, workplace communication skills, workplace

Introduction

Workplace communication enhancement involves improving the ways in which employees share information and collaborate. Effective communication can lead to increased productivity, employee engagement, and a positive work environment (Men,2014) . English language has been a language of communication with

a wide-range acceptability and coverage, mainly due to uncomplicatedness with respect to words formation, chronological order of tenses, universal uniformity, ease of writing and comprehension across different territories and continents (Crystal, 2003, &Kibe, 2014). The optimistic impact of English language makes it apposite for

various purposes, including making education goals and socioeconomic development easily achievable (Betty, 2013). The efficacy of English language with respect to communication and interpersonal interaction is so magnifying that expounding on factors and strategies which are capable of promoting effective communication development seem inevitable for a meaningful learning and communication skill development to occur within the confine of adult English language education (Jeanette, 2003), and to achieve effective language instruction, facilitators need to create an enjoyable learning environment (Agofure & Olubodun, 2022). Workplace communication refers to the exchange of information, ideas, and messages within an organization. The importance of enhancing workplace communication skills through adult English language education is to ensure effective interaction among staff, both male and female genders, towards attaining set company goals, producing optimum productivity output, as well as ensuring an egalitarian work environment where freedom of speech within the ambit of the law is upheld (Kibe, 2014). Similarly, with the right input into adult English language education, a proper implementation will bring about

enhancement in communication skill in learners, and the impact of such enhancement can be readily felt in workplace among employed adult staff, and this will in turn be beneficial for designing and implementing political adult education programmes (Olubodun, 2023). In like manner, it has been fully proven that the benefits associated with adult English language education are enormous and helpful to the workplace as both male and female employees interact freely, as daily communication is required among staff, between staff and customers, as well as between management and labour (Canary, 2011; Negash, 2011).

To this end, Truong (2021) asserted that the adult learners possess numerous perks when learning how to communicate in English language, as the majority of the adults undergoing adult English language education have strong inner motivation which enables them to establish a clear learning goal that befits them. Furthermore, adult English language education combines various classroom tasks which are majorly English-speaking related as an extra-curricular activity which contribute to development of particular soft skills and personal attributes of adults who probably were not opportune to pass through formal education in their

childhood days (Vo, Pham & Ho, 2018;Kien, 2023).

Following, Kien (2023) posit that additional tasks given to adult learners to search for information online are meant to enhance their communication skills, as well as help adult learners effectively manage the materials they have found feasibly. Sorting and managing to organize varied materials logically is extremely important at the workplace, and this can be built through adult English language education, as it presents a valuable opportunity to practice and enhance their communication prowess in their workplace (Canary, 2011; Vo, Pham & Ho, 2018;Kien, 2023).

Objectives of the Study

The main objective of the study is to explore how workplace communication skills can be enhanced through adult English language education. The specific objectives of this study include to:

1. find out impediments against workplace communication skills in relation to adult English language education in Ibadan North.
2. examine the impacts of the improvement of adult English language education curriculum on workplace communication skills in Ibadan North.

3. examine benefits of acquired communication skills through adult English language education.

Research Questions

1. What are the barriers against workplace communication skills in relation to adult English language education in Ibadan North?
2. What are the impacts of adult English language education curriculum on workplace communication skills in Ibadan North?
3. What are the benefits of acquired communication skills through adult English language education to workplace?

Hypothesis: There is no significant gender difference with respect to the barriers against workplace communication skills in relation to adult English language education in Ibadan North Local Government Area.

Objective 1: Barriers against Workplace Communication Skills in Relation to Adult English Language Education in Ibadan North

The barriers associated against effective workplace communication skills development among learners (be it young or old) seem numerous, but we shall consider a few to be able to drive towards the aim of the study. According to Lumen (2024),the major

barriers often experienced by adult learners in adult education programmes include:

Lack of conducive Environment

An environment where learning and teaching is being carried out is of greater consideration for any meaningful learning to occur (Lumen, 2024). For instance, a noisy environment is capable of distracting learners, thereby making it impossible for them to hear or completely understand what is being taught, no matter how good the teacher may be. However, with little focus on serenity with respect to the learning environment during planning, physical barriers to effective communication are some of the easiest to overcome.

Selective Perception

Selective perception is a term used to describe the tendency to either “under notice” or “over focus on” stimuli that cause emotional discomfort or contradict prior beliefs (Lumen, 2024). In essence, the term helps to buttress why some adult learners find it difficult to assimilate what has been or is being taught, because they purposively select and/or ignore what they chose to learn. These unique learners choose to disregard the information that would make them feel guilty or fearful about what is being taught, hence their communication skills are limited, inadequate and battered to a greater extent

(Lumen, 2024). Nonetheless, selective perception can also be an advantage to a few adult learners, because it keeps them active and vigilant while the teacher teaches, meaning that such are extra sensitive to aspects of teaching and learning that are significantly appealing to them.

Information Overload

The rigidity of Nigeria’s educational curriculum structure has been criticized as the foremost obstacle towards learning at any cadre, as it is plagued with too much information that are really needed for any meaningful advancement to take place in any society or on personal ground (Lumen, 2024). However, it has been justified that it is not just the quantity of communication disseminated that leads to development of workplace communication skills among adults, rather it causes overload and brings about poor or little learning (Lumen, 2024). The above assertion implies that, the adult English education teacher must of necessity be compelled to break down learning contents into digestible bits that has to be absorbed by the learners at a given time.

Semantics

Semantics refers to the study of the meaning of words and phrases (Lumen, 2024). It is a complex aspect of English language and hence its usage in adult English language

education often portrayed triviality and unimportant details that often time seem very difficult for nascent English learners to comprehend easily. According to Lumen (2024), certain semantic rules in English may trip up non-native English speakers, such as the concept of subject-verb agreement and gender pronouns, hence the teacher must pay attention to learner's educational backgrounds and cultural differences during teaching.

Objective 2: Impacts of Adult English Language Education Curriculum on Workplace Communication Skills in Ibadan North

According to Snapfix (2022), the gross impact of a poorly structured English language education curriculum has been found to negatively affect workplace communication and productivity output of staff, relationships and quality of service delivery to clients. It further negatively impacts the following aspects of an organization:

Lost messaging: a poorly structured English language education curriculum negatively impact internal workplace communications across all levels of an organization, as the adult staff may not be able to effectively communicate their needs to superiors, team leaders may not have the vocabulary to

provide clear feedback and core messages may not be passed down accurately through the company. As such, inconsequential cases of miscommunication can quickly soar into large and costly errors further down the line.

Fractured relationships: Both internal and external relationships can suffer as a result of miscommunication due to poor workplace communication skills among staff, as being able to convey key requirements to staff and suppliers is critical for setting expectations, meeting company goals and ensuring all parties are on the same page. Failure to do so can result in mixed messaging by staff, missed deadlines by company and overall frustrations for workforce.

Poor service delivery: a poorly structured English language education curriculum negatively impact internal workplace communications skills and may create avoidable disputes for company with prospective and existing customers. A disorganized curriculum can affect a company's ability to provide a high level of service, as poor communication skills in such workplace can lead to a loss of sales and disgruntled customers, which can potentially damage a company's reputation.

Objective 3: Benefits of Acquired Communication Skills through Adult

English Language Education to Workplace

There are numerous benefits associated with the enhancement of workplace communication skills through adult English language education which includes:

Improvement in communication: addressing obstacles that hinder or promote good workplace communication skills will certainly boost effective cross-cultural communication among staff within an organization and higher productivity output is guaranteed (Raul, 2023). This implies that when adult employees can communicate effectively with each other, there is bound to be an improved collaboration and teamwork that will ultimately lead to more efficient and effective work processes.

Access to a wider competent resources pool: by providing a well structure curriculum for adult English language Education, employment agencies can tap into the talent and potential pool of graduates produced by the extra-mural programmes (Global Citizen, 2024). Having a wider competent resources pool will gravitate towards more diverse and skilled workforces, which are capable of improving organizational productivity and innovative ventures.

Customers' satisfaction and retention: provision of quality adult English language education goes beyond just the development of communication skills for employment; rather it provides room to ensure customers' satisfaction and retention rates, thereby boosting profit for the company (Raul, 2023). Besides, employed staff who feel supported and valued are likely to remain with their current organization, as well as become more dedicated to their duties.

Reduction of workplace accidents: it is no tale to mention that an employed adult staff without adequate workplace communication skills in this dispensation is more prone to miscommunication and misunderstandings which might lead to workplace accidents and injuries (Raul, 2023). Thus, provision and proper implementation of an organized adult English language education will certainly improve workplace communication skills that will diminish the possibility of workplace accidents and advance overall safety.

Methodology

The study adopted the use of descriptive cross-sectional research design through a population which comprised of employed adult in Ibadan North Local Government Area. Ibadan North Local Government Area has its headquarters in Agodi in Ibadan. Its

area is estimated at 27km squared and has a population of 308,119 according to the 2006 population census. It is bounded in the west by Ido Local Government Area and Ibadan northwest Local Government Area, bounded in the east by Lagelu, Egbeda and Ibadan South-east Local Government Area, and bounded in the north by Akinyele Local Government Area. Christianity is the dominant religion in Ibadan with the overwhelming majority of the core Ibadan City Center inhabitants being Christian while Islam is the 2nd most popular religion in the city (Oyo State Ppulation Record, 2006). The study area also houses the first private TV station (Galaxy Tv) in Nigeria and Agodi Garden of Oyo State which has been completely renovated to contain a Botanical Garden, zoo, swimming pool, guest house, bar and restaurants. This study area was selected because this area seem to accommodate more employed adults in abundance who have passed through adult English language education programmes (Oyo State Population Record, 2006). Through simple random sampling technique, a total number of three hundred (300) respondents were used for this study. These samples are employed adults who have gone through or are in Adult English language education within Ibadan North Local

Government Area of Oyo State. The study area (Ibadan North Local Government Area) has twelve (12) wards, out of which simple random sampling technique was used to select twenty-five (25) participants (employed adults) from each of the ward. The instrument used for this study was a self - structured questionnaire with a reliability value of 0.84 on the Cronbach alpha scale constructed with reference to the specific objectives of the study. The questionnaire has three (3) sections; Section A was on the socio- barriers against workplace communication skills in relation to adult English language education in Ibadan North, Section B examined the impacts of adult English language education curriculum on workplace communication skills in Ibadan North, while Section C dealt with benefits of acquired communication skills through adult English language education to workplace. The three research questions and one hypothesis were examined using descriptive statistics.

Analysis

Following the data collection, the research questions were analyzed based on the data obtained from the 300 respondents who were informed and voluntarily consented to participate in the study. The period of fieldwork execution was six weeks (1st of

Feb - 15th of March, 2024). Descriptive statistics was used for data analysis and the findings of the study were stated thereafter.

Research Question 1: What are the impediments against workplace communication skills in relation to adult English language education in Ibadan North?

Table 1: Analysis of impediments against workplace communication skills in relation to adult English language education

S/N	Impediments against Workplace Communication Skills in Relation to Adult English Language Education	YES	NO	TOTAL
1.	Is conducive environment for adult English language education an adjunct to workplace communication skills?	288 (96.0%)	12 (4.0%)	300 (100.0%)
2.	Is selective perception by adult learners undergoing adult English language education a deterrent to workplace communication skills?	276 (92.0%)	24 (8.0%)	300 (100.0%)
3.	Is information overload during adult English language education helpful to improve workplace communication skills?	44 (14.7%)	256 (85.3%)	300 (100.0%)
4.	Is usage of semantics for learners in adult English language education programme effective for workplace communication skills?	143 (47.7%)	157 (52.3%)	300 (100.0%)
	TOTAL AVERAGE	187.8 (62.6%)	112.2 (37.4%)	300 (100.0%)

From Table 1, 288 (96.0%) respondents asserted that a conducive environment for adult English language education is an adjunct to workplace communication skills, 276 (92.0%) agreed that selective perception by adult learners undergoing adult English language education could be a deterrent to workplace communication skills, 256 (85.3%) of the respondents disagreed that information overload during adult English language education is helpful to improve workplace communication skills among learners. While, 157 (52.3%) of the

respondents affirmed that usage of semantics for learners in adult English language education programme may not be effective for workplace communication skills. Thus, the total average weight (62.6%) clearly showed that workplace communication skills of employed adults can be positively enhanced through adult English language education in Ibadan North Local Government.

Research Question 2: What are the impacts of adult English language education

curriculum on workplace communication skills in Ibadan North?

Table 2: Analysis of Impacts of Adult English Language Education Curriculum on Workplace Communication Skills in Ibadan North Local Government Area.

S/N	Impacts of Adult English Language Education Curriculum on Workplace Communication Skills in Ibadan North	YES	NO	TOTAL
1.	Do you think a poorly structured adult English language education curriculum can negatively affect workplace communication skills?	291 (97.0%)	9 (3.0%)	300 (100.0%)
2.	Can inadequate communication skills lead to loss of vital information and customers in a workplace?	266 (88.7%)	34 (11.3%)	300 (100.0%)
3.	Can inadequate communication skills bring about conflicting relationships among staff in a workplace?	267 (89.0%)	33 (11.0%)	300 (100.0%)
4.	Can a poorly structured adult English language education curriculum negatively affect a company's ability to provide a high level of service?	274 (91.3%)	26 (8.7%)	300 (100.0%)
	TOTAL AVERAGE	274.5 (91.5%)	27.6 (8.5%)	300 (100.0%)

From Table 2, 291 (97.0%) respondents asserted that a poorly structured adult English language education curriculum can negatively affect workplace communication skills in Ibadan North, 266 (88.7%) believed that inadequate communication skills will lead to loss of vital information and customers in a workplace. In like manner, 267 (89.0%) opined that inadequate communication skills bring about conflicting relationships among staff in a workplace. In addition, 274 (91.3%) agreed that a poorly structured adult English language education

curriculum negatively affect a company's ability to provide a high level of service.

Therefore, the total average weight (91.5%) indicated that the existing adult English language education curriculum has a great impact on workplace communication skills among employed adults in Ibadan North Local Government Area, Nigeria and beyond. To this end, there is a need for review of the existing curriculum to bring about improvement in workplace communication skills, as well as improve productivity output of employed adults.

Research Question 3: what are the benefits
of acquired communication skills through

adult English language education to
workplace?

Table 3: Analysis of benefits of acquired communication skills through adult English language education to workplace

S/N	Benefits of acquired communication skills through adult English language education	YES	NO	TOTAL
1.	Do you think adult English language education can lead to improvement of communication skills?	298 (99.3%)	2 (0.7%)	300 (100.0%)
2.	Do you think adult English language education provides access to wider competent resources pool?	284 (94.7%)	16 (5.3%)	300 (100.0%)
3.	Do you think adult English language education aids customers' satisfaction and retention?	277 (92.3%)	23 (7.7%)	300 (100.0%)
4.	Do you think adult English language education helps to mitigate workplace accidents?	254 (84.7%)	46 (15.3%)	300 (100.0%)
	TOTAL AVERAGE	278.3 (92.8%)	21.7 (7.2%)	300 (100.0%)

From Table 3, it revealed that 298 (99.3%) respondents asserted that adult English language education can lead to improvement of communication skills in Ibadan North, 284 (94.7%) affirmed that adult English language education provides access to wider competent resources pool. In like manner, 277 (92.3%) opined that adult English language education certainly has the potential to aid customers' satisfaction and retention. Also, 254 (84.7%) agreed that adult English language education helps to mitigate workplace accidents. Thus, the total average weight (92.8%) revealed that there are numerous benefits

associated with the acquisition of communication skills through adult English language education to workplace in Ibadan North Local Government Area, Nigeria and beyond. Furthermore, one can deduce that with a well-planned curriculum for adult English language education in Ibadan North, there is bound to be an improvement in the productivity output of workplaces within the study area.

(H₀₁): There is no significant gender difference with respect to the barriers against workplace communication skills in relation to adult English language education in Ibadan North Local Government Area.

Table 4: Analysis of gender difference with respect to the barriers against workplace communication skills in relation to adult English language education in Ibadan North Local Government Area

Gender dif.	N	Mean	Std. Dev.	T	Df	P	X ²	Remark
Male Female	300	119.93 110.07	2.631 3.514	-1.326	28781	.05	0.163	Not Significant

T-test was used to analyze which of the respondents in terms of gender classification scored higher with respect to the imbibing of workplace communication skills through adult English language education. Table 4 showed that no significant difference exists in terms of scores with respect to gender difference associated with barriers against imbibing workplace communication skills in relation to adult English language education in Ibadan North. Hence, it implies that both male and female adult education students likely experience the same impact of barriers against imbibing workplace communication skills in relation to adult English language education in Ibadan North Local Government Area. Hence, H_{01} is upheld (fail to reject).

Discussion of Findings

The findings of the study revealed that productivity output of organizations is negatively affected to a greater extent through poor workplace communication skills, hence there is a need to conscientiously improve adult English

language education through the employment of qualified English language instructors and creation of conducive workplace/learning environment in Ibadan North Local Government Area. Corroborating the above, Okoroma (2006) emphasized that educational policies in Nigeria has been plagued by various problems which makes the implementation a difficult task till date, as such a major deterrent to the development of adequate workplace communication skills among adults.

Therefore, the adoption and utilization of right educational mix (materials, methods and manpower) must be encouraged in the pursuit of a balanced adult English language education in Ibadan North Local Government, through the support of wide-ranging English language educators, assortment of right English language methods of teaching and material, rightly mixed in a tranquil stimulating learning environment. Thus, the inclusive undesirable impact of the aforementioned inhibition

against the enhancement of workplace communication skills through adult English language education is that, it encourages indolence, low productivity output and creates possibility of an atmosphere of disunity among staff in organizations.

In addition, the study revealed that poor workplace communication skills and low productivity output are resultant effects of a weak adult English language education in Ibadan North Local Government. This finding corroborates the assertions of Okoye (2004), who opined that communication skills are definitely required by staff in both public and private organizations for effective and result oriented productivity. From the findings of this study, one can deduce that adequate workplace communication skill is an indispensable enhancing requirement that should be provided by an organized adult English language education programme for optimum productivity to occur in any organization setting within Ibadan North Local Government.

The findings of the study further revealed that an improvement in the curriculum of adult English language education will positively boost workplace communication skills, strengthen unity among staff and increase productivity output of organizations. Hence, signifying that both male and female adult

education students and learners of English language often time experience the same impact of the factors against the imbibing of workplace communication skills through adult English language education in Ibadan North Local Government Area. Hence, hypothesis (H_{01}) is upheld (fail to reject).

Conclusion

Enhancing workplace communication skills through the adult English language materials, teaching and seasoned instructors will of necessity improve the performance of staff in organizations, become very beneficial across different spheres of life both to the educated and the larger society, as well as mitigate avoidable cross-cultural boundary conflicts in Ibadan North Local Government Area, Nigeria, Africa and beyond (Jesusgun, 2021). Learners of English language will definitely do well, if the challenges of Adult English language education are well addressed by the English Language instructor, curriculum planners and employment agencies (Negash, 2011).

Recommendations

With respect to the outcome of the study, the following recommendations were tendered:

1. Oyo State Government in Nigeria must of necessity provide conducive learning and workplace environment that permits

enhancement of communication skills among staff.

2. Staff of both Federal and State governments must strive to enhance their workplace communication skills through further adult English language education in Ibadan North Local Government Area.
3. Adult English language education instructors must embrace modern teaching strategies and materials in the

lesson plan/notes used in adult English language education.

4. Adult English language facilitators should teach learners how to access economic opportunities in Ibadan North Local Government, so as to motivate them towards continuity in learning for enhanced communication skills, self-reliance and egalitarian society.

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Strategies for Combating Terrorism and Violent Extremism in Nigeria

By

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Abstract

This article analyses the repositioning of effective strategies for combating terrorism and violent extremism in Nigeria. The study examines the concept of terrorism and violence extremism in Nigeria, historical overview of terrorists group and violent extremism in Nigeria. The study also discussed the prevalence of terrorism and violent extremism in Nigeria and also prevalence of students' terrorism in Nigeria. The article specifically examines the effective strategies for combating terrorism and violent extremism in Nigeria which included; using of military tactical forces and other agencies to fight terrorist in Nigeria, pentagonal frame work model, on-military approach, collaboration and volunteering of security activities by community members, cooperation between the Nigerian army and residents of the communities under boko haram insurgency, support intervention and reintegration of counter-recidivism efforts, expand partner information-sharing, support locally-driven terrorism prevention, and update counterterrorism policies. The study concluded that; the activities of terrorists and violent extremists have culminated in huge death loss as well as destruction of properties. In spite of the holistic approach that was initially adopted in curbing terrorism and violent extremists in the Nigeria. The paper suggested among others that, Nigerian government should enhance local community involvement in counter-terrorism efforts by fostering trust between security forces and local populations.

Keywords: *Effective Strategies, Nigeria, Terrorism, Violence Extremism*

Introduction

Nigeria the most populous nation in Africa, has been grappling with terrorism and violent extremism for over a decade. The country become a focal point of global concern due to the activities of terrorist groups like Boko Haram and its offshoot, these groups have perpetrated countless atrocities, including bombing, kidnappings and mass killings, primarily in the north-east and north-west region but also extending their reach to other parts of the country. The insurgency, which

began in 2009, has led to the deaths of over 30,000 people and displaced millions, creating a humanitarian crisis that extends beyond Nigeria's border into the Lake Chad Basin (Adedire, & Olowojolu, 2016). The Nigerian government response to these threats has largely been military focused, with various operations launches to dismantle terrorist networks and reclaim terrorist under their control. While these efforts have achieved some success in weakening the

operational capacity of groups like Boko Haram, they have not sufficient to completely eradicated the threat. In some cases, military actions have been criticized for exacerbating the situation, leading to collateral damage and further alienating local communities.

Moreover, the underlying drivers of terrorism in Nigeria remain largely unaddressed. Factors such as poverty, unemployment, lack of education, political corruption and bad governance have created fertile ground for extremist ideologies to take root. In many affected areas, young people are particularly vulnerable to radicalization due to a lack of opportunities and disillusionment with the state. In response to the evolving nature of these threats, there have been growing recognition of the need to reposition and enhance existing strategies for combating terrorism in Nigeria.

Concept of Terrorism

UN (2020) stated that, critics also accuse the United States of terrorism for backing not only the Israeli occupation, but other repressive regimes willing to terrorize their own citizens to maintain power. Palestinian militants call Israel terrorist, Kurdish militants call Turkey terrorist, Tamil militants call Indonesia terrorist; and, of course, the nation-states call the militants who oppose their regimes “terrorists”.

Terrorism is in the eye of the beholder. One man’s freedom fighter is another man’s terrorist. Hence, the difficulty in defining terrorism. Therefore, terrorism is subject to the normal rigors of the criminal-justice system. According to Faluyi (2017) defined terrorism as unlawful use of violence or the threat of violence against civilians, with the aim of creating fear, coercing government or societies and advancing political, religious, or ideological objectives. Terrorists are intended to evoke responses and generate fear from an audience much wider than the immediate victim. Hoffman (2006) put forth that, tagging an individual or group as ‘terrorists’ becomes almost inevitably subjective depending to a great extent, on whether one has sympathy for or in opposition to the person/group/cause concerned.

According to Pearsall and Trumble (2006) in Adedire, Ake and Olowojolu, (2016) defined terrorism as the systematic use of violence and intimidation to coerce a government or community into acceding to specific political demands. Terrorists always use to violate of human rights including gender rights such as abduction of school girls and the use of female teens as suicide bombers, threat to human security. A typical example of terrorism is included; banditry herdsmen

killings, rape and abduction including school girls by Boko Haram. According to Resolution 1566 (2004) adopted by the Security Council of the UN at its 5053rd meeting on 8th October 2004, terrorism is a criminal act, including against civilians, committed with the intent to cause death or serious bodily injury, or taking of hostages, with the purpose to provoke a state of terror in the general public or in a group of persons or particular persons, intimidate a population or compel a government or an international organization to do or to abstain from doing any act, which constitute offences within the scope of and as defined in the international conventions and protocols relating to terrorism” (United Nations, 2004).

According to Ajodo-Adebanjoko (2021) violent extremism is a form of extremism that condones and enacts violence with ideological or deliberate intent. Its ‘believing and supporting ideas that are very far from what most people think is correct or reasonable or attitudes or behaviors that are considered out of the norm. According to Dyrenforth (2018) defined violent extremism as “advocating, engaging in, preparing, or otherwise supporting ideologically motivated or justified violence to further social, economic or political objectives. In violent and extremism attacks its’ always targeted at

the government, its agencies or citizens and faceless, senseless violence, shootings, bombings and mindless killings of innocent people. But sometime terrorists use violent threats to intimidate the government, trigger tension and panic in the society.

Historical overview of Terrorists Group and Violent Extremism in Nigeria

Terrorism and violent extremism in Nigeria were traced back during the emergence of Islamic movement of Boko Haram found in 2002 by Muhammad Yusuf in North-eastern Nigeria, that since 2009 has carried out assassinations and large-scale act of violence in Nigeria. In 2015 the group pledge the allegiance to the Islamic state West Africa province (ISWAP) also known as Islamic state in West Africa (ISWA). The next year the group split with one faction retaining that name and other reverting back to the original appellation. Adedire, Ake and Olowojolu (2016) narrated that, Yusuf established the group in Maiduguri, the capital of Borno state, Nigeria. The origin name of the group is Jama’atuAhl al-Sunnahlil-DaawahWal al-Jihad (Association of the People of Sunnah for Preaching and Jihad), the name Boko Haram, which means “Westernization is Sacrilege”, was given to the group by neighbours based on how they viewed its’

lifestyle and teaching (Ajodo-Adebanjoko, 2021).

However, Dyrenforth (2018) stated that, Boko Haram gained widespread exposure in July 2009 when, after an incident in which group members were allegedly subjected to the excessive use of force by police and then were unable to get official investigation in to matter, the group launched the attacks on police post and other local government installations, killing scores of police officers. When the police could not bring the situation under control, the army was brought in. Ensuring joint task force operation left more than seven hundred Boko Haram members dead and destroyed the mosque that the group used as its' headquarters. Yusuf and leaders were arrested by military and handed over to police. A few days later the bullet riddled corpses of Yusuf and his colleagues including his father in Baba Fugu Muhammad who was willingly handed himself over to the police for investigating. The extrajudicial killing by the police infuriated the group as well as others. Consequently, Iwuoha and Onuoha (2021) reported that, after the incident of killing Yusuf, his deputy Abubakar Shekau declared the leader of the group in the summer of 2010, the group began to assassinate individual. Although the joint task force

composed of troops from Nigeria and neighboring countries had made significant progress against Boko Haram and its' related groups beginning in 2015, attacking by militant later resumed with ISWAP in particular being very active from 2018. ISWAP also reportedly gained a new leader Abu Abdullah Ibn Umar a-l Barnawi in (2019). Boko Haram's proclamation of affiliation to ISIS is a proof that Boko Haram falls under this wave and that Islamic radicalism has gone borderless. ISIS was involved in the hierarchical permutation of Boko Haram in 2016. The fraternity of Boko Haram with this wave manifests in the sect's quest to have *Sharia* law entrenched in Northern Nigeria and if possible the whole of Nigeria (Patrick and Felix, 2013).

According to Department of Homeland Security Science and Technology Center of Excellence Maryland University (2015) reported that, terrorism in Nigeria; in 2014 was marked by severe increases in the total number of attacks (114%), fatalities (308%), injuries (376%), and hostages (1,358%) compared to 2013. Nigeria was particularly likely to experience highly lethal individual attacks, as well as highly lethal coordinated attacks. Nine of the 20 deadliest individual terrorist attacks in 2014 took place in Nigeria. Two others occurred across the border in

Cameroon and were attributed to the Nigerian group Boko Haram. In 2014, the average number of deaths caused by attacks in Nigeria was 12.8. This was nearly twice as high as the rate in 2013, and nearly five times as high as the global average (2.57 deaths per attack) in 2014. Of the 109 occasions in 2014 when more than 50 people were killed in terrorist attacks on a single day in a particular country, more than one-third (37%) occurred in Nigeria, involving up to seven attacks in one day.

According to Mustapha (2021), Banditry has created a large number of destitute, orphans and widows in the rural areas of Zamfara State due to constant raiding, theft and raping. The village of Badarawa in Shinkafi Local Government Area, is another area hit by the bandits, the village head has compiled a list of 318 widows, orphans and destitute who lost loved ones in the various attacks carried out by the bandits in 2015 alone. According to United State of America Institute for economic and peace (2022) report stated that, in 2014 to 2015 the Boko Haram group was responsible for over 1,000 casualties per year, making it one of the most dangerous groups in the world. During that time, the group was more capable of challenging the Nigerian military, but with fewer members and resources, it reverted

back to using more traditional terrorist tactics. To escape the Nigerian military, it was forced to Boko Haram was forced to seek refuge in Cameroon, Chad, and Niger, bringing violence to those areas. In 2021, attacks caused on average 7.9 deaths per attack, compared to 3.8 in 2020. This is of particular concern and highlights the growing sophistication and organizational capabilities of ISWA (Chukuma& Francis, 2021).

According to Global Terrorism index report (2022) stated that the total deaths from terrorism in Nigeria fell to 448 in 2021, the lowest level since 2011. Terror-related casualties dropped by almost half compared with the previous year. However, the number of terrorist attacks increased by 49 per cent between 2020 and 2021. 36 per cent of attacks were claimed by ISWA, Boko Haram being responsible for eight per cent and 44 per cent not attributed to any group. Law enforcement, including police and prison officers overtook both military and civilians as the most targeted group of 2021. Attacks against police and prisons increased substantially from one recorded attack in 2020 to 75 in 2021, accounting for over a third of all attacks in Nigeria in 2021. This was largely driven by an increase in clashes between law enforcement and separatist groups, such as the Indigenous People of

Biafra (IPOB). Civilian deaths dropped 62 per cent from 2020. Military deaths mirrored this trend, with 2021 recording almost half the number of terrorism deaths from the prior year. In 2020, ISWA became the deadliest terrorist group in Nigeria. The decline of Boko Haram continued into 2021, with Boko Haram responsible for only 69 deaths, a decrease of 77 per cent from the previous year. This is the lowest number of deaths by the group for a decade.

Iorliam (2021) reported that Boko Haram's decline has resulted in a substantial improvement in terrorism in Borno State, which experienced a decrease of 71 per cent in terrorism deaths when compared with the prior year. Attacks in the state also decreased from 121 to 86 respectively. Boko Haram's decline coincides with a number of factors, most significantly the death of the group's leader, Abubakar Shekau. Shekau, who committed suicide by detonating an explosives vest during a confrontation with ISWA in May 2021.³² given the demise of their leader, Shekau's followers were faced with the decision to either continue Shekau's ideology or join ISWA. It has been reported that as many as 18 former Boko Haram commanders have joined ISWA after Shekau's death.³³ Attacks by ISWA as well as counter-terrorism efforts by the Nigerian

government and foreign military forces have significantly weakened Boko Haram's impact in Nigeria. These external pressures resulted in an increase in Boko Haram attacks in neighboring countries, particularly Cameroon which recorded 37 attacks and 58 deaths in 2021. Cameroon recorded more Boko Haram attacks than Nigeria in 2021 for the second consecutive year.

Prevalence of Secondary School Students Terrorism and Violent Nigeria

According to Muhammad and Ashiru (2021) in 2014 Boko Haram terrorists abducted 276 schoolgirls from their dormitories in Chibok, Borno State. In the same year again 100 girls were kidnapped by Boko Haram at a government girl's secondary school in Dapchi, Yobe State. Gunmen attacked the Government Boys Science Secondary School in Kankara Local Government Area of Katsina State and abducted over 300 students. In 2020 80 pupils were kidnapped at an Islamic school in Mahuta in Dandume local government area of Katsina State. While in 2021 Bandits kidnapped 27 students at a government science college, Kagara, Niger State. All the students were later released after negotiations. Likewise, Bandits kidnapped 317 female students of Government Girls Secondary School Jangebe, Zamfara State, in an early morning

raid on their school. One of the students died while the rest were later released after negotiations. Also, in 2021 armed bandits also kidnapped 27 students of the Federal College of Forestry Mechanization, Afaka, Kaduna State (Leadership, 12th March, 2021). The students were released after negotiations, nearly two months after they were abducted. About 17 students of Greenfield University were kidnapped by armed bandits in Kaduna State. The bandits killed five of the students and released the remaining 14 who were held captive for more than a month. The families of the victims admitted paying over N100 million ransom before the students were released. 169 pupils were kidnapped at Salihu Tanko Islamic school of Tegina, Niger State Nigeria. Many of the students are reportedly ill and still with their abductors as of press time (Vanguard 30th May, 2021).

Bandits kidnapped 8 students and some lecturers at Nuhu Bamali Polytechnic, Zaria Kaduna State. The terrorists' activities also overpowered police officers and kidnapped 80 schoolchildren and five teachers at the Federal Government College Birnin Yauri, Kebbi State (The Guardian 17th June, 2021). Three students have died while seven have been rescued by the Nigerian Army. About 100 bandits were shooting and displayed

guns, while 2 students got injured, and a police officer was killed. Suspected bandits attacked the college of Animal Science Bakura and abducted 19 persons consisting three staff, 15 students and a driver. About 121 Students were kidnapped in Bethel Secondary School Chikun Local Government Area of Kaduna State, and 28 have been by their abductors (Vanguard, 6th July, 2021). The Police in Kaduna state and other security agents have rescued 26 of kidnapped students Bethel Baptist School and a female teacher. Bandits attacked students of Government Day Secondary School Kaya Maradun, Zamfara State. Kidnapped 75 Students and 1 Vice principal of the school (Premium time, 1st September, 2021). 12 days later, 75 students that were kidnapped have regained freedom. Bandits have again abducted 5 students Government Day Secondary School Jangeru along Birnin Yaro in Shinkafi local government area of Zamfara State. Around 7-8pm Kidnappers have invaded Mararaba community hosting Federal University Nasarawa last night shooting sporadically and succeeded in Kidnapped 2 students of the institution (Punch Newspaper, 2021). The abductors were said to have shot sporadically into the air while they whisked away the students without any intervention from security operatives in the area. Suspected

Gunmen attacked the staff quarters of University of Abuja and abducted members of staffs and their children at a University in Nigeria in a rare kidnapping at a large institution in the Federal Capital Territory Abuja, 4 staffs and (BBC News, 2nd November, 2021).

Effective Strategies for Combating Terrorism and Violent Extremism in Nigeria

There are many ways, strategies and methods to be adopted in the combating of terrorists and violent extremists in Nigeria which included;

1. Using of Military tactical forces and other agencies to fight terrorist in Nigeria:

Uduonwa (2013) stated that relying on hard power to terrorists has brought forth the solution to the plights of the areas affected by Boko Haram's activities and other terrorists in Nigeria. Counter-terrorism models can also take the form of military and non-military action. The military model encompasses peacekeeping operations, utilizing threat of military intervention as a tool for deterring states from supporting terrorism, military aid to equip military and use of the military to distribute humanitarian aids. Non-military model revolves around persuasive methods like addressing the idea

that causes terrorism and de-radicalization initiatives (Crelinsten, 2009).

2. Pentagonal frame Work Model: Its called 5Ds. its' United Nation plan which consists of dissuading people from resorting to terrorism or supporting it, denying terrorists the means to carry out attacks, deterring states from supporting terrorism, developing state capacity to defeat terrorism and defending human rights (United Nations, 2006).

3. Non-military approach: This approach adopted by Kenya comprises local security policy known as '*NyumbaKumi* initiative' which incorporates participation of the local populace in intelligence gathering through reporting suspicious characters and individuals. Engagement of Muslim clerics to spread messages devoid of Islamic extremism and freezing assets of Al-Shabaab sympathizers as well as preventing money laundering (Megged, 2015). It can also be use soft approach includes persuading repentant Islamist militants to speak publicly; offering amnesty for terrorists; preventing the young from becoming terrorists through offering jobs in the public sector giving bonuses, building houses and enrolling some of them into the military (Hasan, Hendriks, Janssen & Meijer 2012).

4. Collaboration and Volunteering of security activities by Community members:

The Nigerian Government, in collaboration with the volunteering citizens, has adopted different measures in tackling banditry in Nigeria. These measures include military action, vigilante groups, security intelligence and suspension of terrorism activities in the society (Abdullahi & Mukhtar, 2022). While WANEP (2018) stated that, the military strategy includes joint security raids/patrol and creation of various operation troops, such as combatant soldiers, the army and the air force should be deployed to take over the forests of the Northern Zone of Nigeria especially north-west, North-East, and other parts of Nigeria where there is need for that.

5. Cooperation between the Nigerian Army and residents of the communities under Boko Haram insurgency:

closer working relationship between the military, Civilian Joint Task Force (CJTF) and communities of affected areas by reporting any suspected member of terrorists to security agent. Iwuoha and Onuoha (2021) opines that, the local intelligence provided by the CJTF is intended to act as a solid bridge that reconsolidate and reinforce trust between military and local people. With regard to new strategy, Friend (2014) put forth that,

there is need to establish an intelligence fusion center so as to promote information sharing among various national security agencies across the nations.

6. Support intervention and reintegration of Counter-recidivism efforts:

identify signs of violent radicalization and mobilization to focus real-world and online intervention efforts to prevent terrorist attacks (US, 2018). It could be work hard to limit prison radicalization by training prison staff and supporting rehabilitation. Work with partners to address the challenge of reintegrating returning terrorist fighters, their families, and children into their communities.

7. Expand partner information-sharing:

Prioritize the sharing of information, such as biometric and geo-locational data and information about new threats, including terrorists' initial research into new attack capabilities. Building on solid partnerships and processes for sharing information will continue to improve the capacity for information-sharing and work with partners to allow them to more effectively act on shared information (US, 2018).

8. Support locally-driven terrorism prevention:

Seeking and encouraging locally driven solutions that target specific causes of terrorist radicalization and mobilization to violence (US, 2018). Work

with partners to encourage positive narratives that promote tolerance and security in Nigeria.

9. Update Counterterrorism Policies:

Empower the national security and law enforcement Communities to pursue terrorist threats to their Source and prevent terrorist attacks while respecting Nigerians' rights. Focus on policies that have not kept up with the evolving threat picture and technology environment. For example, allow agencies to more easily share identity intelligence about terrorists and use publicly available information to preempt emerging threats (USA, 2018).

Conclusion

The study substantiated that, the activities of terrorists and violent extremists have culminated in huge death loss, kidnapped as well as destruction of properties and students' lives in Nigeria. In spite of the holistic approach that was initially adopted in curbing terrorism and violent extremists in the Nigeria. The frequency of occurrence of the incidence of terrorism and violent extremists in the Nigeria becomes higher. In more recent times, there has been a dramatic increase in the spates of terrorism; Kidnapping of students for ransom, extremist violent and conflict between herders and farming communities, alongside the

attendant problems of rural banditry in Nigeria. Since the inception of terrorism and violent extremism in Nigeria, government has developed various strategies towards curbing the activities of Boko Haram. First is the use of brute military force against terrorists' groups and deployment of over 8000 troops into affected parts of northern Nigeria, but with no clearly defined Military Code of Justice for the operation. Since the inception of terrorism and violent extremism in Nigeria, government has launched difference names operations in Nigerian states.

Suggestions

In the line with the findings of the study, the suggestions of the paper are fold;

1. Nigerian government should enhance local community involvement in counter-terrorism efforts by fostering trust between security forces and local populations.
2. Nigerian government should equip security personnel with sophisticated weapons and new modern technology in the war against terrorist in Nigeria.
3. Nigerian Government should initiate comprehensive socioeconomic development programmes.
4. Nigerian government should provide security personnel equipped weapon to

guard and protect the lives and properties of Nigerians.

5. Civilian Joint Task Force (CJTF) should be fully equipped with weapons and training so as to be able to fight against

terrorism and violent extremist in Nigeria.

6. Nigerian security agencies should change their strategies of fighting against terrorism and violent extremism in Nigeria.

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Enhancing Entrepreneurial Technology Education: The Impact of Virtual Workshop Package on Students' Psychomotor and Cognitive Skills in Metalwork at Technical Colleges in Nigeria

By

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Abstract

The integration of entrepreneurial technology education aims to prepare students for entrepreneurial ventures in metalwork through enhanced skill development. This study investigates the effectiveness of virtual workshop packages in improving students' psychomotor and cognitive skills in metalwork education at technical colleges in Nigeria, with a focus on enhancing entrepreneurial capabilities. The study employed pre-test, post-test quasi-experimental non-randomized control group design. Two technical colleges in Kano state were purposefully selected as experimental and control groups due to proximity and availability of functional computer labs. Data collection instruments included Cognitive and Psychomotor Achievement tests, each comprising 15 multiple-choice items. The validity of these instruments was confirmed by three University lecturers with PhDs in technology education and two technical teachers with more than ten years of experience in teaching of metalwork technology. Reliability was assessed through the test-retest method, yielding Pearson Product Moment Correlation coefficients of 0.85 and 0.83 for the cognitive and psychomotor tests, respectively. Data analysis involved calculating Mean and Standard Deviation to answer the research questions, and hypotheses were tested using ANCOVA at a significance level of 0.05. The results indicated that the VWP significantly enhanced students' cognitive and psychomotor achievements in metalwork practical within technical colleges in Nigeria. Based on the findings, the study recommends among others that Workshops and Seminars should be organized by the various State Science and Technical Education Boards in Nigeria to create awareness among metalwork teachers and students on the importance of the VWP as it has significantly improved students' cognitive and psychomotor achievement in metalwork practical.

Keywords: *Virtual Workshop*, TVET, Technical College, Metalwork, Cognitive and Psychomotor Skills

Introduction

Entrepreneurial Technology Education (ETE) in the context of Technical Vocational Education and Training (TVET) plays a crucial role in equipping individuals with

practical skills and knowledge necessary for employment and entrepreneurship in various sectors of the economy (UNESCO-UNEVOC, 2012). In Nigeria, where the

demand for skilled technical workers continues to grow alongside aspirations for industrial development, the integration of innovative educational approaches becomes imperative. This paper focuses on the utilization of Virtual Workshop Packages (VWP) to enhance students' psychomotor and cognitive skills in metalwork education at technical colleges, thereby fostering entrepreneurship and self-reliance.

Acquisition of entrepreneurial skills in Technical Education programmes such as metalwork involve equipping individuals with hands-on skills, scientific knowledge, and the necessary attitudes and understanding related to specific trades or professions. The primary goal is to prepare individuals not only for skilled employment within various industries but also to empower them to pursue self-employment opportunities (Ali, 2018). This form of education emphasizes the importance of applying theoretical concepts in real-world situations, thus effectively bridging the gap between what is taught in the classroom and the practical demands of the industry. This is particularly evident in fields such as metalwork technology, where graduates from technical colleges are encouraged to identify and capitalize on various business opportunities (Kagara, Kudu, & Salawu, 2017). Through this

approach, Entrepreneurial Technology Education plays a crucial role in fostering innovation, creativity, and economic independence among metalwork students.

Metalwork education within TVET focuses on imparting skills in working with metals, including techniques such as welding, machining, and assembly, crucial for industries ranging from manufacturing to aerospace (Mudar, 2012). This discipline equips students with essential competencies in material selection, safety protocols, and technical problem-solving, preparing them for diverse roles in the industrial sector (Jadas, 2008). Traditional metalwork workshops face challenges such as limited resources, safety concerns, and logistical constraints, which can hinder effective skill development among students (Yusuf, 2016). These challenges underscore the need for innovative approaches such as the use of virtual workshops to enhance the learning experience and outcomes in metalwork education.

Virtual Workshop Packages represent a transformative approach by leveraging computer-aided simulations and virtual environments to replicate traditional workshop experiences in a controlled, risk-free setting (Smith & Johnson, 2019). This

shift addresses challenges in resource availability and enhances accessibility to learning materials, thereby promoting inclusivity and accommodating diverse learning styles (Jones, 2020). In the context of a knowledge-based economy, effective teaching strategies are crucial in developing competent manpower for technological industries (Anderson & Koedinger, 2016). Virtual Workshop Packages offer a dynamic platform for interactive learning, allowing students to engage deeply with complex concepts and receive immediate feedback, which is often challenging in traditional settings (Katcha & Wushishi, 2015).

Practical skills in science and technical subjects, like metalwork, are crucial for job creation among the youth, yet inadequate workshop facilities and resources often hinder effective learning (Saage, 2009). The COVID-19 pandemic underscored the need for resilient educational systems that can adapt to disruptions by enhancing digital instructional methods (Lawrence & Avaa, 2011). Virtual workshops offer a powerful solution by leveraging multimedia to facilitate learning. According to Mayer's cognitive theory of multimedia learning, students learn more effectively when information is presented using both visual and verbal elements, allowing them to build

coherent mental representations. This approach moves beyond traditional methods of knowledge transmission and rote learning, focusing instead on helping learners actively construct their own understanding.

By thoughtfully designing multimedia presentations, instructors can optimize cognitive processing and enhance student learning, particularly in complex subjects like metalwork where hands-on experience is essential. This paper investigated the application of virtual workshop package for effective teaching and learning of metalwork practical towards improving their entrepreneurial skills.

Research Questions

The following research questions were raised to guide the study:

1. What is the mean difference in the cognitive achievement scores of students taught metalwork practical with VWP and those taught through traditional workshop practice (TWP) in Technical Colleges?
2. What is the mean difference in the psychomotor achievement scores of students taught metalwork practical with VWP and those taught through traditional workshop practice (TWP) in Technical Colleges?

Research Hypotheses

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

HO1: There is no significant difference in the mean cognitive achievement of students taught metalwork practical through VWP and those taught through traditional workshop practice (TWP) in Technical Colleges;

HO2: There is no significant difference in the mean psychomotor achievement scores of students taught metalwork practical through VWP and those taught through traditional workshop practice (TWP) in Technical Colleges.

Methodology

The design adopted in the study is Quasi-experiment involving pre-test, post-test and control group. The population consisted of all the technical colleges in the six Geo-Political Zones in Nigeria. Two technical colleges were purposely assigned to experimental and control groups in Kano state based on proximity and availability of computer labs. Both groups were engaged for metalwork practical for six weeks learning the same contents using Virtual Workshop Package (VWP) for the experimental group and Traditional Workshop Practice (TWP) for the control group. The topic covered include: (1) Ferrous and non-ferrous metals (2) Mechanical Properties of metal (3)

Metalwork Hand tools (4) Heat treatment processes (5) Foundry work (6) Machining Processes.

The instruments for data collection were Cognitive and Psychomotor Achievement tests having 15 multiple-choice items each. The instruments were validated by three University lecturers with PhD in technology education as well as two technical teachers with more than ten years teaching experience in metalwork. The reliability of the instruments was established using test re-test method on 20 metalwork students who form part of the population of the study but not the sample. The data obtained was computed using Pearson Product Moment Correlation yielding indices of 0.85 and 0.83 respectively.

The instruments were administered as pre-test (before the treatment) and post-test (after the treatment) to metalwork students in the technical colleges involved. The items of the instruments were reshuffled between this interval to avoid Hawthorn effect which is a situation where the results of the post-test (usually higher score) are due to the fact that students are familiar with the questions rather than the effect of treatment. Other extraneous variables that were controlled in this study include: (1) Experimental treatment diffusion

as the control and experimental schools were far from each other; (2) Instrumentation: The instruments as well as rater's check list used by participating metalwork teachers who assisted the researcher in rating during pre-test and post-test were prepared by the researchers. This is in order to control threat that may arise from instrumentation. In addition, the tests question papers were withdrawn from the students and teachers immediately after the pre-test to avoid students becoming test wise. (3) Experimental fidelity: The researchers organized a training session for participating teachers on how to use the VWP as well as how to use or rate students' cognitive and psychomotor skills achievements. This training enabled the teachers to uniformly and correctly implement the experiment to void threats to experimental fidelity.

Data collected was analyzed using Mean and Standard Deviation to answer the research questions while the hypotheses were tested using ANCOVA at 0.05 level of significance.

Development of the VWP

The VLP software was developed to consist of four core models, namely, Student, Tutoring, User-Interface and Domain Models as identified by Bourdeau and Mizoguchi (2010). The software was developed based on cross-platform technologies as a desktop and mobile solution. Python programming language (Django framework) was used for the logic while Hypertext Mark-up Language (HTML) and Cascading Style Sheet (CSS) was used for the user interface.

The four (4) Models of the VLP were developed in line with the needs or expectations of the VLP to perform the intended instruction on metalwork practical such as Drilling Operation (see Figure 1). The practical activities were carefully sorted out to produce a document known as Software Requirement Specification (SRS). The SRS document tells us 'what' software does and as such became the input of this software requirement analysis stage, which tells us 'how' a software system should work.



Figure 1: Drilling Practice in Metalwork

Workshop was undertaken to provide planning sessions to strategize on the conduct of the Validation and establishment of Effectiveness of the VLP Model. Pilot study was carried out to test the functionality and usability of the VLP model (to be done at different levels). This was done in 12 selected schools, 2 in each of the six (6) geopolitical zones.

Results

Research Question One: What is the mean difference in the cognitive achievement scores of students taught metalwork practical with VWP and those taught through traditional workshop practice (TWP)?

Table 1: Mean Cognitive Achievement Scores of Students Taught metalwork Practical Through VWP and Those Taught Through TWP.

Group	N	(\bar{X})	SD	Mean Diff.
Experimental	36	39.07	9.09	9.07
Control	9	30.00	11.55	

Table 1 contains mean and standard deviations of Cognitive achievement scores

of students taught metalwork practical through VWP and those taught through TWP. The means and standard deviation revealed

that the students taught through VWP (39.07 ± 9.09) have higher cognitive achievement scores than those taught through TWP (30.00 ± 11.55) with 9.07 mean difference. The standard deviation of the two groups on cognitive achievement revealed that the scores are relatively far away from the mean.

Research Question Two: What is the mean difference in the psychomotor achievement scores of students taught metalwork practical with VWP and those taught through traditional workshop practice (TWP)?

Table 2: Mean Psychomotor Achievement Scores of Students Taught Metalwork Practical Through VLP and Those Taught Through TWP.

Group	N	(\bar{X})	SD	Mean Diff.
Experimental	36	39.06	4.99	6.06
Control	9	33.00	6.93	

Table 2 contains mean and standard deviations of psychomotor achievement scores of students taught Metalwork Practical through VLP and those taught through TWP. The students taught through VWP (39.06 ± 4.99) have a higher psychomotor achievement score than those taught through TWP (33.00 ± 6.93). The mean difference is 6.06. The standard deviations of the two groups on

psychomotor achievement revealed that the scores are not far away from the mean.

Null Hypothesis One: There is no significant difference in the mean cognitive achievement scores of students taught metalwork Practical with VWP and those taught through Traditional Workshop Practice (TWP).

Table 3: Results of ANCOVA on Cognitive Achievement of Students Taught metalwork Practical Through VLP and Those Taught Through TWP.

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Decision
Corrected Model	598.270 ^a	2	299.135	2.361	.107	.101	Rejected
Intercept	9161.854	1	9161.854	72.326	.000	.633	
Pretest_Cognitive Group	5.431	1	5.431	.043	.837	.001	
Error	544.631	1	544.631	4.299	.044	.093	
Total	5320.298	42	126.674				
Corrected Total	51466.778	45					
	5918.568	44					

Table 3 shows the results of one-way ANCOVA on cognitive achievement where $F(1, 42) = 4.299$ and $p\text{-value} = .044$ which is less than 0.05 level of significance. This revealed that there is statistically significant difference in the mean cognitive achievement scores of student taught metalwork practical through the VWP and those taught through the TWP and the hypothesis 1 is rejected. The difference is in favor of those taught through the VWP compared to those taught through

the TWP. The partial Eta Squared (.093) indicates that 9.3% of the variability in cognitive achievement is accounted for by the independent variable.

Null Hypothesis Two: There is no significant difference in the mean psychomotor achievement scores of students taught metalwork Practical with VWP and Traditional Workshop Practice (TWP).

Table 4: Results of ANCOVA on Psychomotor Achievement of Students Taught Metalwork Practical Through VWP and Those Taught Through TWP

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared	Decision
Corrected Model	316.434 ^a	2	158.217	5.522	.007	.208	
Intercept	8568.391	1	8568.391	299.027	.000	.877	
Pretest_Psychomotor Group	52.412	1	52.412	1.829	.183	.042	Rejected
Error	142.468	1	142.468	4.972	.031	.106	
Total	1203.477	42	28.654				
Corrected Total	65969.000	45					
	1519.911	44					

Table 4 shows the results of one-way ANCOVA on psychomotor skills where $F(1, 42) = 4.972$ and $p\text{-value} = .031$ which is less than 0.05 level of significance. This revealed that there is statistically significant difference in the mean cognitive achievement scores of students taught metalwork practical through the VWP and those taught through the TWP which implies that the hypothesis 2 is rejected. The difference is in favor of those taught through the VWP compared to those

taught through the TWP. The partial Eta Squared (.106) indicates that 10.6% of the variability in psychomotor skills is accounted for by the independent variable.

Discussion

The success of VWP in enhancing students cognitive and psychomotor skills achievement in this study can be linked to the Mayer’s (2011) cognitive theory of multimedia learning because the components

of the software provided virtual representation of the properties of traditional workshop practice interactively using text, 3D animations and interactive media for effective learning of metalwork practical. Besides, the software provides virtually effortless environment through which students' energy converged in metalwork practical rather than how to use the system thereby reducing the negative effects of cognitive overload. This is unlike the traditional workshop practice that requires use of energy which can cause mental and physical exhaustion and reduction in interest and motivation.

The findings of this study on the effectiveness of the Virtual Workshop Package (VWP) over the TWP showed that VWP is significantly more effective than Traditional Workshop Practice (TWP) in improving students' cognitive and psychomotor skills in metalwork practical. This is in conformity with the findings of Rayisyan et'al (2020) who conducted a survey of students about their evaluation of the importance of using VWP during practical work showed that an important difference in students' motivation was the desire to study not for the sake of erudition but practical works (76%of respondents). 83.5% of respondents noted the usefulness of

Virtual workshops since this method provided them with the opportunity to master such activity, which is close to professionalism. Formulating their attitude to working with a Virtual Workshop was the overwhelming majority of students from the experimental group (92.5% of respondents) spoke in favor of continuing such educational activities, which has a positive impact to the practical outcomes.

The findings of this study as in conformity with Purushottam et'al (2023), on the Effectiveness of VLEs in promoting lifelong learning and preparing students for the demands of the 21st-century workforce: These scholars suggests that VLEs can be effective in promoting lifelong learning and preparing students for the demands of the 21st-century workforce. The findings revealed that VLEs can play a critical role in promoting equity and access to education, particularly for students who may face barriers to traditional classroom learning, such as those in rural or remote areas, those with disabilities, or those with caregiving responsibilities. VLEs can provide students with access to high-quality education regardless of their location, socioeconomic status, or other similar factors.

Conclusions and Recommendations

In conclusion, Entrepreneurial Technology Education through the application of Virtual Workshop Packages represents a pivotal opportunity to enhance students' readiness for entrepreneurship and skilled employment in the metalwork industry. By addressing traditional educational challenges and leveraging technological innovations, this approach not only enriches the learning experience but also empowers students to contribute effectively to national development goals. Based on the findings, it was concluded that the VWP significantly improved students' cognitive and psychomotor achievement in metalwork practical at technical colleges in Nigeria. This study recommends that:

1. Workshops and Seminars should be organized by the various State Science and Technical Education Boards in Nigeria to create awareness among metalwork teachers and students on the importance of the VWP as it has significantly enhanced students' cognitive and psychomotor achievement in metalwork practical towards improving their entrepreneurship skills

2. An intervention in form of teacher training/Entrepreneurial Technology Education programme should be initiated by the States Science and Technical Education Boards in Nigeria to train existing metalwork teachers on the use of the VWP for teaching and learning of metalwork practical at technical college level.

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Globalization and the Nigerian Education System: Challenges and Way-Forward

By

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Abstract

The present study is a systematic review with the aim of finding the way forward for to the issues surrounding globalization and the Nigerian education system. The social, political, economic and technological changes in the today (globalization) have revolutionized education, calling for radical changes to meet the current demands of the society. Internet is a window to the world; it opens a vast store of information and communications. Connectivity has been important as building a new school for community advancement. This paper therefore discusses the challenges and opportunities of globalization through application of information and communication technologies (ICT) to Nigerian education system. Globalization has turned out to be a term referring to a great many of fields ranging from economy and politics to communication technologies and culture to describe a large spectrum of changes which is already able to spread all around to world. Just as many other organizations in the society. Education institutions are also inevitably affected by innovation requirements. In that way, it is true to suggest that initial innovation movements in education started with the revision of some applications in the past and the pinpointing of lack points. Then, this process is practically followed by a group of new revisions. As for the third step, we could see the challenge between the new and traditional applications in education. Just like other services offering social benefits, education has traditionally been regarded as a public commodity because of the positive externality it leads to, and investments and subventions of the state in this field have almost always been perceived as a public service.

Keywords: *Education in Nigeria*, globalization, globalizaton and education, ICT

Introduction

Globalization is the technological effort in reducing the physical distance among nations and societies of the world through information transfer at speed that is hitherto unknown in information technology. Globalization is the process of international integration arising from the interchange of world views, products, ideas and other aspect of culture (Aslan, 2010). Globalization has been celebrated concept since the turn of 21st

century, as an abstract concept, concretizing its definition is somehow difficult. It is a new phenomenon and multi-dimensional but dimly understood and it affects all economic, environmental social and political which is applied to all aspect of human discipline. In its broader sense, globalization refers to the existence of relations between two different regions of the world and the reciprocal influence that societies exert upon one

another. Globalization is the process which has affected many experienced growth, life, one of those being education (Beycioğlu, 2010). Presently, many developing countries have experienced growth in educational facilities available to them due to entry of institution from the west; some believe that this process is an invaluable opportunity from the people of the developing countries to raise their skills and standards of education (Ofosu, 2010).

Globalization has turned out to be a term referring to a great many of fields ranging from economy and politics to communication technologies and culture to describe a large spectrum of changes which is already able to spread all around to world. Just as many other organizations in the society, education institutions are also inevitably affected by innovation requirements. In that way, it is true to suggest that initial innovation movements in education started with the revision of some applications in the past and the pinpointing of lack points. Then, this process is practically followed by a group of new revisions. As for the third step, we could see the challenge between the new and traditional applications in education. Just like other services offering social benefits, education has traditionally been regarded as a public commodity because of the positive

externality it leads to, and investments and subventions of the state in this field have almost always been perceived as a public service. However, global changes indicate that every step of education has gradually been evaluated as consumption commodity parallel to individual preference. From some time, globalization has also invariably affected teaching and training like many other fields of modern social life.

The education system has failed to meet current social challenges. The increase in youth problems such as a problematic transition to the working world, increasing poverty, teen age pregnancies, drugs abuse, intolerance towards minorities, juvenile delinquency and violence are treated as a reflection of fact that schools are no longer have any connection with the real life world. In order to integrate into the world economy, people must not only acquire the knowledge and tools of traditional knowledge, but above all, they must be capable of acquiring new skills demanded by a knowledge society. Indeed, the resulting rapid change in technological and scientific knowledge make learning a permanent process; a lifelong learning process in the words of the the report of the International Commission on Education for the 21st Century to UNESCO,

entitled: the treasure within (Bakhtaran, 2011).

Globalization as a Concept

Globalization as a concept is the process of world shrinkage, of distance getting shorter, things moving closer. It pertains to the increasing ease, with which somebody on one side of the world can interact, to mutual benefit, with somebody on the other side of the world (Larsson, 2001). Globalization involves a new consciousness of the world as a single place, the world is hence described as a "global village" Globalization is perceived by some as being a revolution in information technology whereas the industrial revolution was a revolution in machine technology. Therefore, the central components and major fuelling force behind globalization is information and communication technology. (. Princová, 2010). Supposes that one aspect of the globalization of education has been the creation 'of twinning project' between one western and non-western university (www, flinders, edu.au). Through the globalization of education, which is the knowledge transfer from the western countries into developing countries, it is intended to improve the skills and capability of the people receiving it. The country's ability to stay competitive in knowledge driving-world of today is dependent on the development and

acquisition of the right skills at different levels of human development endeavours At the heart of the relationship between globalization and education is the relationship between global political economy and the nation in general (Princová,2010). Same Princová, (2010), repost that the effect of increasing global economic competition makes the nation focus on economic policies that improve global competitiveness at the expense of policies that stabilize the current configuration of domestic political economy. It is globalization that forces the nation to focus more on acting as economic growth promoters for their national economies than as protectors of the national identity.

Education as a concept

The essence of education is to remove the veil of ignorance in order for men/women to appreciate human sense of reasoning. Hence, education can be understood as knowledge becoming conscious of itself (Momodu, 2019). Education equips the mind to lead a course of reasoning for the betterment of the individual and community. It is a continuous process towards understanding human achievements in the area of music, arts, architecture, literature, philosophy, religion, political organization, trade and commerce, human relationships, feelings, science and

technology as well as other ideas and values implicit and explicit (Osakoyo, 2010). Education can be explained to mean the medium through which the society transmits its cultural heritage to the younger generations. The education of any society usually reflects its whole essence. This means that it compresses its philosophy and way of life. The education of any society involves the transmission of all knowledge that is deemed worthwhile. Education as the process by which an individual acquires the many physical and social capabilities demanded by the society in which he or she has been born into. The whole essence of education is to ensure the proper functioning and survival of an individual in his society. Education enhances an individual's ability to impact positively on and improve his society. Education therefore performs a most significant complex social function of the control of tools for societal development. Recognizing the role of education to the individual and society at large Orobosa (2010).

Education involved the deliberate efforts on the part of the educator in developing the personality of the child and to prepare him for membership of his society. It is a process of acquiring knowledge and ideas that shape and condition man's attitudes, actions and

achievements. Education is a major concern for all societies. As the foundation and essential driving force of economic, social and human development, education is at the heart of the change that is dramatically affecting our world in the area of science, technology, economics and culture. It is the reason behind social change and scientific progress, and in its turn, it is subjected to the results of progress that it has engendered, both with regard to content as well as methods and established aims.

Globalization and Education

Globalization has a close relation with education. As education has an important place in shaping a society, globalization has to be connected with education and the global activities have a deep impact on it. Globalization of the world economies is leading to increase emphasis on internationalization of the subjects included in a course of study in school. It also creates the opportunities for new partnerships in research and teaching with agencies and institutions across the world (Ibrahim, 2006). Globalization is one of most powerful worldwide forces that are transforming the basis of business competition, paradoxically harkening an era in which small, local communities of practice may lead to a prominent structural form (Chaudhary,

2016). Globalization contribute to develop the health and education systems in the developing countries. One could clearly see that education has increased in recent years, because globalization has a catalyst to the jobs that require higher skills set. Health and education are basic objectives to improve any nations, and there are strong relationships between economic growth and health and education systems. Through growth in economic, living standards and life expectancy for the developing nations certainly get better. With more fortunes poor nations are able to supply good health care services and sanitation to their people. In addition, the government of developing countries can provide more money for health and education to the poor, which led to decrease the rates of illiteracy. This is seen in many developing countries whose illiteracy rate fell down recently. It is truth that, living standards and life expectancy of developing countries increase through economic gains from globalization Dienye (2004). According to the World Bank (2004) " With globalization, more than 85 percent of the world's population can expect to live for at least sixty years and this is actually twice as long as the average life expectancy 100 years ago". In addition, globalization helped doctors and scientists to contribute to

discover many diseases, which spread by human, animals and birds, and it helped them to created appropriate medicines to fight these deadly diseases.

The Impact of Globalization on Education

Globalization has radically transformed the world in every aspect. But it has especially transformed the world economy which has become increasingly inter-connected and inter-dependent. But it also made the world economy increasingly competitive and more knowledge based, especially in the developed western countries including the UK. While blue collar jobs have been decreasing, white collar jobs have been increasing, especially in the service sector. At the moment of writing, almost 80 percent of Britain's GDP comes from the service sector. As a result, there is an increased demand for highly-educated and highly-skilled labour force. In contrast, work performed by unskilled workers has either been taken over by robots or unskilled workers in the developing countries. In order to meet the needs of the fundamentally changed economy at both global and local levels, education system needs to adapt to new realities. But besides equipping the students with the necessary skills and knowledge to meet the employers' needs, the students should also be equipped with the necessary skills and knowledge to recognize

and ‘capitalize’ the many opportunities offered by an increasingly global world (World Bank (2004).

Education is Undergoing Constant Changes under the Effects of Globalization.

The effects of Globalization on education bring rapid developments in technology and communications. It reflects the effect on culture and brings about a new form of cultural imperialism. It brings rapid developments in technology and communications as foreseeing changes within school systems across the world as ideas, values and knowledge. The rise of a global society, driven by technology and communication developments are shaping children, the future citizens of the world into ‘global citizens’, intelligent people with a broad range of skills and knowledge to apply to a competitive, information based society. The Information and Communication Technologies is defined as divers set of technological tools and resources used to transmit, store, create, share or exchange information. These technological tools and resources include computers, the internet (websites, blogs and emails), live broadcasting technologies (radio television and webcasting), recorded broadcasting technologies (podcasting, audio and video

players and storage devices) and telephony (fix or mobile, satellite, Visio/video conferencing, etc.) (UIS, 2009).

There is need to reaffirm that the most effective policy to integrate ICT in education is through whole school based planning, teacher training and professional development. We highlight that the challenge is not only to develop ICT competency standards for teachers and prepare teachers to integrate ICT in their pedagogy, but also to offer continuous support and to provide them the incentives and the professional motivation to unlock ICT to enhance the quality of learning To incentivize teachers, governments and institutions are recommended to integrate the evaluation of the use of ICT by institutions and teachers into the systems and practices for monitoring the quality of learning. The major components of ICT system are Software, Hardware, Cloud computing, Transaction, Data, Internet and Communication Technologies (UNESCO, 2017). The future of countries often lies within their ability to compete in a worldwide market where industrial based economies are giving way to knowledge based industries, realizing the importance of "knowledge, skills and the intellectual capacity to meet the challenges of

accelerated change and uncertainty (Stallings, 2000).

However, despite differences in economy, political, culture and society, second and third worlds have adopted educational ideals from western thought and are anxious to appear modern and therefore promote education as a symbol of modernity and development to their own population and the foreign countries. The spread of education internationally, as a result of globalization, has clearly had effects on cultures worldwide. The capitalist society is gradually becoming global with a strong emphasis on free trade emerging. Educational institutions have reacted accordingly, by becoming more market oriented, focusing their energy more on creating funds rather than providing sufficient education for students. Due to this increasing free trade around the globe – to end protection in many sectors so that there is more competition and privatization, education is increasingly being drawn into this global capitalist competition. The role of education has become more linked to globally competitive positions. Subsequent changes in university functions have lead universities toward “direct entrepreneurial activity to sustain themselves.” This in turn produces a change in institutional approaches to the development of overseas education.

University courses must now be cross-cultural in content, which is in association with the growing number of students, particularly in the 1990's, searching for higher education outside of their own country (Chaudhary, 2016)

In today's environment, education provides individuals with a better chance of employment, which in turn leads to a better lifestyle, power and status. Lack of regulation is a major issue with the globalization of higher education. The current globalization of higher education creates both challenges and opportunities. The relationship between universities education and globalization gives special attention. Education will be the answer to many problems raised by globalization. Educational goals are seen to be an area of great concern in the era of globalization. It is here that universities play a crucially important role, for create better society. It is impossible to ignore the global; universities need to reflect on the impact of globalization. They must engage with the issues of globalization, both theoretically as analysts and researchers, and practically as academic workers involved in an increasingly globalized enterprise. Universities providing a high quality education for the globalized world, despite its focus on internationalism

and cross-cultural communication, are still based on an individualistic model of teaching (Chaudhary, 2016).

Some Challenges of Globalization on Education (ahead)

Education been viewed from different perspectives is full of challenges, be it social, political, or efficiency point of view. The stakeholders in nation's educational system are faced with conflicting political and social objectives. In accordance with the provision of Nigerian constitution of 1989 section 19, the government (decision-makers) shall:

- i. Direct its policy towards ensuring that there are equal educational opportunities at all levels
- ii. Promote science and technology

Already there are symptom of lack of innovativeness in the current educational system. It will pertinent at this stage to consider the level of preparedness of the nation for smooth ride into the Global economy. The curriculum in our educational system is still beclouded with aspects relating to simple mastery of information, concepts and definitions. Nigerians need to update the curricula in all fields/aspects of science, technology, engineering and mathematics, particularly in vocational technical courses (Kaitila, 2002). This will enable our engineering and technology education to be

oriented towards inculcating in parts, the acquisition of competencies necessary for self-reliance. The Federal Republic of Nigeria (FRN, 1989) stated that one of the specific vocational secondary education in Nigeria is to equip students to live effectively in our modern age of science and technology .Emphasis is on recall of information rather than the flexible use of interdisciplinary psycho- motive knowledge to solve emerging contemporary problems. The required tools and services (computer and internet services) are not within the reach of the average or common Nigerian even though Nigerian have been acclaimed to compete favourably with the advance nations of the world in this regards. Therefore, rapid growth rate in technologies engineering and science, as well as many variables such as national leadership (among others) has to be looked into. More, so substantive progress in implementation of information and communication and for that matter progress in quality of life and development cannot be achieved without preparing people for a knowledge society. This partially involves making an environment endurable for using computer in schools training, simulation techniques information system in education which have no slogan for national development (Kotilainen & Kaitila , 2002).

To present, many of the challenges militating against adequate provision of information and communication technology (ICT) facilities and services in Nigeria's educational system as enumerated below;

1. Poor and inadequate telecommunication facilities,
2. Poor level of ICT literacy even within the academic community,
3. Poor computer facilities,
4. Minimum involvement of academic institutions in a work building and diffusion Africa and
5. Ignorance of decision or policy makers of the power of information network on the educational and industrial development (Ofosu, 2010)).

Accordingly, Kotilainen, M and Kaitila, V. (2002) posit that in a discussion on 'Globalization, Democracy and Corruption' at the University of Colorado, Denver Health Sciences Centre (2002), it was observed that globalization is seen as to undermine cultural diversity, deconstructing social values, destroying group identity and destroying social cohesion. It is also viewed as a standardizing and a commercializing force that stifles diversity and dissent and spreads western culture. These views may create barriers to the growth of globalization especially in a developing countries like ours

(Nigeria) where people tend to hold firmly to their beliefs and cultures. Information and communication technologies have a major role not only in improving existing learning but also extending opportunities for lifelong learning. In Nigeria, there are few opportunities of second chances and learning is conceived of as a discrete activity that one engages in only during the early years of life. Unfortunately, very little provision exist for lifelong learning opportunities.

Conclusion

Today there are an estimation of about 900 million illiterates on the world and 130 million children unable to attend primary schools by implication, their access to modern day education is limited by time and space, age, socio-cultural environment, work schedules and physical or mental handicaps (UNCSTD, 1996). Another important challenge worthy of note is that of income inequalities which affect resources for education. When combined with the ideology of neoliberalism and private sector realization, they exhaust commitment and education as a public good and make education a commodity available only to those with means. Income inequality has become a familiar and well cited challenge about globalization in general and about education within globalization in particular

(Goldberg & Pavcnik, 2007). The ultimate relevance of this challenge lies in the direction of the relationship that is implied by the globalization dynamics that are producing and the range of consequences that may flow from it. The root globalization proposition is that over the past 50 years the dynamic of contemporary globalization have simultaneously produce a great amount of wealth in absolute and perhaps relative term as well, while at the same the time producing as great a mal-distribution of such wealth as has ever been. One among major challenge militating against globalization in Nigerian educational system is the death of information and communication technology (ICT) infrastructure and facilities. This problem has been lamented by several authors such. Annan, K (2000). Bacchus, N & Foerster, A (2005), Cronin, M. (2003), Ibrahim, MJ (2006). Goldberg, PK & Pavcnik, N. (2007) to mention a few.

Recommendations

The following recommendations are suggestions and a way forward:

1. Government should provide rich and adequate telecommunication facilities in our institutions learning across the country
- 2 Government should intensify its commitment and effort and raises the Level

of ICT literacy within the academic communities

3 .Enough computer facilities should be provide by the government to our schools in respective of locations

4. .There should be Concentrated involvement of academic institutions in a work building and diffusion Africa and

5. An awareness and sensitization efforts on the decision or policy makers on the power of information network for the educational and industrial development should be intensified by the stakeholders of education

6. Building a better economy in the nation that will bring about familiarization and rapid development of the capital market in the educational sector should be motivated by the authorities concern

7. Introducing new technologies into learning and business sectors like the new technologies and progress in telecommunication like satellites, mobiles and the rest should be promoted by the government

8. The new scientific research patterns should be promoted by the authority concern, so that it will result in new innovations and initiation in the education sectors

9. Living standards of people of the country should be raised through motivational and empowering efforts by the government

10. Emphases should be placed by the authorities on the introduction of better trade, this is so because when more people are employed it will increase productivity as well as prosperity.

11. Apart from the economical aspect, government should also make globalization

to bring about an impact on political and cultural realm adjustment.

12. Critically speaking, globalization should be made to bring about different ideologies amongst people and mobilization processes on the acceptance of new development strategies in education sectors and other agencies of development.

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Effect of Online Interactive Instructional Resources on Students' Performance in Algebraic Fractions among Senior Secondary School in Kano Metropolis, Nigeria

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Abstract

This study examined Effect of Online Instructional Resources on Students' Performance in Algebraic Fraction among Senior Secondary School in Kano Metropolis, Nigeria. Two research objectives, two research questions and two null hypotheses guided the study. A quasi-experimental design involving pretest, posttest, post-posttest and control group design was adopted. The study involved two groups: the experimental was taught algebraic fractions using Online Interactive Instructional Resources (OIIR) while Conventional Lecture Method (CLM) was used for control group. The population of the study consisted of 21,397 SSII students in Municipal and Nasarawa educational zones of Kano metropolitan. A multistage sampling techniques was applied to select sample of 164 students (87 boys and 77 girls) drawn from four secondary schools in the two educational zones, where four (4) intact classes were used for the study- one experimental and one control group from each zone. Algebra Performance Test (APT) was used for data collection. Descriptive statistics of means and standard deviations were used to answer the research questions. Null hypotheses were analyzed using Independent t-test and were tested at $\alpha = 0.05$ level of significances. The result of the analysis showed that the experimental group OIIR performed significantly better and than their counterpart in the control group (CLM). However, there was no significant difference between male and female students taught algebraic fractions with OIIR. It was recommended among others that programmers should be encouraged by Government patronage to use mathematics curriculum in the designing of web-based (OIIR) for use within the Nigerian school system and equally arrange them according to classes.

Keywords: *Online instructional resources, performance, algebraic fractions, gender*

Introduction

Mathematics is one of the most important school subjects in the curriculum worldwide. It is a subject that has direct relationship with other subjects, particularly sciences and technology. Mathematics is the science that deals with the logic of shape, quantity and arrangement (Elaine, 2013). In the objectives of teaching mathematics at senior secondary level, much emphasis is placed on the

teaching and learning of the subject in a bid to achieve the goals of education as it is spelt out in secondary curriculum that mathematics is taught as core subject due to its relevance to the individual and society at large. The mathematics syllabus clearly stated that the mathematics is designed to enable the learner to acquire attitudes, skills and knowledge that will be relevance to his or her life after school

(FRN, 2013). It is therefore necessary for students to do well in mathematics so as to have better career in future.

Algebra is considered as very important branch of Mathematics. The word 'Algebra' is derived from the Arabic word Al-Jabr which refers to the operation of taking a quantity from one side of an equation to another, and changing its sign. It is also the process of subtracting similar quantities from both sides of an equation. Leohard (2006) has defined algebra as: one of the main branches of Mathematics concerned with the study of structure, relation, quantity and the effects of adding and multiplying numbers, variables, polynomials along with their factorization and determining their roots. Mathematics was designed to help solve certain types of problems quicker and easier based on the concept of unknown values called variables, unlike arithmetic which is based entirely on known number values (Redden, 2011). According to Omobola and Tudunkaya (2018), algebra has two main branches; elementary algebra and abstract algebra. Elementary algebra is vast and covers a number of concepts. These concepts include: introduction to algebraic quantities, algebraic equations, algebraic inequalities, simplifying expressions and radicals, exponentiation and logarithms, linear

equation in one and two variables, algebraic fractions, quadratic equations, factorization, polynomials, and Graphing. This study is limited to elementary algebra – algebraic fractions

Online learning Resources refer to digital learning content, materials/or tools available online to learners. These include web documents, tutorials, animations, games, practice quizzes, programs, applications, website and others. Online learning offer a wide range of possibilities of sharing information and uploading documents with different formats because it is web-based the installation of additional tools is not required and once uploaded, the content is available for users anytime (Raheem & khan, 2020). Online learning does not only provide students with time and place flexibility, but also with the ability to apply one's knowledge. Students got immediate feedback from online assessments, and there was greater lecturer-student interaction as well as student-student interaction through meaningful dialogue with peers. Studies revealed that Web-Based Instructional Package can be used to enhance mathematics instruction (Saini, Wahid & Purohit 2014; Usman, Wishishi, Gambari & Olayinka, 2017). However, Micheal (2002) found no significant difference in the test scores of

algebra students who received computer-assisted instruction (CAI) and traditional lecture (TL). In another study, Block, Udermann, Felix, Reineke and Murray (2008) reported no significant difference reported no significant differences were found between online and conventional courses in the 50-Point written exam. In this study, the website www.intmath.com (<http://www.intmath.com>) was used by students to learn algebraic fractions with steps-by-step guides. This website was chosen because it is easily accessible and free.

Academic performance according to Kiggundu (2009) is the measured ability and achievement level of a learner in a school, subject or particular skills. The performance of students overtime has not being quite encouraging. Kurumeh and Chiawa (2009) observed that there was general outcry of poor achievement and lack of interest in the subject by both secondary and technical school students in Nigeria. This poor performance of students could not be completely detached from mathematics which was always taught in traditional way in every institution of learning (Williams, 2004). This implied that mathematics had been taught manually with the teacher illustrating on the blackboard through

diagrams and symbols using chalk, textbook among other while the students could copy the problem solved in their note books. The teachers then explained the diagrams and symbols to the students, making the learning process teacher-centered. Today, the teaching of mathematics has taken a different turn with the introduction of technology into the mathematics classroom. But the extent to which this innovation impacts on students' performance is the focus of this study.

Gender refers to the socially and culturally constructed characteristics and roles which are ascribed to male and female in a society (Okeke, 2008). Available literature have not been able to identify a single direction of difference in performance in Mathematics between male and female students., Most scholars found no significant in academic performance of male and female that exposed to the used of instructional technology (Ayuba, 2017; Gambari, Shittu, Ogunlade & Osunlade, 2017).

Ayuba (2017) found no significant difference between the mean retention scores of male and female students exposed to Computer-Based Instruction in Algebraic Word Problems also; Gambari et al. (2017) reported that there was no significant difference in the performance of male and female undergraduates taught with blended learning.

However some scholars found that male students performed better than female students (Zubairu, 2016; Ojaleye & Awofala, 2018) when exposed to technology-based learning. The controversy as to which of the sexes would have better academic performance therefore continues. Hence this study sought to find out if the use of Online Instructional Resources in teaching Algebra would improve male and female students' performance.

Objectives of the Study

The main objective of the study was to examine the effects of online interactive resources on performance and retention in algebraic fractions. Specifically, the study sought to:

1. investigate the effects of Online Interactive Instructional Resources (OIIR) and Conventional Lecture Method (CLM) on senior secondary school students' performance in algebraic fractions .
2. find out the effects of OIIR on academic Performance of male and female students in algebraic fractions .

Research Questions

The following research questions were formulated to guide the study:

1. What is the difference among the mean performance scores of senior secondary school students taught algebraic fractions using Online Interactive Instructional Resources (OIIR) and their counterparts in the Conventional Lecture Method (CLM)?
2. Would there be any difference between the mean performance scores of male and female students when taught algebraic fractions using OIIR?

Null Hypotheses

The following null hypotheses were tested at $\alpha = 0.05$ level of significance:

H₀₁: There is no significant difference among the mean performance scores of senior secondary school students exposed to Online Interactive Instructional Resources (OIIR) and those exposed to the same concept using Conventional Lecture Method (CLM).

H₀₂: There is no significant difference between the mean performance score of male and female students taught algebraic fractions using OIIR.

Methodology

The research design for the study was quasi-experimental control group design adopting pretest, post-test and post posttest. The population for the study covered all the Senior Secondary Two (SS II) students in Municipal and Nasarawa Education Zone in Kano Metropolitan. The total population was

21,397, of which 11,595 were male while 9,438 were female of average age of 17 years plus. A total number of 164 students were drawn from six (4) public senior secondary schools in Nasarawa and Municipal education zones of Kano State through a multistage sampling technique. In the first stage, six schools from two (2) education zones in Kano Metropolitan (Municipal and Nassarawa Education Zones) were randomly selected using purposive sampling technique. At the second stage, Out of the six (6) schools three (3) were male schools and three (3) were female schools. Boys' schools were grouped and from the group, two schools were randomly selected. Then girls' schools were equally grouped and from the group, two schools were randomly selected, making a total of four schools. Two, were boys' schools while two, were girls' schools. At the third stage, the researcher randomly selected one class from each school making a total of four intact classes - two (2) male classes and two (2) female classes. At the fourth stage, the two male classes and two female class were randomly assigned as experimental group and control group through balloting. Thus, Seventy six (36 male and 40 female) students participated in the experimental group while eighty eight (51 male and 37

female) students were used in the control group. Algebra Performance Test (APT) was meant to measure the Performance of students in algebra. It was adapted from New General Mathematics for Senior Secondary School Two and West African Examination Council (WAEC) past questions because of the standardization of the questions. It consists of two sections: section A and B, Section A was for students' Bio data information and section B consist of fifty objective questions and was validated by three experts. The reliability coefficient of APT was computed using Pearson Product Moment Correlation (PPMC) and reliability of 0.94 was obtained.

Data collected were subjected to both descriptive and inferential statistics. Research questions were answered with the use of mean and standard deviation. The hypotheses were tested using Independent t-test and were tested at $\alpha = 0.05$ level of significances

Data Presentation

Data performance of the students in algebraic fractions using Online Interactive Instructional Resources and conventional lecture method was analyzed with descriptive statistics of mean and standard deviation as presented in Table 1

Table 1***Descriptive Statistics for Performance between Experimental and Control Group***

Methods	N	\bar{X}	S.D	Mean Difference
Exp. Group (OIIR)	76	41.55	6.380	5.348
Control Group (CLM)	88	36.20	7.144	

Table 1 highlighted the means and standard deviation of the experimental and control groups with 41.55, 6.380 and 36.20, 7.144 respectively. This revealed that the mean of the experimental group was higher than that

of the control group with mean difference of 5.348. Data on gender Performance scores of student taught algebraic concepts using OIIR was analyzed with descriptive statistics was shown in Table2

Table 2***Descriptive Statistics for Performance of Male and Female Students in the Experimental Group***

Treatment	Gender	N	\bar{X}	SD	Mean Difference
Exp. Group (OIIR)	Male	36	41.33	6.862	-0.42
	Female	40	41.75	5.995	

From Table 2 the mean scores of male and female in the Experimental Group I (OIIR) are 41.33 and 41.75 respectively with the mean difference of -0.42. The female students achieved higher than male students.

Ho₁: There is no significant difference among the mean performance scores of senior secondary school students exposed to Online Interactive Instructional Resources (OIIR) and those taught using Conventional Lecture Method (CLM)

Data Analysis

The following null hypotheses formulated were tested at $\alpha = 0.05$ level of significances. The analyses of the result were presented as follows

To determine whether there were significant differences in the post-test mean scores of the OIIR and CLM group, data were analyzed using t-test as shown in Table 3

Table 3***t-test Comparison of the Posttest Mean Scores of the Experimental Group (OIIR) and Control Group***

Group	N	Mean	SD	Df	t-value	P-value	Remark
Experimental	71	41.55	7.928	162	5.022	0.001	Sig.
Control	88	36.20	5.162				

*Significant at $P \leq 0.05$

Table 3 shows that the t-value computed is 5.022 and the p-value of 0.001 is less than the

alpha value of 0.05. Hence the null hypothesis one was rejected and concluded

that, there was significant difference between the mean scores of students exposed to Online Interactive Instructional Resources and Conventional Lecture Method.

H₀₂: There is no significant difference between the mean performance score of male and female students taught algebraic fractions using OIIR.

Table 4

t-test Comparison of the Posttest Mean Scores of Male and Female Students of the Experimental Group I (OIIR)

Group	N	Mean	SD	Df	t-value	P-value	Remark
Male	36	41.33	6.862	74	-0.283	0.778*	Not Sig
Female	40	41.75	5.995				

* Not Significant at $P \geq 0.05$

Table 4 revealed the calculated t-value of -0.283 was not significant at $\alpha = 0.05$, similarly the P-value (0.778) > 0.05 . Hence the null hypothesis two was therefore retained and it was concluded that there was no significant difference between the mean scores of male and female pupils exposed to Online Interactive Instructional Resources (OIIR).

Discussion of the Findings

Hypothesis one focus on academic performance of students taught algebraic fractions using OIIR, and CLM group. From the findings in Tables 1 the study reveals that experimental group (OIIR) recorded the higher mean score, This is further confirmed by the result from research hypothesis one (Table 3) which reveal that there is

To test the hypothesis two, the posttest performance means scores of male and female students in the experimental group I (OIIR) were analyzed using t-test statistics. The result of the t-test analysis is shown in Table 4

significant difference in the academic performances in favor of the group taught algebraic fractions with OIIR. This finding agrees with that of Saini, Wahid, Purohit (2014) which reported that those students who received the Web-Based Mathematics Instruction (WBMI) performed significantly better than those in Traditional Mathematics Instruction (TMI) class. It also agrees with those of Gambari et al. (2017) who reported that there was significant difference in the performance of the three groups (Blended Learning, E-learning and a control group) which is in favor of Blended learning. One explanation for the higher achievement by the WebBased/ OIIR may be due to the fact that students in the group receive immediate feedback by providing them with step by step

answers (solutions) of any question\ exercises\ assignment they query regarding mathematics (Algebra).

However, it contradicts the finding of Micheal (2002) who reported that those students who were taught with Online learning system (NOVANET) did not show any significant difference in retaining the information than those that received conventional classroom instruction on factoring in Algebra. It also varies with Block et al. (2008) who reported no significant differences were found between online and conventional courses in the 50-Point written exam or in the three regular course exams.

Hypothesis two centered on gender related difference on academic performance of male and female exposed to algebraic fractions using (OIIR). From the finding in Tables 4, it was revealed that there is no significant difference in the performance scores of male and female students exposed to Algebra using OIIR. This implies that their performance ability is relatively the same. This finding was supported by Gambari et al. (2017) who reported that there was no significant difference in the performance of male and female undergraduates taught with blended learning. It is also in agreement with the findings of Ayuba (2017) which revealed

no significant difference between the mean retention scores of male and female students exposed to Computer-Based Instruction in Algebraic Word Problems. However, the finding of this study varies with that of Zubairu (2016) who found out that the male students have significantly higher performance than female Senior Secondary Schools Student's when taught Biology with Internet – Based Learning Tools. It opposed the finding of Usman et al. (2017) who reported that there was a significant difference in the mean achievement scores of male and female upper basic students taught Geometry using Bashiwushi-Futmin Lissafi (BFL) Web-based Instructional Package in Hausa Language.

Conclusion

It is generally pointed out that the Conventional Lecture Method (CLM) does little effective in enhancing performance of students in learning algebraic fractions This is usually noticed from the performance of students in public examination such as WAEC. Since Traditional Lecture Method (TLM) does little effective in enhancing performance of students in learning mathematics, this present study was able to investigate that Online interactive Instructional Resources (OIIR) was effective in enhancing students' performance in learning algebraic fractions , based on the

empirical evidence presented. Regarding gender, the use of OIIR does not discriminate between genders in academic performance thus; OIIR is gender friendly at SSS level.

Recommendations

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

1. Mathematics teachers should adopt the use of OIIR for effective teaching of algebraic fractions. By so doing, the performance of students in the subject could be increased and improved.
2. Programmers should be encouraged by Government to patronize them to use mathematics curriculum in the designing of web-based (OIIR) for use within the Nigerian school system and equally arrange them according to classes.
3. Teacher training institutions such as universities, colleges of education should ensure that pre-service teachers are trained on the use of OIIR in teaching of algebra
4. State Government should make provision of functional computer laboratory in schools with regular supply of electricity at all times.

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Developmental Pathways of Parental Negligence as Correlates of Delinquent Behavior among Young Adults in Agege LGA, Lagos State

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Abstract

This study examines the relationship of domestic violence, parental divorce, effective communication, and parental substance abuse on the delinquent behaviors of young adults in Agege Local Government Area. Four research questions were raised with four null hypotheses tested. A descriptive research design was adopted, targeting young adults aged 13-29 in Agege area of Lagos State. With an approximate population of **269,266**, young adults aged 13 to 29 are estimated to constitute around **43%** of the total population. This gives an estimated population size of **116,508** young adults in the Agege Local Government Area). Using a simple random sampling method, 100 respondents were selected. This sample size is large enough to yield reliable results and identify significant relationships between the variables being studied (domestic violence, parental divorce, ineffective communication, and substance abuse) and delinquent behaviors). Four null hypotheses were formulated, and tested. Data were collected using a self-developed questionnaire which yielded Cronbach's coefficient ranging from 0.745 to 0.811. The data were analyzed using descriptive statistics (frequency counts and percentages) and the hypotheses were tested inferential statistics (Chi-square tests) at 0.05 alpha level of significance. The findings indicate that domestic violence, parental divorce, ineffective communication, and substance abuse significantly influence delinquent behaviors in young adults. The study recommends parental education and the organization of enlightenment and sensitization programs to address these issues.

Keywords: *Developmental pathways*, parental negligence, delinquent behaviors, young adults

Introduction

The rapid advancement of technology has significantly impacted the lives of young adults, bringing both positive and negative changes to various aspects of life, including relationships, communication, academics, and health (Smith, 2021; Johnson, 2022). While these innovations have enhanced many fields, they have also contributed to the erosion of traditional family values in the 21st century. This shift underscores the need

for parents to adopt effective strategies during the developmental process, as their role is crucial in shaping the future of their children (Green & Brown, 2023). Parents are the primary caregivers from whom children learn and seek protection and care. Despite the anticipation parents about their children's developing personalities, many lack the knowledge and skills necessary to provide adequately for their physical, emotional, and

economic well-being (Miller et al., 2023). Effective parenting requires deliberate learning and the acquisition of knowledge through experience, which has become increasingly challenging due to the pervasive influence of uncensored information (Parenting Matters, 2016; Nigerian Tribune, 2020).

In contemporary society, many parents fail to adequately supervise and guide their children, leaving them vulnerable to negative influences from peers and other external sources (Smith & Adams, 2021). This parental negligence often stems from over-ambition, the pursuit of wealth, and the consequences of divorce (Williams, 2022). As a result, children are exposed to environments where they can easily fall prey to unscrupulous elements that teach behaviors not addressed by their parents. The busy schedules of parents contribute significantly to this negligence, leading to increased youth restlessness and various societal vices (Ramoni, 2021). Lack of proper attention and monitoring, especially by mothers, has been linked to numerous youth-related issues, highlighting the critical need for parental involvement in their children's lives (Johnson et al., 2023).

The interplay between domestic violence and child development is particularly concerning,

as exposure to such violence can lead to severe emotional and behavioral issues in children (Garcia-Moreno et al., 2021). Studies have shown that children who witness domestic violence are more likely to develop aggressive behaviors and engage in delinquency during adolescence and young adulthood (Finkelhor et al., 2020). This underscores the importance of addressing domestic violence as a critical factor in preventing delinquent behavior. Parental divorce is another significant factor affecting child development. Research indicates that children from divorced families often experience emotional distress, academic difficulties, and increased risk of engaging in delinquent behaviors (Amato, 2019). The instability and conflict associated with divorce can disrupt a child's sense of security and well-being, leading to negative developmental outcomes (Hetherington & Kelly, 2018). Effective communication between parents and children is essential for healthy development. Lack of communication can lead to misunderstandings, emotional disconnect, and behavioral problems (Gottman & Katz, 2016). Studies have highlighted that children who experience poor communication with their parents are more likely to seek validation and guidance from peers, who may

influence them negatively (Steinberg, 2020). Parental substance abuse further exacerbates the risk of delinquency among young adults. Children of parents with substance abuse issues are often exposed to unstable environments, neglect, and emotional abuse, which significantly increases their likelihood of engaging in delinquent behaviors (Kelley et al., 2017). Addressing parental substance abuse through comprehensive intervention programs can mitigate these adverse effects and promote healthier developmental outcomes. By understanding these factors, the research highlight potential preventive interventions and emphasize the importance of early developmental influences on later behavioral outcomes. This study provide insights that can inform policies and programs designed to support at-risk youth and promote positive developmental trajectories in Agege community.

Purpose of the Study

This study investigated the relationship between parental negligence during a person's development and their likelihood of engaging in delinquent behaviors as young adults in Agege Local Government Area. The specific objectives are as follows:

1. To examine if Parental divorce influences delinquent behaviors in young adults in Agege Local Government Area.
2. To determine if Domestic violence among parents affects delinquent behaviors in young adults in Agege Local Government Area.
3. To investigate if Parental effective communication influences delinquent behaviors among young adults in Agege Local Government Area.
4. To examine if Parental substance abuse influences delinquent behaviors among young adults in Agege Local Government Area.

Research Questions

The following research questions were answered during this study:

1. Would Parental divorce influence delinquent behaviors among young adults in Agege Local Government Area?
2. How is domestic violence among parents influence delinquent behaviors in young adults in Agege Local Government Area?
3. Would Parental effective communication influence delinquent behaviors in young adults in Agege Local Government Area.
4. Would Parental substance abuse influence delinquent behaviors among young adults in Agege Local Government Area.

Research Hypotheses

The following hypotheses were tested during this research:

1. Parental divorce would not significantly affect young adults' behavior in Agege Local Government Area.
2. Domestic violence among parents would not significantly influence delinquent behaviors in young adults in Agege Local Government Area.
3. Parental effective communication would not significantly affect delinquent behaviors in young adults in Agege Local Government Area.
4. Parental substance abuse would not significantly influence delinquent behaviors among young adults in Agege Local Government Area.

Methodology

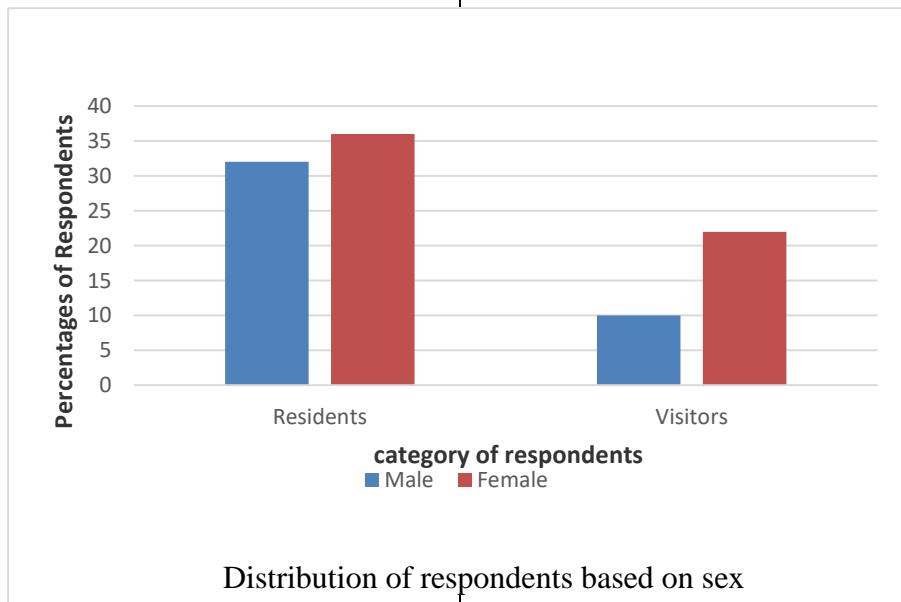
Descriptive survey research design was adopted for the study. According to the most recent population estimates from the Lagos State Bureau of Statistics, the total population of Agege Local Government Area is approximately **269,266** people. Young adults aged 13 to 29 are estimated to constitute around **43%** of the total population. This gives an estimated population size of **116,508** young adults in the Agege Local Government Area (Lagos State Bureau of Statistics, 2021). The population for this study

comprised young adults aged 13 to 29 residing in Agege Local Government Area of Lagos State. A sample of 100 young adults was selected using a simple random sampling technique (this sample size is sufficient to provide adequate statistical power for the study. Statistical power is essential in determining the likelihood that the study will detect a significant effect if one exists. For many inferential statistical tests, including Chi-square tests, a sample size of 100 allows for the detection of moderate to large effects at a 0.05 alpha level of significance. This sample size is large enough to yield reliable results and identify significant relationships between the variables being studied (domestic violence, parental divorce, ineffective communication, and substance abuse) and delinquent behaviors). A self-developed questionnaire was used as the research instrument. The questionnaire was divided into two sections: Section A sought for demographic data and Section B sought for information based on the study's hypotheses, with the following variables: Domestic violence, Parental divorce, Ineffective communication, Parental substance abuse and delinquent behaviors (dependent variable). The self-developed questionnaires (Cronbach's coefficient ranging from 0.745 to 0.811; These values

indicate **acceptable to good reliability**, demonstrating that the instrument consistently measures domestic violence, parental divorce, ineffective communication, and parental substance abuse in relation to delinquent behaviors among young adults.) was personally administered by the researcher with the assistance of two research assistants and collected on the spot after completion. The collected data were analyzed using descriptive statistics, including frequency counts and percentages while Chi-square tests were used to test the hypotheses at a 0.05 alpha level of significance.

Result Presentation
Participants' Demographic variables

The findings showed the distribution of the respondents based on sex and their idea about young adult delinquency. The residents category include the young adults who live in the vicinity and the people who were just visiting the vicinity based on a need. The findings show that 68% of the respondents are residents of Agege local governments while 32% were visitors. The figure further shows that out of the respondents who are residents, 32% were males while 36% were females. Meanwhile, for the visitors, 10% were males while 22% were females. Cumulatively, the respondents distribution for males was 42% while for females was 58%. This means that there were more female respondents than male



On the age characteristics of the participants, the age distribution of the respondents ranges

from 13-18 years, 19-24 years, 25-30 years and above. The figure showed that 11% of the

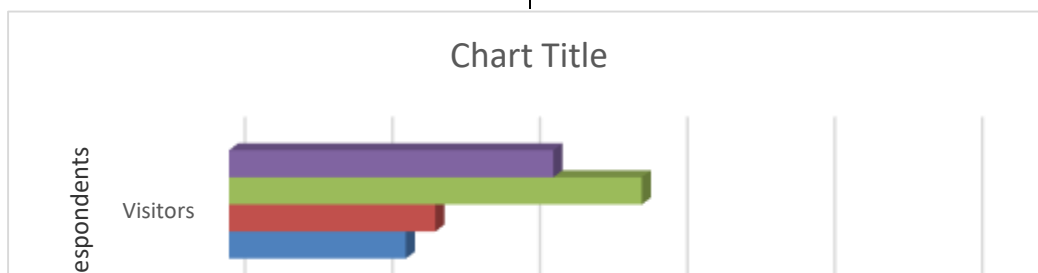
respondents fall between the ages of 13-18 years with only 8% of them in Agege Local Government while 3% were visitors. 31% of the respondents fall within the age range of 19-24 years with only 23% of them resides in Agege Local Government Area and 8% were visitors, about 35% falls between the ages of 25-30 years with only 23% residents of

Agege Local Government Area and 12% were visitors, 23% of the respondents fall above 30 years with only 15% resident of Agege Local Government. This showed that majority of the respondents are within 19-24 years of age.

Distribution of respondents based on age

On Educational qualification, it reveals that 17% of the respondents were illiterates with about 11% out of them residing in Agege Local Government while 6% were visitors, 28% of the respondents had primary school level of education with only 21% out of them residing in Agege Local Government Area, 38% of the respondents had secondary school level of education with about 24% of

them residing in Agege Local Government Area while 14% are visitors and 16% of the respondents had tertiary level of education with about 5% out of them residing in Agege Local Government Area. The data showed that most of the respondents had an average level of education, which is the secondary school level and this moderately shows that the distribution of the respondents is averagely literate.



Distribution of respondents based on level of education

Hypotheses 1: Divorce would not significantly influence young adults delinquent behavior in Agege Local Government Area.

Table 1: Parental divorce influence delinquent behaviors among young adults in Agege Local Government Area.

	Mean	SD	r-value	p-value	Decision
Divorce	21.7	6.21	216	.000	Rejected
Deliquent Behaviour	23.3	7.31			

The mean score of 21.7 indicates the average level of influence or impact that parental divorce has on the young adults surveyed in Agege Local Government Area. This mean suggests a moderately high level of perceived impact of parental divorce on the participants. The mean score of 23.3 represents the average level of delinquent behaviors reported among the young adults in the study. This relatively high mean score indicates that delinquent behavior is

prevalent or significant among the respondents. It suggests that a substantial number of young adults exhibit behaviors classified as delinquent. Table 1 reveals that p-value is 0.000 which is less than the significant value of 0.05 ($0.000 < 0.05$), the null hypothesis that states that divorce will not significantly influence young adults' delinquent behavior in Agege Local Government Area is therefore rejected. Hence, Divorce significantly influence young

adults delinquent behavior in Agege Local Government Area. This is confirmed by the coefficient (r-value) of .216 which indicates low influence.

Hypotheses 2: Domestic violence among parents would not significantly influence delinquent behaviors in young adults in Agege Local Government Area.

Table 2: Parental divorce effect on young adults' delinquent behavior in Agege Local Government Area.

	Mean	SD	r-value	p-value	Decision
Domestic Violence	20.6	5.15			Rejected
Deliquent Behaviour	23.3	7.31	.203	.001	

The mean score of **20.6** suggests that, on average, the respondents reported a moderate level of domestic violence exposure or experience within their households. The standard deviation (SD) of **5.15** indicates that there is some variability in the respondents' experiences, with most scores falling within a range of 5.15 points above or below the mean (approximately 15.45 to 26.05). This suggests that while some respondents experienced higher or lower levels of domestic violence, the overall experiences were somewhat clustered around the mean score. The mean score of **23.3** suggests that the respondents, on average, reported a moderate to relatively high level of delinquent behavior. The higher mean score in comparison to the domestic violence score indicates a tendency toward engagement in such behaviors among the sampled young adults. The standard deviation (SD) of **7.31** indicates a wider range of variation in

delinquent behaviors among the respondents, suggesting a broader spread of behavior levels. Some respondents might have engaged in fewer or more delinquent activities, but the mean suggests that, overall, the reported level of delinquency is substantial. It is revealed on the table that p-value is 0.001 which is less than the significant value of 0.05 ($0.001 < 0.05$), the null hypothesis that states that domestic violence among parents will not significantly influence delinquent behaviors in young adults in Agege Local Government Area is therefore rejected. Hence, Domestic violence among parents significantly influence delinquent behaviors in young adults in Agege Local Government Area. This is confirmed by the coefficient (r-value) of .203, which indicates low influence.

Hypotheses 3: Effective communication will not significantly affect delinquent behaviors in young adults in Agege Local Government Area.

Table 3: Parental effective communication will have effect on delinquent behaviors in young adults in Agege Local Government Area.

	Mean	SD	r-value	p-value	Decision
Effective Communication	22.4	5.60			Rejected
Deliquent Behaviour	23.3	7.31	.214	.001	

The mean score of **20.6** for effective communication indicates the average level of communication effectiveness reported by young adults in Agege Local Government Area. The mean score of **23.3** suggests that the respondents, on average, reported a moderate to relatively high level of delinquent behavior. It is revealed on the table that p-value is 0.001 which is less than the significant value of 0.05 ($0.001 < 0.05$), the null hypothesis that states that effective communication will not significantly

influence delinquent behaviors in young adults in Agege Local Government Area is therefore rejected. Hence, effective communication significantly influence delinquent behaviors in young adults in Agege Local Government Area. This is confirmed by the coefficient (r-value) of .214, which indicates low influence.

Hypotheses 4: Substance abuse would not significantly influence delinquent behaviors among young adults in Agege Local Government Area.

Table 4: Parental substance abuse influence on delinquent behaviors among young adults in Agege Local Government Area.

	Mean	SD	r-value	p-value	Decision
Substance abuse	20.7	5.15			Rejected
Delinquent behavior	23.3	7.31	.205	.003	

The mean score of **20.7** for parental substance abuse indicates the average level of substance abuse by parents as reported by the young adults in the study. The mean score of **23.3** suggests that the respondents, on average, reported a moderate to relatively high level of delinquent behavior. It is revealed on the table that p-value is 0.003 which is less than the significant value of 0.05 ($0.001 < 0.05$), the null hypothesis that stated that Parents

substance abuse will not significantly influence delinquent behaviors among young adults in Agege Local Government Area is therefore rejected. Hence Parents substance abuse have an influence on delinquent behaviors among young adults in Agege Local Government Area. This is confirmed by the coefficient (r-value) of .205, which indicates low influence.

Discussion of Findings

The findings of this study reveal significant relationships between various parental factors and delinquent behaviors among young adults in Agege Local Government Area. The results indicate that parental divorce, domestic violence, effective parental communication, and parental substance abuse significantly impact delinquent behaviors, as evidenced by p-values less than the significance level of 0.05 for each factor. Specifically, the p-values were .000 for parental divorce, .001 for domestic violence, .001 for parental communication, and .003 for parental substance abuse, with corresponding r-values of .216, .203, .214, and .205, respectively. These findings align with existing research that suggests instability and negative experiences within the family environment, such as divorce, violence, and substance abuse, contribute to behavioral issues in young adults. Conversely, effective communication between parents and children positively influences behavioral outcomes.

The significant impact of parental divorce on delinquent behavior in this study is consistent with previous research. Amato (2019) found that children from divorced families often experience emotional distress and behavioral issues due to the instability and conflict

associated with divorce. Similarly, Kelly and Emery (2003) highlighted that parental separation can lead to a lack of supervision and emotional support, which are crucial for a child's development. This study supports these findings, showing that the disruption caused by divorce significantly correlates with higher rates of delinquent behavior in young adults in Agege Local Government Area.

Domestic violence's influence on delinquent behavior found in this study echoes findings from other studies. Finkelhor et al. (2020) demonstrated that exposure to domestic violence adversely affects children's emotional and behavioral development, leading to increased aggression and delinquency. Furthermore, Margolin and Gordis (2000) noted that witnessing domestic violence can normalize aggressive behavior for children, increasing the likelihood of such behavior in their own lives. This study's results, which show a significant correlation between domestic violence and delinquency, align with these established findings.

Effective parental communication's positive impact on reducing delinquent behaviors is well-documented. Gottman and Katz (2016) emphasized the importance of open and supportive communication between parents and children in promoting healthy behavioral

outcomes. Similarly, Laursen and Collins (2009) found that effective communication helps in the development of trust and emotional security, which are crucial in preventing delinquent behaviors. This study reinforces these conclusions, showing a significant correlation between effective parental communication and lower rates of delinquency among young adults.

The influence of parental substance abuse on delinquent behavior is also supported by existing literature. Kelley et al. (2017) highlighted that children of parents with substance abuse issues are at a higher risk of developing behavioral problems due to exposure to unstable and neglectful environments. The findings of this study, which show a significant correlation between parental substance abuse and delinquent behavior, are consistent with these previous studies. This underscores the need for interventions that address parental substance abuse to mitigate its negative effects on young adults.

Conclusion

The significant relationships identified between parental substance abuse and delinquent behaviors, as well as potentially between other familial factors and delinquency, underscores the critical role of a stable and supportive family environment in

preventing delinquent behaviors among young adults as well as in shaping the behaviors of young adults. Interventions aimed at reducing delinquency should incorporate strategies that address these significant parental influences. Providing support and resources for families experiencing divorce, domestic violence, and substance abuse can mitigate the adverse effects on young adults. Additionally, promoting effective parental communication can foster healthier developmental trajectories. In conclusion, addressing familial factors is essential in efforts to curb delinquent behaviors in young adults, emphasizing the need for comprehensive family-centered approaches in policy and practice.

Recommendations

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

1. Parental Education and Support

Programs: Educational programs aimed at helping parents understand the impact of substance abuse and other negative behaviors on their children should be implemented. Support services should also be provided to assist families in overcoming these issues.

2. **Community Awareness Campaigns:**

Community outreach and sensitization programs to raise awareness about the effects of domestic violence, parental substance abuse, and ineffective communication on young people should be organized. Such initiatives could promote healthier family environments and reduce the likelihood of delinquent behaviors.

3. **Support Services for Young Adults:**

Counseling and support services for young adults who are affected by adverse family situations should be developed

and provided. These services could include mentorship programs, psychological counseling, and support groups to address and manage their behaviors and challenges.

4. **Further Research:** Additional research to explore the influence of domestic violence, parental divorce, and ineffective communication in greater detail should be conducted. This could involve larger sample sizes and more diverse populations to validate and expand upon these findings.

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Exploring the Landscape of Sexual Harassment in Higher Educational Institutions in Gombe State

By

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Abstract

This study explores the pervasive issue of sexual harassment within Nigerian higher educational, focusing specifically on higher educational institutions in Gombe State. Sexual harassment, characterized by unwanted sexual behavior in verbal, non-verbal, physical, and visual forms, remains a serious concern in educational institutions across the country. Through a comprehensive survey, the study identifies the types, prevalence, consequences, and resources related to sexual harassment. The research adopted a descriptive survey design, with a sample size of 382 participants comprising students out of 54,297, academic, and non-academic staff. Data was collected using semi-structured questionnaires and analyzed through descriptive statistics. Findings reveal that 65.4% of respondents had experienced some form of sexual harassment, with verbal harassment being the most prevalent. The consequences were far-reaching, affecting academic performance, psychological well-being, and social interactions. A significant gap was noted in the availability of resources to protect victims, with insufficient legal aid, support services, and awareness programs. Additionally, psychosocial factors such as low self-esteem, peer pressure, and financial dependency were identified as major contributors to vulnerability. The study concludes that Nigerian higher educational, particularly in Gombe State, are not adequately equipped to handle sexual harassment cases, leaving victims with limited options for protection and support. Recommendations include the implementation of comprehensive awareness campaigns, the establishment of clear reporting mechanisms, and the provision of robust support services for victims. These reforms are essential for fostering a safer, more inclusive academic environment that protects the rights and well-being of all students and staff.

Keywords: *Sexual harassment*, Gombe State higher educational institutions, prevalence, consequences, psychosocial factors, support services, Gombe State.

Introduction:

To effectively tackle the problem of sexual harassment in higher educational institutions, it is crucial to gain a comprehensive understanding of its nature. Sexual harassment, being a social construct, does not have a uniform definition and encompasses a wide range of

behaviours. It is commonly acknowledged as a form of violence against women (Folosh, 2014). As a maladaptive behaviour with diverse manifestations, precisely defining sexual harassment poses significant challenges. However, a scrutiny of literature indicates that generally

speaking, any unwanted sexual behaviour that causes harm to the victim can be labelled as an act of sexual harassment. Sexual harassment can come in many forms, both implicitly (that is actions or behaviours that may not be outright sexual in nature but still convey inappropriate or unwelcome messages or intentions) and explicitly (that is, actions or behaviours that are openly and clearly of a sexual nature and are intended to harass, intimidate, or offend someone). It can manifest in verbal, non-verbal, physical, or visual forms and can occur in various settings, including workplaces, educational institutions, public spaces, or on-line platforms. The perpetrators and victims can be either of the sexes although mostly, the perpetrators are males and in most instances, the victims are females. (Ueno, 2000, Legislation.gov.uk, 2010, Alhassan, 2011, Joseph, 2014 & Folosho, 2014, Study.com, 2023)

Recognizing the critical nature of the sexual harassment, the Commission on the Review of Higher Education in Nigeria (CRHEN, 2018) has highlighted the increasing prevalence of sexual harassment in higher education institutions. Previous studies have revealed that sexual harassment affects academic performance and overall well-being, leading to fear, intimidation, shame, and other psychological consequences. A study of four Nigerian higher educational revealed that students

identified sexual harassment as being among the stressors hindering academic work (Ohayi, Ezugwu & Chigbu 2015). Another survey of teachers' and students' perceptions of sexual harassment in tertiary institutions in Nigeria revealed that the majority of the respondents agreed that sexual harassment is prevalent in schools (Kayode, 2015). The consequences of sexual harassment vary from person to person depending on the type of harassment. According to Kehinde (2018), victims of sexual harassment may experience fear, extortion, harassment, shame, and helplessness (Egbegi, Friday, Ajah, Benjamin, & Onyejebu, 2019). Researchers have also established other consequences from sexual victimization and or harassment as mental and physical consequences (Balogun, Olatunji, Salihu, Olushola & Ayorinde, 2013). Some researchers, who worked on sexual harassment also, came out with consequences such as fear, anger, depressions, post-traumatic stress disorder, suicidal feelings, and low self-esteem as common with many survivors (Emmanuel & Christian, 2014).

In Nigeria, sexual harassment has become a very serious issue that requires prompt attention to address (Ijitona, Agboola & Olawale, 2020). There are various reported cases of sexual harassment in tertiary institutions in Nigeria particularly in

Higher educational institutions for instance Premium Times (March 25, 2015) and Premium Times (October 31, 2024) list

some tertiary institutions in Nigeria with a reported cases from the victims, below are the list of the institutions.

Table 1
Reported cases of sexual harassment in Nigerian tertiary institutions

S/N	Institutions	Reported cases.
1.	University of Calabar	5 cases between Students and lecturer
2.	University of Lagos	6 cases between Students and lecturer
3.	University of Nigeria, Nsukka	5 cases between Students and lecturer
4.	University of Abuja	4 cases between Students and lecturer
5.	Imo State University	3 cases between Students and lecturer
6.	University of Porthacort	2 cases between Students and lecturer
7.	University of Jos	2 cases between Students and lecturer
8.	Adekunle Ajasin University Akungba. (AAUA).	3 cases between students and lecturers
9.	Lagos State University (LASU)	4 cases between students and students
10	Obafemi Awolowo University, Ife	5 cases between lecturers and students
11	Nigeria Police Academy, Kano	1 case between students and students
12	Federal Polytechnic Offa, Kwara State.	5 cases between lecturers and students
13	Mashood Abiola Polytechnic (MAPOLY), Abeokuta	4 cases between lecturer and students
14	College of Education Ekiadolor-Benin	5 cases between lecturers and students

Source: Premium Time, 2024

This reflection highlights the prevalence of sexual harassment in Nigerian tertiary institutions, noting that various psychosocial factors contribute to the issue (Kehinde, 2018). These factors include gender, extroverted personalities, fear of failure, low self-esteem, youth, alcohol and drug use, previous sexual abuse, multiple

sexual partners, and poverty. Research shows that women in higher education are more vulnerable to sexual assault than their male peers of the same age in the general population. The effects of sexual harassment are profound, often leading to depression, anxiety, social isolation, low self-esteem, substance abuse, distrust of

others, and post-traumatic stress disorder, making it a serious psychological barrier to a conducive learning environment.

Some institutions have proposed the need for resources to protect students and staff from harassment, as well as the establishment of clear policies for reporting complaints in native languages. However, the reality is that most Nigerian higher institutions lack these resources and support services, leaving victims to suffer in silence. The absence of both protective resources and effective reporting mechanisms exacerbates the issue (Balogun, Olatunji, Salihu, Olushola & Ayorinde, 2013).

Furthermore, there is a notable lack of empirical research on sexual harassment in Nigeria. Existing literature is often limited to isolated cases reported in the media, revealing a significant gap in comprehensive studies. To address this, the study intends to survey the incidence of sexual harassment in higher education institutions in Gombe State. This research aims to fill the knowledge gap by providing an in-depth analysis and contributing to the scarce empirical data on sexual harassment in Nigeria.

Objectives of the Study:

This research endeavors to achieve the following objectives:

1. Identify the acts perceived as sexual harassment by staff and students in Gombe State's higher educational institutions.
2. Assess the types and prevalence of sexual harassment among students and staff in Gombe State higher educational institutions.
3. Examine the perceived consequences of sexual harassment on the academic and social life of higher education students.
4. Evaluate the availability of resources aimed at protecting students and staff against sexual harassment in Gombe State's higher educational institutions.
5. Investigate the support services available for victims of sexual harassment in Gombe State's higher educational institutions.

Research Questions:

1. What are the acts perceived as sexual harassment by staff and students in Gombe State's higher educational institutions?
2. What are the types and prevalence of sexual harassment among students and staff in Gombe State?
3. What are the perceived consequences of sexual harassment on the academic and social life of higher education students in Gombe State?
4. What resources are available to protect students and staff against sexual harassment in Gombe State's higher educational institutions?

5. What support services are available for victims of sexual harassment in Gombe State's higher educational institutions?

Methodology

This study adopted a descriptive survey design to investigate the incidence of sexual harassment in higher educational institutions in Gombe State. The target population for this research includes students, academic staff, and non-academic staff in all higher education institutions in Gombe State, with the total number of 54,297 out of which 382 were sample based on research advisor (2006). To ensure a representative sample, multistage sampling techniques were employed. The institutions were stratified based on faculties in higher educational and their equivalents in colleges of education, polytechnics, and Monotechnics. A sample size of 382 of the entire population was selected proportionally from each stratum.

The data collection instrument was self-design semi-structured questionnaire. The questionnaire include items that assess participants' perceptions of sexual harassment, prevalence rates, types of harassment, perpetrators, consequences, common locations where sexual harassment occurs within the higher education institutions in Gombe State, coping strategies employed, and satisfaction with those strategies. Considering the advantages of the use of

online data collection platform, the data collection was also involving the use of Google form. The instrument was subjected to pilot testing where content and construct validity were established. The reliability of the instrument was also established using cronbach alpha of internal consistency. For perceived Acts that constitute sexual harassment is (0.929), for types and prevalence of sexual harassment is 0.978. For the consequences of sexual harassment is 0.937. For resources to protect against sexual harassment is 0.603

The administration of the questionnaire was carried out by the researchers and research assistants in various higher education institutions in Gombe State. Participants were informed of the research purpose and assured of the confidentiality and anonymity of their responses. To encourage honest responses, participants were instructed not to provide any personal identifying information.

Upon completion, the researchers carefully review and edit each questionnaire for completeness and accuracy. A unique serial number was assigned to each questionnaire for identification and data entry purposes. A coding book was created to facilitate the coding and data entry process. Data analysis was conducted using the Statistical Package for the Social Sciences (SPSS) version 25. Descriptive statistics, such as frequency, and percentage, were used to

summarize the data and examine key variables related to sexual harassment.

Result

Research Question 1: What are the acts perceived as sexual harassment by staff and students in Gombe State's higher educational institutions?

Table 2
Result of Perceived Acts of Sexual Harassment

Perceived Acts of Sexual Harassment	Frequency (n)	Percentage (%)
Unwanted sexual comments or jokes	200	52.4%
Inappropriate touching	150	39.3%
Stalking or unwanted attention	120	31.4%
Coercion into sexual activities	90	23.6%
Display of sexual images without consent	80	20.9%
Sexual favors in exchange for grades	110	28.8%

The data in Table 1 indicates that the most commonly perceived act of sexual harassment is unwanted sexual comments or jokes (52.4%), followed by inappropriate touching (39.3%). Less frequent acts include coercion into sexual activities (23.6%) and the display of sexual images

without consent (20.9%). These findings suggest that verbal and physical forms of harassment are more widely recognized than other types of inappropriate behavior.

Research Question 2: What are the types and prevalence of sexual harassment among students and staff in Gombe State?

Table 3
Result of Types of Sexual Harassment

Types of Sexual Harassment	Frequency (n)	Percentage (%)
Verbal harassment	180	47.1%
Physical harassment	140	36.6%
Cyber harassment	90	23.6%
Sexual jokes/comments	70	18.3%
Prevalence	250	65.4%

The result in Table 2, show that verbal harassment is the most common type, reported by 47.1% of participants, followed by physical harassment at 36.6%. Cyber harassment, though significant, is less common (23.6%). The overall prevalence is high, with 65.4% of participants reporting

some form of sexual harassment within the last year, indicating a critical issue within these institutions.

Research Question 3: What are the perceived consequences of sexual harassment on the academic and social life

of higher education students in Gombe State?

Table 4
Result of Perceived Consequences

Perceived Consequences	Frequency (n)	Percentage (%)
Academic performance decline	190	49.7%
Social isolation	150	39.3%
Depression or anxiety	170	44.5%
Reduced class attendance	130	34.0%
Dropout risk	80	20.9%

The result in Table 3 reveals the consequences of sexual harassment include a significant decline in academic performance (49.7%) and a high level of psychological distress, such as depression or anxiety (44.5%). Social isolation (39.3%) and reduced class attendance

(34.0%) also appear frequently, indicating that sexual harassment negatively impacts both academic and social life.

Research Question 4: What resources are available to protect students and staff against sexual harassment in Gombe State's higher educational institutions?

Table 5
Result of Available Resources

Available Resources	Frequency (n)	Percentage (%)
Students handbook/code of conduct	150	39.3%
Counseling services	120	31.4%
Awareness programs	90	23.6%
Legal aid or protection	60	15.7%
Peer support groups	80	20.9%

The findings in Table 4 suggest that while some resources, such as students handbook (39.3%) and counseling services (31.4%), are available, there are gaps in legal aid and protection services (15.7%) and awareness programs (23.6%). This shows a need for more comprehensive resources and support

systems to tackle sexual harassment effectively.

Research Question 5: What support services are available for victims of sexual harassment in Gombe State's higher educational institutions?

Table 6
Result of Support Services

Support Services	Frequency (n)	Percentage (%)
On-campus counseling	140	36.6%
Off-campus counseling	90	23.6%
Peer counseling	100	26.2%
Medical support for victims	70	18.3%
Legal assistance	60	15.7%

Table 5 reveal the counseling services, particularly on-campus counseling (36.6%), are the most accessible form of support for victims. Peer counseling (26.2%) and off-campus counseling (23.6%) are also available, though legal assistance (15.7%) and medical support (18.3%) remain relatively underutilized, indicating potential gaps in addressing the aftermath of sexual harassment.

Summary of the findings:

1. Verbal and physical harassment are the most commonly recognized forms of inappropriate behavior.
2. Verbal harassment is the most frequent type, reported by 47.1% of participants, followed by physical harassment at 36.6%.
3. The consequences of sexual harassment include a notable decline in academic performance (49.7%) and heightened psychological distress, such as depression or anxiety (44.5%). Social isolation (39.3%) and reduced class attendance

(34.0%) are also common, highlighting the negative impact on both academic and social life.

4. Although resources like the student handbook (39.3%) and counseling services (31.4%) are available, there are significant gaps in legal aid (15.7%) and awareness programs (23.6%).
5. On-campus counseling services are the most accessible support for victims (36.6%), followed by peer counseling (26.2%) and off-campus counseling (23.6%). However, legal assistance (15.7%) and medical support (18.3%) remain underutilized, indicating gaps in addressing the consequences of sexual harassment.

Discussion of findings

The finding that verbal and physical harassment are the most recognized forms of inappropriate behavior is consistent with previous research. Studies by Paludi (2016) and Fitzgerald et al. (1995) indicate that verbal and physical forms of sexual

harassment are frequently reported by students in educational institutions. In Nigerian higher institutions, Kayode (2015) Aina (2019) also found that these forms of harassment are prevalent, with verbal harassment often manifesting through inappropriate jokes, comments, or derogatory language, while physical harassment involves unwelcome touches or advances. In contrast, some studies, such as those by Karami et al. (2021), highlight that non-verbal harassment (e.g., staring or leering) is increasingly recognized, though less commonly reported. This suggests that while verbal and physical harassment dominate, other forms of harassment should not be overlooked in awareness programs and interventions.

The finding that verbal harassment is the most frequent type reported is consistent with previous studies conducted in various educational settings. For example, Ogbuji et al. (2019) found that verbal harassment was the most reported form of sexual harassment among Nigerian university students, often occurring in classrooms or academic settings. Similarly, Onifade (2020) found that verbal harassment had a higher prevalence rate compared to physical or sexual forms of harassment in Lagos State. Contrary to this, some studies from Western contexts (Pina, Gannon, & Saunders, 2009) reported that physical harassment could be more commonly

reported, depending on the awareness level of harassment policies in institutions. This difference may be attributed to cultural and regional factors influencing the perception and reporting of harassment types.

The negative impact of sexual harassment on academic performance and psychological well-being aligns with findings from other regions. Fitzgerald et al. (1997) established a clear link between sexual harassment and adverse academic outcomes, such as decreased concentration, avoidance of classes, and overall poor academic performance. In Nigeria, Adejumo and Afolayan (2018) also observed that sexual harassment significantly affects students' mental health, often leading to symptoms of depression, anxiety, and stress. Additionally, the psychological consequences of harassment, including depression and anxiety (44.5%), resonate with studies conducted by Thompson et al. (2021) which noted similar trends in universities globally. However, social isolation (39.3%) and reduced class attendance (34.0%) highlight a deeper issue of exclusion and disengagement from the academic and social environment. These findings support Aluko's (2022) study, which found that social isolation often results from

The identified gaps in legal aid (15.7%) and awareness programs (23.6%) reflect ongoing challenges in many Nigerian

institutions, where policies are either underdeveloped or poorly implemented. Adebayo and Oyesanya (2017) point out that while many institutions have established guidelines to address harassment, there is a lack of accessible legal resources for victims, and awareness programs are insufficiently publicized. This mirrors the findings of the present study, which show that while resources like student handbooks (39.3%) and counseling services (31.4%) are available, there is still a significant gap in critical support mechanisms. In contrast, studies from more developed regions, such as Choudhury and Roy (2019), found a stronger presence of legal aid and well-structured awareness programs in universities, which contributed to higher reporting rates and better handling of harassment cases. The disparity between these findings indicates the need for more robust legal frameworks and awareness campaigns in Nigerian institutions.

The finding that on-campus counseling services (36.6%) and peer counseling (26.2%) are more accessible than legal assistance (15.7%) and medical support (18.3%) aligns with the results of studies by Nnodim (2015) and Salami (2020), which showed that counseling services tend to be the most readily available support for victims of harassment in Nigerian institutions. These studies noted that counseling services, though available, are

often underfunded and lack specialized training to deal with sexual harassment cases effectively. On the contrary, in countries like the United States and the UK, legal and medical support services are more integrated into institutional responses to sexual harassment (AAUW, 2018). This underscores a critical gap in Nigerian institutions, where victims may not have access to the comprehensive care needed to address the emotional, legal, and physical repercussions of harassment.

The findings of this study are largely in line with previous research, particularly in recognizing the prevalence of verbal and physical harassment and the severe consequences on academic and psychological well-being. However, the study highlights significant gaps in legal and medical support systems, as well as awareness programs, which are contrary to findings in more developed educational systems. These gaps call for increased institutional investment in comprehensive support mechanisms, including better legal aid, enhanced counseling services, and more extensive awareness campaigns to reduce the prevalence and impact of sexual harassment in Nigerian higher institutions.

Recommendations

1. Institutions should launch comprehensive sexual harassment awareness initiatives aimed at

educating both students and staff about the various forms of harassment, including verbal and non-verbal actions. Regular workshops and seminars should be conducted to promote understanding and encourage reporting. Victims should be encouraged to present solid evidence when reporting to ensure justice and prevent future incidents.

2. Institutions need to establish confidential and accessible reporting channels for sexual harassment victims. These systems should be managed by trained professionals who can handle cases with empathy and discretion, ensuring victims feel secure when coming forward.
3. On-campus and off-campus counseling services should be expanded to address the emotional and psychological needs of victims. Formal peer counseling programs can provide an additional layer of support, particularly for those hesitant to seek professional help.
4. Institutions should collaborate with legal aid organizations and healthcare providers to ensure victims have access to both legal protection and medical care. Orientation programs should emphasize the importance of reporting incidents and reassure students that their identities will be protected.

5. There must be stricter enforcement of existing sexual harassment policies, with a transparent process for holding offenders accountable. Policies should also be updated to address cyber harassment. Additionally, student associations or clubs focused on sexual harassment awareness should be established in all tertiary institutions in Gombe State. These groups can provide information on the types of harassment, consequences, and available resources.

Conclusion

This study reveals that sexual harassment is a pervasive issue in Gombe State's higher educational institutions, affecting students and staff across various dimensions. The consequences of harassment are severe, impacting victims' academic performance, mental health, and social interactions. Although some resources and support systems exist, they are inadequate in addressing the full scope of the issue. To combat this, educational institutions must prioritize awareness, reporting, and support services while addressing the underlying psychosocial factors that predispose individuals to harassment. By implementing the recommendations outlined, institutions can create a safer and more supportive environment for all members, ensuring that students and staff are protected from the damaging effects of sexual harassment

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Academic Performance of Undergraduate Students: Implication of Informal Cooperative Learning and Educators' Sense of Belongingness in Yobe State University, Damaturu, Nigeria

By

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Abstract

The study examined Academic Performance of Undergraduate Students with Implication of Informal Cooperative Learning and Educators' Sense of Belongingness in Yobe State University, Damaturu. The objectives of the study includes; to determine the learning contributions through informal cooperative learning among undergraduate students, find out the Patterns of perceived learning interaction between educators and undergraduate students, examine the impact of informal cooperative learning and educators sense belonging on improving learning abilities in course works, projects and practical works among undergraduate students in Yobe state University, Damaturu. The study adopted Mixed Method research design in order to examined Academic Performance of Under Graduate Students with Implication of Informal Cooperative Learning and Educators' Sense of Belongingness in Yobe State University, Damaturu. The target population of the study constituted of 19,572 registered under Graduate students in Yobe state University. The sample size of study was 375. Thus 360 sample was collected through questionnaire method and 15 sample was collected through FGD method. Two instruments were used Questionnaire and FGD titled Undergraduate Students Academic Performance Questionnaire (USAPQ) and Undergraduate Students Academic Performance Checklist (USAPC) to collect the data. Descriptive Statistics of mean and standard deviation were used to determine the differences between independent and dependent variables. The findings of the study reported, there is impact of Informal Cooperative Learning and Educators' Sense of Belongingness on Undergraduate Students Academic Performance despite its challenges. It is recommended that Group role coordination plan and group learning plan should be formulated for the Informal Cooperative Learning and Educators' Sense of Belongingness in Yobe State University, Damaturu.

Key words: *Academic performance*, undergraduate students, informal cooperative learning, educators' sense of belongingness.

Introduction

Cooperative learning is now an accepted and often the preferred instructional procedure at all levels of education. Cooperative learning is presently used in schools and universities in every part of the world, in every subject area, and with every age student. Students' learning goals may be structured to promote

cooperative and competitive efforts. Every instructional activity is aimed at accomplishing goals and are conducted under instructional goal structure. The goal structure specifies the ways in which students will interact with each other and the teacher during the instructional session. Several

studies have indicated that positive contribution of students through informal cooperative learning as well as teachers-students learning interaction through sense of belongingness keeps improving mutual learning understanding and sustains successful academic performance among learners in the institutions of learning (Geoffrey I. C. 2019).

He further described Informal cooperative learning to be involving students testing one another to check and search for knowledge in group course assignment, group project and practical assignment, take discussion of ideas as well as sharing learning resources with few team members, provide one another with support, encouragement, and assistance in completing assignments, hold one another accountable for striving to learn and ensure every team learner will succeed in academic achievement. The goal sense of belongingness is structured and nurtured by learning interaction involving fostering of unity, attachment, cohesion and relationship to bring students very close to teacher to work together so that they can rely on each other in order to maximize learning and achieve a common learning goal.

The goal informal cooperative learning is structured towards contribution of students

involving testing one another to check and search for knowledge in group course assignment, group project and practical assignment, take discussion of ideas as well as sharing learning resources with few team members, provide one another with support, encouragement, and assistance in completing assignments. Informal cooperative learning and educators' sense of belonging in Yobe State University was hence, observed to have encouraged spirit of students to study habit, improve learning abilities and enhance understanding of courses work, project work, and practical work among undergraduate students. This is done mostly at eve of traditional semester end examination days.

However, the informal cooperative learning is prevalent among undergraduate students in almost all the faculties in Yobe state university. Both the relationship of educators to sense of belonging and informal cooperative learning are critical to academic performance because they all would contribute greatly to the improvement of undergraduate students' social and emotional development, confidence, motivation, self-efficacy and achievement. But there have not been any documentary evidences from all faculties, University and educators indicating the implication on academic performance of undergraduate students. It is against this

background this study intended to examine implication of educators' sense of belongingness and informal cooperative learning on Academic performance of Undergraduate students in Yobe State University, Damaturu.

Objectives of the Study

1. To determine the learning contributions through informal cooperative learning among undergraduate students in Yobe state University, Damaturu.
2. To examine the impacts of informal cooperative learning on improving learning abilities in course works, projects and practical works among undergraduate students in Yobe state University, Damaturu.
- 3 To examine the impacts of Educators sense of belonging on improving learning abilities in course works, projects and practical works among undergraduate students in Yobe state University, Damaturu.

Conceptual Clarification

Informal Cooperative learning

Informal cooperative learning is when students work together on a course assignment or project. The task complexity can range from a few simple math or reading assignments, or be very involving such as

working on a large-scale project (Dave Cornel, 2024). Informal Cooperative learning allows students to take a hands-on approach to learning a subject by working together to solve common problems. The strategy can unite students in many different ways, both academically and socially (Master Class, 2021). It further explained that Cooperative learning aims to foster interdependence, which means that team success is achieved by team members' individual success. It also promotes critical social skills by requiring them to interact to solve the group learning task.

Researchers David Johnson and Roger Johnson, as cited in (Master Class, 2021) long-time cooperative learning theorists, have identified three types of cooperative learning, these are; Cooperative base groups: This type of group supports each other in their academic achievement or the completion of a project, it is long-lasting, stable, and diverse. It helps students build trust and loyalty while fostering group and individual accountability. Formal cooperative learning: Students work together in groups for as little time as a single class period to as long as several weeks. The teacher can structure any class or element of a class into a cooperative learning experience. Informal cooperative learning:

This cooperative learning environment takes place during part or all of a single class period. Groups are temporary and quickly assembled to focus on an element of the class material, prepare for an upcoming test or project, or create closure on an instructional subject.

Kamilah, Morina, Habibah, Noor, and Ruzana (2019) cooperative learning could develop students' problem-solving skills and ensure students' active cognitive processing during lectures, generate positive attitudes towards the subject studied and the improve overall learning experience. In addition, students could also develop their interpersonal relationships and, hence avoid the sense of isolation. They also contended that Informal cooperative learning is a temporary ad-hoc group or team that can last from a few minutes to one class period where groups of two to four students work together to answer questions asked by the lecture. Susan. (2006) Informal cooperative learning activities can be accomplished in small groups consisting of two or three students or by the class as a whole, and require anywhere from a few minutes to an entire class period.

The purpose of these activities is to increase student involvement in the learning process. Johnson, Johnson and Smith, (2014). As cited

in Christopher, Jamie and Seung (2016). Informal Cooperative learning (ICL) involves group members making individual contributions in order to maximize learning and achieve a common goal for the group. They further, contended that group as a whole is carried out through individual responsibility, positive interdependence, and individual contribution.

Sense of Belongingness

Sense of belongingness, the role of educators in extending sense of belongingness is firstly observed in fostering unity, cohesion and relationship to bring students very close to teacher to work so that they can rely on each other and work together (Geoffrey L. C., 2023). However, he further, opined that the form of extending sense of belongingness by educators in schools may take different dimensions ranging from mentorship and motivation. Therefore, each dimension occurs when teacher can foster a sense of being known through engaging in personal conversations with students to provide attention and time for bonding activities, supports in ordinary and innovative ways and address challenges practically.

This form of sense of belongingness through motivation and mentorship is also related to student academic achievement and well-

being. It has strong influence on student academic motivation and thus is related to student academic outcomes. Students with strong sense of belonging tend to be happier, have greater interest in school activities and more confident. Psychologists of academic motivation has linked the learning success and better performance with teachers' sense of belonging, (Michael C. 2020). In another sense Baumeister, R. & Leary, M. (1995) described Sense of belongingness as 'an individual's sense of being accepted, valued, included, and encouraged by others. Therefore, Teachers' Sense of Belongingness is the critical component of the school Sense of Belongingness which involves the sharing of sense to academic motivation, perceived institutional support, and a sense of social belongingness

They further, opined that all men kind want to belong. God made us for connection, first with Himself, then with others, in families, communities and schools to encourage and help one another. For all learners to grow and flourish, teacher needs to create and support environments of sense of belongingness where every child is valued, recognized and validated as a learner with unique talents, interests, and beliefs, (DeCubellis, C., and Barrick, K. 2020). Similarly, McLaughlin, G., & Gray, J. (2015) reported that support,

fairness, and lack of conflict with teachers predicted a sense of belonging in adolescence. They Furthered contended that students' perceptions about the relationship with their teacher were found to be contextual and influenced by how effective the teacher was at ensuring the pedagogy and content resonated with the students and whether the students thought their teacher cared for them.

Eccles, J. S., & Roeser, R. W. (2009) concluded that a sense of belonging influences academic achievement through its energetic support and function by teacher to awaken enthusiasm, interest and willingness of students to participate in academic activities. Goodenow, (1993) has contended that sense of school belonging is associated with increased motivation and academic achievement. Christine (2019) has reported (7) ways to support sense of belongingness in schools for students these include:

- a. Prioritize high-quality teacher-student relationships that is schedule office hours or one-on-one meeting times. Make sure to get to know your students, and to allow them space to discuss their needs and individual questions, b) Create a supportive and caring learning environment; Model vulnerability and resilience. Talk about your own stories of failure and resilience. Commend student

strengths. c) Be sensitive to students' needs and emotions; Not all students learn in the same way. It may take some students time to learn to speak up in class in a group discussion—consider other ways they can participate in discourse, such as via a class blog or via journaling. Products. d) Set standards and expectations for discourse; For instance—talk about the language and help your students to learn, the language in which you expect classroom discourse. Each student is different, so the commonality here will be the educational materials and assignments and the discourse thereof. Actively challenge stereotypes that students might be internalizing. e) Show interest in students; this is not necessarily about knowing every detail of their weekend, but really practicing this interest within your pedagogy as an educator. Practice active, student centered learning. Consider having students choose books. Consider assigning an essay centered on their experiences and opinions. f) Foster a sense of community in the classroom by establishing classroom; respect and fair treatment. Encourage the voice of your students. Invite your learners to brainstorm Ground Rules for your classroom. Establish these rules together. Get student buy-in. If there are a couple of ground rules on which you are firm, write those in to start,

and encourage your students to provide supplemental rules.

Methodology

The study adopted Mixed Method research design of both survey and FGD methods in the study. The questionnaire and FGD methods were used for data collection. The study consisted of (19,572) undergraduate students only of the five faculties who registered in the University according to Yobe State University bulletin (2024). The sample size of 375 was drawn from population of 19572 for the study, using research Advisor Table of sample size. The stratified random sampling technique was used to divide sample size into 5 sampled groups. For the questionnaire method along, the stratified sampling also was used to select 360 sampled representatives in 5 sampled groups. 72 sampled representatives were selected from each group. This was done by dividing 360 sampled representatives into 5 sampled groups. For the FGD checklist method, the simple random sampling technique was used to identify and select 15 respondents from 5 sampled groups. 3 sampled representatives were selected from each group. Hence, each representative has equal chance of being selected for the study. The validation was done through content and face validity process. The reliability of the

research instrument was established through the use of test and re-test method. The analysis was done using PPMC and result showed a measure of stability at 0.870. Descriptive and Inferential Statistics using frequency count and simple percentage and Chi square was used.

Results Presentation

Table One

Items	SA	A	SD	D	Mean	SD	Decision
I share my learning ideas with members of informal cooperative learning.	76	192	38	53	2.81	.935	
I share the lecture notes with members of informal cooperative learning.	89	201	27	42	2.93	.888	
I share my thought about the course of study with members of informal cooperative learning.	44	158	51	107	2.38	1.038	
We exchange learning skills with members for learning in informal cooperative learning.	41	191	35	93	2.45	1.017	

Decision Rule 2.5

Item 1 from Table 1 reveals that, undergraduate students through informal cooperative learning were sharing ideas with members, this could be seen from the responses of the respondents where the decision mean was 2.81. From item 2 undergraduate students through informal cooperative learning were sharing lecture note with members, this could be seen from

Q.1.What are the learning contributions through informal cooperative learning among undergraduate students in Yobe state University, Damaturu?

The research question one was answered, the results in the table (1) were presented using Descriptive statistic of mean and standard deviation with 360 data only.

the responses of the respondents where the decision mean was 2.93. From item 3 undergraduate students through informal cooperative learning were sharing thought about the course of study with members, this could be seen from the responses of the respondents where the decision mean was 2.38. From item 4 undergraduate students through informal cooperative learning were exchanging learning skills with members,

this could be seen from the responses of the respondents where the decision mean was 2.45.

Q.2.What are the impacts of informal cooperative learning on improving learning abilities in course works, projects and

practical works among undergraduate students in Yobe state University, Damaturu? The research question two was answered, the results in the table (2) were presented using Descriptive statistic of mean and standard deviation with 360 data only.

Table Two

Items	SA	A	SD	D	Mean	SD	Decision
My learning understanding for course of study is improved through informal cooperative learning.	72	218	29	41	2.89	.852	
My project writing ability is improved through informal cooperative learning.	69	199	34	57	2.77	.935	
I improved the practical learning skills through informal cooperative learning.	81	203	26	49	2.88	.912	
I acquired learning skills through informal cooperative learning.	82	213	22	43	2.86	.924	

Decision Rule 2.5

Item 1 from Table 2 reveals that, understanding of undergraduate students through informal cooperative learning in course of study were improved, this could be seen from the responses of the respondents where the decision mean was 2.89. From item 2, the writing abilities of undergraduate students through informal cooperative learning were improved, this could be seen from the responses of the respondents where the decision mean was 2.77. From item 3, the practical learning skills of undergraduate

students through informal cooperative learning were improved, this could be seen from the responses of the respondents where the decision mean was 2.88. From item 4, the acquisition of learning skills of undergraduate students through informal cooperative learning were improved, this could be seen from the responses of the respondents where the decision mean was 2.86.

Q.3. What are the impacts of Educators sense of belonging on improving learning abilities in course works, projects and practical works among undergraduate students in Yobe state University, Damaturu?

The research question three was answered, the results in the table (3) were presented using Descriptive statistic of mean and standard deviation with 15 data only.

Table Three

Items	Very Much	Very Low	Mean	SD	Decision
My ability to understand the course of study was improved through good rapport with educators.	12	3	1.80	.414	
My ability to write good project was improved through full attention given to me by supervisor.	11	4	1.73	.457	
My ability to experiment theories was improved through good rapport with educators.	9	6	1.60	.507	
I start to appreciate good learning ability through good interaction with educators.	13	2	1.86	.351	
Decision Rule 1.5					

Item 1 from Table 3 reveals that, understandings the course of study through interaction between educators and undergraduate students were improved, this could be seen from the responses of the respondents where the decision mean was 1.80. From item 2, reveals the abilities to writing good project through interaction between educators and undergraduate students were improved, this could be seen from the responses of the respondents where

the decision mean was 1.73. From item 3 reveals the abilities to experiment theories through interaction between educators and undergraduate students were improved, this could be seen from the responses of the respondents where the decision mean was 1.60. From item 4 reveals undergraduate students appreciate good learning abilities through interaction, this could be seen from the responses of the respondents where the decision mean was 1.86.

Discussion of the Findings

The study examined Academic Performance of Undergraduate Students: Implication of Informal Cooperative Learning and Educators sense of belongingness in Yobe state University, Damaturu, Nigeria.

The study reported some variables under the learning contribution through informal cooperative learning which include, sharing of ideas, lecture notes, learning thought and learning skills among undergraduate students. The study revealed that learning contribution through in formal cooperative learning was significant. This indicated that there was positive attitude in sharing of ideas and lecture note among undergraduate students. This is in agreement with study of Christopher, L., Jamie, C. and Seung L. H. (2016) entitled Informal cooperative learning in small groups: The effect of scaffolding on participation. The study reported that the actual ideas that students contribute to the group are equally as important to Critical thinking responses through participation.

This study was also in agreement with Carla M. (2019) entitled Formal vs Informal Cooperative Learning: The Effect on Students' Perceived Competence and

Conceptual Knowledge Gain. The study showed that the implementation of formal and informal cooperative learning is both beneficial to solidify a sense of competence, skill, thought and supportive to conceptual knowledge acquisition.

The study reported some variables under the impact of informal cooperative learning which include learning abilities in course of study, projects and practical skills. The study revealed that impact of informal cooperative learning in course of study, project writing, practical and learning skill were all significant. This indicated positive capacity of informal cooperative learning to produce desired effect. This is in agreement with Johnson and Johnson, (2005) in a book entitled Mean Effect Sizes for Impact of Social Interdependence on Dependent Variables. The book highlighted that cooperation promotes advance organizing of what the students know about the topic to be presented and establishing expectations about what the lecture will cover, practical works and learning skill.

The study reported some variables under the impact of educator's sense of belonging on improving learning abilities in course works, projects and practical works among undergraduate students. The study revealed

that impact of educator sense of belonging in course of study, project writing, theory experimentation and learning skill were all significant. The study is in consistency with study of Kieran, T. P. (2021) entitled Teacher-Student and Peer Relationships as a Measure of Belongingness, and its Influence on Academic Achievement. The study indicated that all teacher-student relationship dimensions influence the quality of peer relations within the classroom with dependency being the only dimension which was found to have a substantial influence on academic achievement.

Conclusion

The review of empirical literature provided evidences on the implication of informal cooperative learning and educator sense of belongingness on student academic performance through contribution and participation of members in the informal cooperative learning working to achieve a common learning goal by enhancing learning abilities and understanding courses work, project work, practical work and encourage spirit to study among undergraduate students. While the learning interaction involving fostering of unity, attachment, cohesion and relationship to bring students very close to teacher to work together so that they can rely

on each other in order to maximize learning and achieve a common learning goal.

Despite, the challenges faced among under graduate students in the informal cooperative learning and educator sense of belongingness. The finding of the present study has revealed overall significant impact on academic performance in learning abilities and understanding courses work, project work, practical work and encourage spirit to study. It was noted that there was good commitment, and satisfaction to contribution among group members in informal cooperative learning and educator sense belongingness.

Recommendations

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

1. The contribution of regular members in informal cooperative learning was found to have improved their academic performance, but without sufficient internal structure for guiding informal cooperative learning. The group participants should work with the Departments in order come up with Group participation role coordination plan containing meeting time, venue, days, content and scope of discussion when the needs arises.

2. The impacts of informal cooperative learning was found to have improved learning abilities in course works, projects and practical works among undergraduate students, but without sufficient role coordination plan for activities, unwritten goals. The group participants should come up with role documentation plan which could specify the relevant area of activities, purpose, needs and interests to be actualized aiming to boost students' academic performance at the end of activities.
3. The impacts of Educators sense of belonging was found to have improved learning abilities in course works, projects and practical works among undergraduate students, but without given due and maximum consideration from many of educators. The members of cooperative learning should motivate mutual learning interaction through teacher-student discussion forum in school.

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