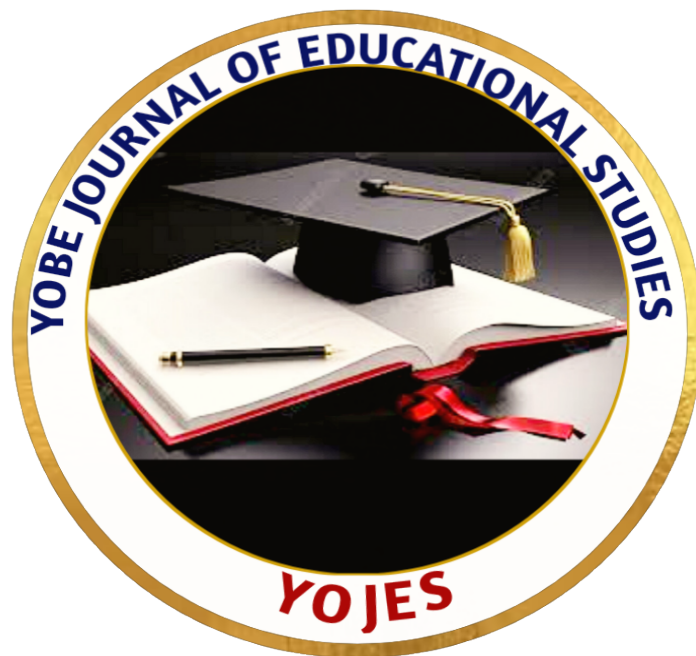


# **YOBE JOURNAL OF EDUCATIONAL STUDIES (YOJES)**

**Volume 2 number 1 February, 2025**

**ISSN: 1595-5338**



**A PUBLICATION OF THE FACULTY OF EDUCATION, YOBE STATE UNIVERSITY, DAMATURU**

@ YOBE JOURNAL OF EDUCATIONAL STUDIES (YOJES)

February, 2025

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ISSN No.: 1595-5338

Printed and published by  
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5. References should be current APA Style
6. Manuscript must be original not published or accepted by another journal
7. No paper should exceed 15 pages including references
8. Manuscript/Article can be submitted for vetting electronically via yobejournalofeducation11@gmail.com

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**EFFECTS OF COLLABORATIVE INSTRUCTIONAL STRATEGY ON SENIOR  
SECONDARY STUDENTS' PERFORMANCE AND RETENTION IN GENETICS IN  
GOMBE METROPOLIS, GOMBE STATE, NIGERIA**

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**ABSTRACT**

*This study investigated the Effects of Collaborative Instructional Strategy on Senior Secondary Students' Performance and Retention in Genetics in Gombe Metropolis, Gombe State. Descriptive statistics of mean and standard deviation were used for answering the research questions while Analysis of Covariance (ANCOVA) was used to test the null hypotheses at 0.05 level of significance. The statistical package for social sciences (SPSS) of version 26.0 was used to analyze the data. Quasi-experimental research design of a non-randomized and non-equivalent pre-test, post-test was adopted for the study. The population for the study comprised eighteen (18) public secondary schools located in Gombe Local Government Area of Gombe State, totaling 8,916 students. A simple random sampling technique was used to sample 98 students from the population who were randomly assigned into two intact classes of experimental group and control group respectively. The Genetics Performance Test (GPT) and Genetics Retention Test (GRT) were used for collecting data for the study. The instruments were validated by experts and had a reliability coefficient of 0.85 and 0.76 respectively. Two research questions guided the study and two hypotheses were tested at 0.05 level of significance. The study revealed that there was a significant difference in the mean performance scores [ $F(1, 95) = 162.407, p = 0.000 < 0.05$ ] and retention scores [ $F(1, 95) = 8.976, p = 0.003 < 0.05$ ] between the students taught genetics using collaborative instructional strategy and those taught using conventional method in favour of the experimental group. Given the findings of the study, it was recommended among others that collaborative instructional strategy should be used for the teaching and learning of genetics, since it enhances students' performance and retention in genetics.*

*Key words: Effects, Collaborative Teaching Strategy, Performance, Retention, and Genetics.*

## **Introduction**

Science is a great enterprise; which nations depend on to advance technologically. Science therefore is receiving much emphasis in education because of its significance and relevance to life and society. Science can be defined as the study of the environment through which people can develop both the mind of inquiry, discipline, and logical power of thought. Science includes subjects like biology, chemistry, and physics. Science, as a dynamic human activity, is concerned with understanding the world. According to him, science is more concerned with various investigative processes and activities about developing, acquiring and controlling knowledge, skills, capabilities and attitudes about the natural factors of the environment.

Genetics is the branch of biology that studies the process or mechanism of heredity. It focuses on establishing the scientific basis for understanding how characteristics or traits are being transferred from parents to their offspring from one generation to another. In genetics, students learn certain aspects of gene and their mode of transmission from generation to generation. Such knowledge helps students understand problems of a genetic nature rather than relying on superstition and other mystical explanations (Ishaku, 2015). Students also learn accurate scientific ways of explaining the genetic defects that may be found in their families and communities. Despite the numerous applications of genetics in particular and biology in general to all areas of human endeavors, it is unpleasant academically to note that students' performance at the school certificate level in Nigerian secondary schools is progressively decreasing.

Besides, biology is a science subject mostly preferred by students, perhaps because it has fewer mathematical calculations. As a result of this, Aniaku (2012) noted that there is high enrolment in Biology during external examinations. Regardless of the high number of students enrolled in biology in Senior Secondary School Examinations, there was poor performance in biology with particular reference to genetics questions (WAEC, 2024). The poor performance of the candidates in the subject was attributed to the following weaknesses which were recurrent: Candidates showing poor understanding of the demands of the questions; Poor understanding of certain genetic terms e.g. pure-breeding, nucleotide, hybrid, dominant and recessive characters; Poor performance in questions in genetics and drawing of poor genetic diagrams. Several factors have been advanced as affecting students' performance and retention in Biology, these include the students' factors, teachers' factors, societal factors, governmental infrastructural problems,

the language of instructions, and instructional strategies employed by the teachers and recently students' learning differences. This situation is easily attributed to factors such as teachers' teaching methods, inadequate qualified biology teachers, lack of instructional materials, and non-availability of laboratory facilities. Other factors such as wrong spelling of technical terms, wrong representation of view, poor drawing, inability to identify some illustrated organisms, inability to write brief and precise answers, and poor grasp of the subject matter lead to failure of students in practical biology.

Moreover, instructional strategies in biology refer to the various methods, techniques, and approaches used by teachers to facilitate the teaching and learning of chemistry concepts and skills. These strategies aim to engage students, promote understanding, and enhance their overall performance in biology. Instructional strategies play a significant role in teaching and learning, potentially having the greatest cumulative effect on students' performance and retention in biology. Various teaching methods, such as lecture, discovery, concept mapping, demonstration, discussion, think/pair/share, scaffolding, and problem-solving, have been employed in chemistry education. However, various research findings have linked the cause of students' difficulty in genetics to the quality of instructional strategies used during biology instruction. The choice of instructional method is crucial, as it can significantly impact students' performance and retention. The choice of appropriate instructional strategies can foster student interest, positive attitudes towards learning, higher-order thinking and reasoning skills, and improve performance and retention. The Ministry of Education in Nigeria encourages activity-based instructional strategies such as collaboration, discovery, inquiry, scaffolding, and problem-solving for teaching biology. While no single instructional strategy has been proven sufficient to improve students' performance and retention comprehensively, one effective approach is for teachers to bridge unfamiliar concepts with students' existing knowledge, which can be achieved through the Spider concept mapping strategy.

In Nigeria for example, Teachers are familiar with the use of some teaching methods but more especially the conventional methods like lecture, discussion, and demonstration methods. Many researchers have reported that the dominant instructional strategy for teaching biology in Nigerian institutions is the conventional method. The conventional method is effective for large

classes, facilitating easy syllabus coverage, saving time, and exposing students to broader knowledge, which encourages them to work harder.

However, despite its advantages, the conventional method has notable disadvantages. The Conventional method promotes rote memorization, preventing learners from fully internalizing the information, which is particularly problematic for a practical subject like biology. Therefore, it should be discouraged in biology education. Research reports have shown that most teachers prefer the use of traditional teaching methods in teaching secondary school biology. This invariably leads to poor performance in biology. Meanwhile, the traditional methods of teaching usually adopted by biology teachers include; Lecture and Expository methods among others. These methods put stress on the transmission of knowledge in a manner that emphasizes memorization. When these methods are used, teaching is unidirectional hence; students become passive and unable to construct meaningful knowledge in the teaching/learning of biology. Several researchers such as (Ozioko, 2015) have recommended that traditional methods of teaching should be substituted by more innovative ones. To overcome these problems, there is a need to strive for a balance of effective teaching strategies by making use of innovative teaching methods such as cooperative learning, Discovery, and simulation methods of instruction.

The innovative teaching methods are activity-based and are characterized by students sharing some degree of responsibility for making decisions in the teaching/learning process. In innovative teaching methods, the teacher is often described as a partner and a facilitator in the teaching and learning process. Among these innovative teaching methods is the collaborative instructional strategy. In recent years, studies involving cooperative learning, as proven to be student-centered approach which emerged as an important area of education research.

Collaborative learning is the use of small instructional groups so that students work together to maximize their own and each other's learning. It is described as a strategy in which students work together in small mixed integrated groups and help each other for a common academic aim, to develop communication abilities, to increase problem-solving, increase critical thinking abilities, and take an active part in their learning process. Hence, this strategy employs a variety of learning activities to improve students' understanding of a subject matter by using a structured approach, which involves a series of steps, requiring students to not only study, memorize, or analyze present knowledge but also create, analyze, and apply concepts. This leads to positive

outcomes such as higher performance, more positive attitudes toward the subject, higher self-esteem, greater acceptance of differences among peers, greater persistence and retention, additionally, a greater understanding of the material is obtained (Elpisah, Devila, & Hartini, 2019). This form of learning ensures the right integration of peers with one another, promoting team spirit and togetherness for collective good retention abilities and performance of students in Biology in secondary schools.

From the foregoing, there is a need to investigate the effects of collaborative instructional strategy on senior secondary two students' performance and retention in genetics in Gombe metropolis, Gombe State, Nigeria.

### **Statement of the Problem**

Biology generally, is a science subject that is often preferred by students, possibly because it involves fewer mathematical calculations. As a result, Aniaku (2012) noted a high enrollment in Biology for external examinations. However, Opara (2011) observed that despite the high number of students enrolled in Biology for Senior Secondary School Examinations, their performance remained poor, especially when attempting genetics questions (WAEC, 2024). The poor performance of candidates in the subject has been attributed to several recurrent weaknesses: candidates' poor understanding of the demands of the questions, poor comprehension of certain genetic terms (e.g., DNA, RNA, genes, alleles, pure-breeding, nucleotide, hybrid, dominant, and recessive characters), and crossing of gametes during drawing in genetics. The poor performance and retention of students in biology have serious implications for Nigeria's economy, security, and manpower development. The questions before, is to what extent could; the effects of collaborative instructional strategy improved students performance and retention in genetics in senior secondary schools in Gombe metropolis, Gombe State, Nigeria.

### **Objectives of the Study**

The objective of this study is to investigate the Effects of Collaborative Instructional Strategy on Senior Secondary Students' performance and Retention in Genetics in Gombe Metroplis, Gombe State. Specifically, this study seeks to:

1. Determine the difference in the mean performance scores of students taught genetics using Collaborative instructional strategy and those taught using conventional teaching method in Gombe metropolis.
2. Determine the difference in the mean retention scores of students taught genetics using Collaborative instructional strategy and those taught using conventional teaching method in Gombe Metropolis.

### **Research Questions**

The following research questions were formulated to guide this study.

1. What is the difference in the mean performance scores of students taught genetics using collaborative instructional strategy and those taught using conventional teaching method in Gombe Metropolis?
2. What is the difference in the mean retention scores of students taught genetics using collaborative instructional strategy and those taught using conventional teaching method in Gombe Metropolis?

### **Research Hypotheses**

The following hypotheses were tested at 0.05 levels of significance.

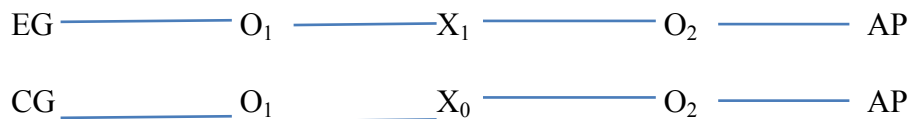
1. There is no significant difference in the mean performance scores of students taught genetics using collaborative instructional strategy and those taught using conventional teaching method in Gombe Metropolis.
2. There is no significant difference in the mean retention scores of students taught genetics using collaborative instructional strategy and those taught using conventional teaching method in Gombe Metropolis.

### **Methodology**

The study adopted a non-equivalent, quasi-experimental research design, specifically a non-randomized pre-test/post-test design with experimental and control groups. This design was selected because random assignment of students to groups was not feasible within the normal school schedule. As such, groups were formed based on existing class structures, ensuring that all students in selected classes could participate. Two instruments were used for data collection in this study, namely Genetics Performance Test (GPT) and Genetics Retention Test (GRT). The

instruments were adapted from past WAEC & NECO 2015-2024) questions, while the Genetics retention Test was developed by the researchers and validated by experts.

The research design is symbolically represented as follows:



In this representation,  $O_1$  refers to the pre-test,  $O_2$  refers to the post-test,  $X_1$  indicates the implementation of the collaborative strategy, and  $X_0$  refers to the conventional method.

### Participants

The study involved senior secondary school students from selected schools in Gombe Metropolis, Nigeria. A pre-test was administered to both the experimental group (EG) and the control group (CG) to evaluate their knowledge of genetics concepts and ensure homogeneity at the entry level. The pre-test consisted of items related to the Genetics concept, with the goal of assessing baseline understanding.

### Experimental and Control Groups

The participants were divided into two groups: the experimental group, which received instruction using the collaborative instructional strategy, and the control group, which was instructed using conventional lecture-based methods. This division allows for the comparison of academic performance and retention in genetics between the two instructional approaches.

### Pre-Test Administration

The pre-test consisted of multiple-choice and open-ended questions focused on foundational principles and specific aspects of genetics. The results were used to confirm that the experimental and control groups were homogeneous in terms of prior knowledge.

### Data Analysis and Results

Post-test data were collected using the same instrument that was utilized for the pre-test, ensuring consistency in measurement. To analyze the data and determine the effectiveness of the collaborative strategy on students' academic performance and retention in biology compared to traditional or conventional teaching methods, the study employed Analysis of Covariance (ANCOVA).

The choice of ANCOVA is justified by the need to control for potential confounding variables, specifically students' initial knowledge and skills in genetics biology as measured by the pre-test

scores. This is particularly relevant in a quasi-experimental design where random assignment is not possible, as it helps to account for any initial differences between students that could skew the results. By adjusting for pre-test scores, ANCOVA enables a more accurate assessment of the treatment effects of the collaborative instructional strategy, thus enhancing the validity of the findings.

The analysis of data and the results obtained from the study conducted on the Effects of Collaborative Instructional Strategy on Senior Secondary Students' Performance in Genetics in Gombe Metropolis, Gombe State. Descriptive statistics of mean and standard deviation were used to answer the research questions while inferential statistics of Analysis of Covariance (ANCOVA) was used to test the null hypotheses at 0.05 level of significance.

### Research Question One

1. What is the mean performance score of students taught genetics using the Collaborative Instructional Strategy (CIS) approach and those taught using Conventional Method (CVM)?

**Table 1: Mean Performance scores of Students Taught Using CIS and CVM**

METHODS	N	Mean	STDV	Mean	STDV	MEAN GAIN
	PRETEST			POSTTEST		
(EXP)CIS	44	34.20	4.96	56.98	8.62	22.78
(COT)CV	42	31.95	5.68	35.93	6.07	3.98

The data presented in Table 1, indicate that the experimental group exhibited a pre-test mean of 34.20 (S.D= 4.96) and a post-test mean of 56.98 (S.D= 8.62), resulting in a mean gain of 22.78, when taught genetics using the Collaborative Instructional strategy (CIS). Conversely, the control group displayed a pre-test mean of 31.95 (S.D= 5.68) and a post-test mean of 35.93 (S.D= 6.07), yielding a mean gain of 3.98, when taught genetics using conventional method (CVM). Importantly, the experimental group's mean gain of 22.78 surpassed the control group's mean gain of 3.98, indicating a significant disparity in mean performance scores between the two groups in favor of the experimental group.

### Research Question Two

2. What is the mean retention scores of students taught genetics using the Collaborative Instructional strategy (CIS) approach and those taught using conventional method (CVM)?

**Table 2: Mean Retention Scores of Students Taught Using CIS And CVM.**

METHODS	N	Mean	STDV	Mean	STDV	MEAN GAIN
	PRETEST			POSTTEST		
(EXP)CIS	44	35.11	4.96	61.98	8.44	26.87
(COT)CV	42	32.83	6.94	42.93	8.41	10.10

The data presented in Table 2 indicate that the experimental group exhibited a pre-test mean of 35.11 (S.D= 4.96) and a post-test mean of 61.98 (S.D= 8.44), resulting in a mean gain of 26.87, when taught genetics using the Collaborative Instructional strategy (CIS). Conversely, the control group displayed a pre-test mean of 32.83 (S.D= 6.94) and a post-test mean of 42.93 (S.D= 8.41), yielding a mean gain of 3.98, when taught genetics using conventional method (CVM). Importantly, the experimental group's mean gain of 35.11 surpassed the control group's mean gain of 32.83, indicating a significant disparity in mean attitude scores between the two groups in favor of the experimental group.

### Research Hypotheses One

1. There is no significant difference in the mean performance scores of students taught genetics using collaborative instructional strategy (CIS) strategy and those taught using conventional method (CVM).

**Table 3: Summary of ANCOVA for the Performance score of Students using Collaborative Instructional Strategy and Students taught using Conventional Instructional Method**  
Dependent Variable: POSTTEST

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	9779.879 <sup>a</sup>	2	4889.940	91.241	.000
Intercept	2679.655	1	2679.655	50.000	.000
PRETEST	259.503	1	259.503	4.842	.031
METHODS	8471.871	1	8471.871	158.076	.000
Error	4448.260	83	53.593		
Total	201766.000	86			
Corrected Total	14228.140	85			

**a. R Squared = .687 (Adjusted R Squared = .680) b. Computed using alpha = .05**

The data presented in Table 3 shows that the ANCOVA result  $F(1, 83) = 158.076, p = 0.000$ , in which the value of  $p = 0.000 < 0.05$ . Therefore, the null hypothesis that there is no significant

difference in the mean performance scores of students taught genetics using collaborative instructional strategy (CIS) and those taught using conventional method (CVM) is rejected. This means that there is significant difference in the mean performance scores of students taught genetics using collaborative instructional strategy (CIS) strategy and those taught using conventional teaching method (CVM).

### Research Hypotheses Two

2. There is no significant difference in the mean retention score of students taught genetics using collaborative instructional strategy (CIS) and those taught using conventional method (CVM).

**Table 4: Summary of ANCOVA for the Retention score of Students taught using Collaborative Instructional Strategy and students taught using Conventional Method**

**Dependent Variable: POSTEST**

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.
Corrected Model	9283.390 <sup>a</sup>	2	4641.695	85.929	.000
Intercept	2097.567	1	2097.567	38.831	.000
PRETEST	1486.269	1	1486.269	27.514	.000
METHODS	6312.872	1	6312.872	116.866	.000
Error	4483.494	83	54.018		
Total	252382.000	86			
Corrected Total	13766.884	85			

**a. R Squared = .674 (Adjusted R Squared = .666) b. Computed using alpha = .05**

The data presented in Table 4 shows that the ANCOVA result  $F(1, 83) = 116.866, p = 0.000$ , in which the value of  $p = 0.000 < 0.05$ . Therefore, the null hypothesis that there is no significant difference in the mean retention scores of students taught genetics using collaborative instructional strategy (CIS) strategy and those taught using conventional method (CVM) is rejected. This means that there is significant difference in the mean retention score of students taught genetics using collaborative instructional strategy (CIS) and those taught using conventional method (CVM).

### Discussion of Findings

This study investigated the Effects of Collaborative Instructional Strategy on Senior Secondary Students' Performance and Retention in Genetics in Gombe Metropolis, Gombe State. The result from hypothesis one shows that the students taught genetics using the collaborative instructional strategy performed better than those taught using conventional method. The significant difference in performance of students in genetics favored the experimental group and this

suggested that the use of the collaborative instructional strategy for teaching biology enhanced students' performance in genetics. The finding of this study is in line with Adejimi, Nzabalirwa, and Shivoga, (2021) study which revealed that the collaborative strategies were more effective at improving students' performance in biology than the conventional method.

The result from testing hypotheses two shows that the students taught genetics using collaborative instructional strategy retained better than those taught using conventional method. The significant difference in academic retention in genetics favoured the experimental group and this suggested that the use of collaborative instructional strategy in teaching biology enhanced students' retention in genetics. This is corroborated by the findings of Nnachi, Ugama, Ikporo, and Ngwu, (2021) who reveal that the students taught Biology using a collaborative learning strategy retained better than those taught using a conventional approach. Also, Sada, and Adamu, (2023) study showed that there is a significant effect of collaborative teaching on students' retention of biology concepts learned. This is supported by Bika and Sule, (2019) revealed the effectiveness of collaborative instructional strategy on students retention of concepts learned in comparison to the conventional method. Besides, Oyarole (2016) also revealed that there is a significant effect of collaborative instructional strategy on students' retention in ecology.

### **Recommendations**

Given the findings of this study, the following recommendations were made:

- i. Teachers of biology should adopt the use of collaborative teaching and learning strategy to encourage social interaction and active engagement and positive interdependence among their students. that will help students to improve their performance in Biology
- ii. Teachers should be encouraged or mandated to attend workshops and conferences to familiarize themselves with skills to use collaborative learning strategies in their classrooms.

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## **LECTURERS' PERCEPTION OF ARTIFICIAL INTELLIGENCE IN TEACHING AND LEARNING OF TERTIARY INSTITUTIONS STUDENTS IN KWARA STATE, NIGERIA**

**BY**

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### ***ABSTRACT***

*Technology has gone beyond the use of computers. It has expanded into the adoption of Artificial Intelligence (AI). Most advanced nations have begun to adopt Artificial Intelligence in all facets of human development. AI is fast spreading to all fields of knowledge in which education is not an exception. This study investigated the lecturers' perception on AI in teaching and learning in tertiary institutions in Kwara State. The study was a descriptive research of survey type. Purposive sampling technique was used to select 360 lecturers from both public and private institutions in Kwara State. A researcher's designed questionnaire titled "Perception of AI in Teaching and Learning" (PAiTL) was used for data collection. Frequency counts and percentages were used to answer the research questions. The study revealed that AI in teaching is yet to be fully adopted by lecturers in tertiary institutions due to several challenges. It was recommended that AI should be encouraged to be integrated into teaching-learning process in order to meet up with the global trends.*

**Keywords:** *Lecturers, Artificial Intelligence, Teaching, Learning, Tertiary Institution*

### **Introduction**

Artificial Intelligence has been defined as the science and engineering of making intelligent machines. It has been proven to aid a positive influence on human life (Awofiranye, 2024). Kaplan and Haenlein (2019) described AI as a system ability to correctly interpret external information or data and to use those learning to achieve specific goals and tasks through flexible adaptation. Artificial Intelligence is a blooming technological domain capable of altering every aspect of social interactions in education. AI powered technologies by providing opportunities to make educational data more useful at each level of education (Francescet *al.*, 2019). Artificial Intelligence is a technology that modifies educational tools and institution. It changes the teacher's job. It employs advanced analytics, deep learning and machine learning for monitoring the speed of individual's progress in learning. It increases proficiency of education through identifying the gaps in teaching and learning. AI exploration and integration in education reveals

a promising future. AI within teaching improves learning, making it a valuable ally for progress and evolution in higher education. (Ramirez & Fuentes Esparrell, 2024)

Artificial intelligence applications can directly enhance learning capabilities, save time, and obtaining quick information on for teaching and learning. Professors play a crucial role in the teaching-learning process by implementing interactive strategies that enable students to use AI applications to acquire new skills and knowledge, leading to better learning outcomes (Sirghi, *et al.*, 2023). AI helps individual separately by giving separate curriculum based on their interest and skill assessments (Kenga, 2020). Enhancing the overall teaching experience and quality, AI systems are used to support the teacher and reduce workload by automating tasks such as administration, assessment, feedback, and plagiarism. It could also provide additional support for teachers in analyzing students' data, predicting their academic achievements and proffering solutions to their learning challenges. AI helps educators have greater insight as to how students are progressing as well as adopting an approach for supporting students' individual difference. Furthermore, AI could foster the development of smart content and platforms for professional development of teachers. (Onaolapo & Onifade, 2020). AI plays an important role in education for instance, the efficiency of filtering emails, advertising, applications, YouTube, and virtual assistants such as Google, digital libraries, Google Scholar, and other digital research engines in any higher institution worldwide (García-Vélez *et al.*, 2021)

### **Importance of Artificial Intelligence (AI) in Education**

According to Kengan (2020), the following are the importance of AI:

- (i) It can be employed to customize academic curriculum through AI powered machines.
- (ii) It can make global classrooms possible. Whereby distant, visually or hearing-impaired learner can attend lectures.
- (iii) It can provide resources to people who speak different languages using AI based presentation translator.
- (iv) It helps students in sourcing content for assignment and test.

Muresan (2023) explained the uses of Artificial Intelligence in education. These are highlighted below:

- (i) It brings opportunities and benefits to education by facilitating personalized learning, instant feedback and improving efficiency in process of assessment. Thus, enhancing the role of the teacher as a facilitator rather than being at the fore front of the class
- (ii) It can be employed to customize content and activities of online learning platforms to the needs and knowledge level of each student. For instance AI provides additional and simpler explanation of content of instruction
- (iii) It can be used in learning management system to provide personalised recommendations, automatic feedback and monitor student progress.
- (iv) It can be used to create virtual interactive classes and tutorials that serve as real-time guidance to support learning.
- (v) It saves time by automating time consuming administrative tasks in teaching and learning.
- (vi) It can be employed to forecast performance through data analysis, identifying patterns and trends.
- (vii) It eliminates manual administrative works in schools e.g. marking, recording of scores, attendance marking, scheduling and rescheduling of classes among others.

### **Challenges of Artificial Intelligence (AI)**

Artificial Intelligence emergence is rapidly reshaping several fields of knowledge in which education sector is not exempted. According to Kumar (2025), AI is evolving rapidly and its emergence has transformed the technological world. The author further explained some challenges of Artificial Intelligence which are highlighted below:

- (i) Artificial Intelligence ethical issues
- (ii) Bias in Artificial Intelligence
- (iii) Artificial Intelligence integration
- (iv) Computation power in Artificial Intelligence and intense learning
- (v) Data privacy and security
- (vi) Legal issues with Artificial Intelligence
- (vii) Artificial Intelligence transparency

- (viii) Limited knowledge of Artificial Intelligence
- (ix) Trust in Artificial Intelligence system
- (x) Lack of Artificial intelligence explainability in terms of understanding and determining how AI make conclusion and recommendation
- (xi) Discrimination in Artificial Intelligence towards specific individuals or groups to race, gender e.t.c.
- (xii) High and unrealistic expectations
- (xiii) Implementation strategies for Artificial Intelligence including systematic approaches to bring AI technologies into the existing systems and work flows for effectiveness.
- (xiv) Data confidentiality in private information remaining under restricted access.
- (xv) Artificial Intelligence software malfunction

### **Purpose of the Study**

The main purpose of this study was to find out the perceptions of lecturers on Artificial Intelligence in teaching and learning in tertiary institutions in Kwara State.

### **Research Questions**

- 1) What are the perception of lecturers on AI in teaching and learning in tertiary institutions in Kwara State?
- 2) What are the challenges associated with the utilisation of AI in teaching and learning in tertiary institutions in Kwara State?

### **Methodology**

A descriptive research using a survey method was employed for this study. The population consisted of 360 lecturers from both public and private institutions in Kwara State. A random sampling technique was used to select the samples from both public and private Universities and Colleges of Education in Kwara State, Nigeria. A researcher designed copies of questionnaire entitled “Perception of Artificial Intelligence in Teaching and Learning” (PAiTL) was used for data collection. The instrument was validated by four lecturers in tertiary institutions in Kwara State and two research experts in educational measurement and evaluation. Test-retest was used

to determine the reliability of instrument. The Cronbach Alpha was used to determine the reliability at 0.75. Frequency counts and percentages were used to answer the research questions.

## Results and Discussion

The research questions were answered as follows:

**Research Question 1:** What are the perception of lecturers on AI in teaching and learning in tertiary institutions in Kwara State?

**Table 1: Frequency and Percentage on the Perception of Lecturers on AI in Teaching and Learning in Tertiary Institutions in Kwara State.**

S/N	Items	Agreed		Not Agreed	
		Frequency	%	Frequency	%
1.	AI makes teaching and learning easy	296(82.2)		64(17.8)	
2.	AI smooth and aids conceptual understanding	306(85)		54(15)	
3.	AI can be used to complement teaching in tertiary institution	256(71.1)		104(28.9)	
4.	AI tools can only be use in extracurricular activities	126(35.0)		234(65)	
5.	AI supports both teachers and students conceptual understanding and eliminating misconception	317(88.1)		43(11.9)	
6.	AI personalizes learners needs	256(71.1)		104(28.9)	
7.	AI enhances efficiency of lecturers	208(57.8)		152(42.2)	
8.	AI provides support for learners diverse learning style	215(59.7)		145(40.3)	
9.	AI in teaching and learning identifies students strengths and weakness	83(23.1)		277(76.9)	

Table 1 evaluated that 85% of the respondents agreed that AI can smooth and aid conceptual understanding while 15% disagreed. 88.1% of the respondents agreed that AI supports both teachers and students' conceptual understanding, thus eliminates misconception of science. 82.2% of the respondents also agreed that AI make teaching and learning of science easy while 64% disagreed with the statement. 71.1% agreed that AI can personalise learners' needs but 28.9 of the respondents disagreed.

**Research Question 2:** What are the challenges associated with the utilisation of AI in teaching and learning in tertiary institutions in Kwara State?

**Table 2: Frequency and Percentage on the Challenges Associated with the Utilisation of AI in Teaching and Learning in Tertiary Institutions in Kwara State.**

S/N	Items	Agreed		Not Agreed	
		Frequency	%	Frequency	%
1.	Misinformation and bias of conclusion drawn from data	214(59.5)		146(40.5)	
2.	Loss of human interaction	306(85)		54(25)	
3.	Over reliance and dependency of the content	317(88.1)		32(11.9)	
4.	Unavailability of modern electrical equipment for AI	274(76.1)		86(23.9)	
5.	Unavailability of consistent internet	208(57.8)		152(42.2)	
6.	Lack of understanding and awareness	268(74.4)		92(25.6)	
7.	Plagiarism	266(73.9)		94(26.1)	
8.	Risk of job displacement	214(59.5)		146(40.5)	
9.	Cost of maintaining AI technology	234(65.0)		126(35.0)	
10.	AI decision could not be challenged	338(93.9)		22(6.1)	

Table 2 revealed that 93.9% of the respondents agreed that AI decision cannot be challenged while 6.1% disagreed. 88% of the respondents agreed to over reliance and dependency on AI. While 11.9% disagreed. 85% of respondents agreed that there is loss of human interaction with AI in teaching and learning while 25% disagreed. 74.4% of the respondents agreed to lack of understanding and awareness of AI. While 25.6% disagreed to the statement.

### Discussion

This study revealed that AI supports both teachers and students conceptual understanding and eliminating misconception of science, smooths and aids conceptual understanding, complements teaching and learning and personalised learners' needs. This in line with Onaolapo and Onifade (2020) that stated that the use of AI could assist in identifying the learning needs and abilities of individual students and developing appropriate measures to respond to such needs. However, AI dose not identifies students strengths and weakness and cannot only be use for extracurricular activities .This is supported by studies of Sirgh, et al.(2023). Despite its transformative potential, the study also acknowledges the challenges associated with integrating AI into teaching and learning in tertiary institution. It was revealed from the responses that among challenges that hinders the use of AI in tertiary institutions in kwara state are AI decision could not be

challenged, over reliance and dependency on AI, Unavailability of modern electrical equipment, loss of human interaction and lack of understanding and awareness of AI in education.

### **Conclusion**

The rapid pace in the adoption AI in developed countries such as USA, UK, China among others, to enhance personalized learning, administrative efficiency, and educational research cannot be over emphasised. Educators are now shifting from the conventional system in education to the use of AI. Thus, enhancing more human and creative learning experiences. The findings of this study has revealed lecturers of tertiary institutions in Kwara state have varying perceptions on the adoption of AI in teaching and learning process. Despite its perceived benefit in education, there are several challenges hindering the adoption in teaching and learning process in tertiary institutions. To meet up with the pace of emerging innovative approaches and global trends in teaching and learning in developed nations, the need to integrate AI at all levels of education in Nigerian institutions is required and provide solutions to the challenges for successful integration into education

### **Recommendations**

1. Government should provide necessary AI facilities in universities and colleges of education to ensure proper implementation in teaching and learning processes.
2. Government and authorities should encourage the use of AI in teaching and learning in tertiary institutions.
3. School authorities should make adequate provision of modern electrical equipment for adequate adoption of AI in tertiary institutions.
4. Government or authorities should make available different AI software for lectures of tertiary institutions in kwara state for proper integration in education.

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**ACADEMIC RESILIENCE AND EMOTIONAL INTELLIGENCE AS PREDICTORS OF ACADEMIC ACHIEVEMENT AMONG SENIOR SECONDARY SCHOOL STUDENTS IN DAWAKIN KUDU EDUCATION ZONE, KANO STATE**

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**ABSTRACT**

*This study investigated the influence of academic resilience and emotional intelligence as predictors of academic achievement among senior secondary school students in Dawakin Kudu Education Zone, Kano State. Correlational design was used for the study. The population of the study comprised of 1205 senior secondary school students and 300 students were selected by means of simple random sampling. The instrument used for the study were Academic Resilience Scale (ARS) and Emotional Intelligent Scale (EIS) and Senior Secondary Qualifying Certificate Examination (SSCQE) in Civic Education, 2022/2023 session. Data collected were analyzed using Pearson Product Moment Correlation (PPMC). Findings revealed that there is positive relationship between academic resilience and academic achievement among senior secondary school students in Dawakin Kudu Education Zone. It has also been outlined that there is significant relationship between emotional intelligent and academic achievement among senior secondary school students in Dawakin Kudu Education Zone.*

**Keywords:** *Academic Achievement, Academic Resilience, Emotional Intelligence*

**Introduction**

Academic achievement of students especially at the senior secondary school level is not only a pointer to the effectiveness or otherwise of schools but a major determinant of the future of youths in particular and the nation in general. The medium through which the attainment of Individuals and the nation's educational goals can be achieved is learning. Learning outcomes have become a phenomenon of interest to all, and this account for the reason why scholars have

been working to unravel factors that militate against good academic achievement Ayodele, Olarewaju and Ezeokoli, (2013). This phenomenon has been referred to as academic achievement or scholastic functioning. Academic achievement of learners has attracted attention of scholars, parents, policy makers and planners. Adeyemo (2001) opined that the major goal of the school is to work towards attainment of academic excellence by students. According to him, the school may have other peripheral objectives, emphasis is always on the achievement of sound scholarship.

Academic achievement has to do with what a learner is able to accomplish by execution of class work in school. The purpose of academic achievement measurement are enumerated as follows; to determine the relative effectiveness of a programme in terms of students' behavioural output; to identify students growth or lack of growth in acquiring desirable knowledge, skills, attitude and social values; to help teachers determine the effectiveness of their teaching technique and learning materials; to help motivate students to learn as they discover their progress or lack of progress in a given task; to encourage students to develop a sense of discipline and systematic study habits; to acquaint parents or guardians with their children achievement; to predict the general trend in the development of teaching learning process; to make reliable decision about education planning and to provide educational administrators with adequate information about teachers effectiveness and school needs (Musa, 2014). Academic achievement has been seen as one of the most important goals of educational process. It has been of concern to parents, teachers, guardians, administrators, students and even the wider society. The desire for high level of achievement puts a lot of pressure on students, teachers and schools and in general the education system itself. Academic achievement is the result got by students or grades awarded to them after series of teaching and learning between teachers and learners. Academic achievement is the extent to which teachers or institutions have achieved their educational goals. In this study academic achievement refers to achievement in transitional/certification examination of senior secondary students (SSCQE). Poor academic achievement brings untold hardships and frustrations to the individual and backwardness in the development of the country (Eze, 2010). Usman (2000), defines academic achievement as the measure of students learning or acquisition of certain skills at the end of teaching and learning activities. It reflects in examination written by students after the process of learning. Academic achievement is based on the degree of

intellectual stimulation that the child could receive from learning situations. Chime (2004), also noted that academic achievement is the result of an interactional session between a teacher and a learner. The process of teaching culminates in assessment or evaluation and the end point of evaluation is academic achievement.

Academic resilience has to do with student's capability to handle academic impediments, challenges, difficulty and stress in academic or school environment. Mwangi, Okatcha, Kunai and Ireri (2015) defined academic resilience as the capacity of students to resolve academic difficulties, tension and school - based pressure to learn. Abiola and Udofia (2011) describe academic resilience as internal capability, ability, possibility, the flexibility that enable students to cope while going through academic pressure and challenges. Put differently, academic resilience can sustain interest, passion, effort and persistence toward achieving long - term future goals despite challenges. Jowkar Kojuri, Kohoulat and Hayat (2014) asserted that academic resilience is vital in education, and it could be a predictor of academic achievement. Muhammad, Hafiz, Naemullah and Nadeem (2010) stated that academically resilient students tend to perform better academically irrespective of their home background. This means that academically resilient students are better able to cope with academic stress during teaching and learning. Academic resilience students tend to sustain better academic achievement even when faced with academic challenges or stress that threaten their academic ability and achievement. Martin and Marsh (2016) reiterated that resilient could affect students' level of success in every aspect of life, including academic achievement. However, there is a dearth of empirical studies on the influence of academic resilience and emotional intelligence as predictors of academic achievement among senior secondary school students in Dawakin Kudu Education Zone, Kano State. Hence the need for this study.

Emotional intelligence according Chauhan (2007) is the process of learning to understand our own emotions, learning to the emotions of others, gaining proficiency in positive emotional response to one self and recognizing and accepting the emotional responses of others. Emotional intelligence has received much attention as a factor that is useful in understanding and predicting individual's achievement and a more predictive of academic and career success than intelligence quotient (IQ) test and other measures of scholarship aptitude and achievement (Khanbai, 2014). Emotional intelligence may be perceived as a unitary ability helpful in knowing and judging

emotions in close cooperation with one's thinking process to behave in proper way, for the ultimate realization of the happiness and welfare of the self in tune with others. Emotional intelligence may as well be defined as the capacity to reason with emotion integrate it in thought, to understand it and to manage it (Mayer and Salovey, 1995). Emotionally intelligent individuals are highly in tune with the weather pattern of their own disposition. They more perceive refined changes in temperature, and they understand the causes and consequences of those changes. They also acknowledge how the feelings of their emotions influence their thinking and behaving. While they are aware of the general tendency to be cautious and stay inside when the weather is gloomy and to explore and be creative when the clouds are clear, they also recognize that they need not be victimized by these motivational pulls and that they can show up for work. Emotionally intelligent happiness is the peace of mind that comes from knowing that one is capable of handling any situation that arise, no matter how painful or how challenging it can be and having the ability to experience emotion in the service of living meaningfully, socially, and successfully. According to Yakasai, et al (2010) emotional intelligence can be conceptualized as a set of acquired skills and competence that predict positive outcomes at home with one's family, in school and at work.

The forgoing discussion suggest that the issue of academic resilience and emotional intelligence as predictors of academic achievement could have negative or positive influence on students' academic achievement. It is upon this premise that the present research study investigated the influence of academic resilience and emotional intelligence as predictors of academic achievement among senior secondary school students in Dawakin Kudu Education Zone, Kano State.

### **Statement of the Problem**

Senior Secondary Schools Certificate Qualifying Examination (SSCQE) is a type of examination/test which is conducted by Kano Education Resource Centre (KERC). It is a centralized examination/test constructed by teachers under strict supervision of Kano Education Resource Centre (KERC) in Kano state. It is a standardized examination constructed to prepare students for external examinations such as WASSCE, NECO or NABTED. The SSCQE is expected to possess some qualities for it to achieve the desired objectives stated in the curriculum.

Students come to school from different family set up and different communities of diverse cultures and standard. All things being equal students come from different socio-economic background aiming at attaining success in the school achievement. The variation in family background and financial situations are bound to cause emotional reactions and resilience to examinations, abilities and realization.

Senior secondary schools are established with the objective to inspire students with a desire for self - improvement and achievement of excellence. However, among the frustrating problems in the system is poor academic achievement of the students in the senior secondary school certificate qualifying examinations (SSCQE) which made the students to repeat the academic year or face withdrawal from the school. It is imperative that an investigation be carried out to identify some of the factors that are closely related to academic achievement so as to find solutions. The study is therefore conducted to ascertain the influence of academic resilience, emotional intelligence as predictors of academic achievement among senior secondary school students in Dawakin Kudu education zone, Kano State, Nigeria.

### **Objectives of the Study**

The purpose of the study was to investigate academic resilience and emotional intelligence as predictors of academic achievement among senior secondary school students in Dawakin Kudu Education zone, Kano state. Specifically, the study sought to:

1. Examine the relationship between academic resilience and academic achievement
2. relationship between emotional intelligence and academic achievement

### **Research Hypotheses**

1. There is no significant relationship between academic resilience and academic achievement
2. There is no significant relationship between emotional intelligence and academic achievement

### **Methodology**

The study was carried out in Dawakin Kudu education zone, Kano State which comprised of two local government areas. The design of the study adopted is correlational survey. This is because correlational studies seek to establish the relationship existed between two or more variables of interest to the researcher (Nworgu, 2015). All predictive studies according to Nworgu are

correlation studies. The population of the study comprised of 1,205 senior secondary school (SS II) Civic education students.

Multistage sampling was used to select the 10 schools out of 38 which were selected in the study area. Bichi (2004) defines multistage cluster sampling technique as a situation where the target population is divided into clusters, and the further sampling takes place within the clusters until the target individuals are sampled. In line with the above, since Dawakin Kudu education zone comprises of two (2) local governments areas, that is Dawakin Kudu LGA and Warawa LGA, senior secondary schools in each local government area were grouped to form a cluster. From each cluster further sub - clusters of male and female senior secondary schools were formed.

From Dawakin Kudu LGA three (3) male schools and were selected randomly from the male cluster and two (2) female schools from the female cluster. While in Warawa LGA also the same procedure was followed whereby three male (3) schools were selected randomly from the male cluster and two (2) female schools from the female cluster. Therefore, simple random sampling was also used to select thirty (30) Civic Education senior secondary students to come up with three hundred (300) students as sample size. This is because the male students are greater in number than the female students in term of population. This procedure was followed and adhered to throughout the selection exercise.

The instruments used for data collection were Academic Resilience Scale (ARS) and Emotional Intelligence Scale (EIS). Academic resilience scale (ARS) is a 30 items scale on which the students are to rate the academic resilience on a five-point Likert scale. The scale ranges from 5 (likely) - 1 (unlikely). The instrument is composed of negative and positively worded items that describe students' academic resilience on which the students are to rate their degree of resilience based on the statement. Emotional Intelligence Scale (EIS) is a 16 item self-report scale developed and validated by Law and Wong (2004), based on Davies four - Dimensional definition of emotional intelligence. It assesses emotional intelligence competencies in four areas; self - emotional Appraisal, Others - emotional Appraisal, Use of Emotions and Regulations of Emotions. The scale was preferred for this study on the basis that it is positively built on Mayer, Caruso and Salovey Emotional Intelligence Test (MSCEIT). The instruments were validated by experts in Educational Psychology and Measurement and Evaluation from Department of Education, Bayero University, Kano and one (1) senior research officer from

N.E.R.D.C. experienced in civic education. The reliability of the instruments was established using Cronbach's Alpha. The instruments were administered to 40 students in Rano education zone which is not involved in the study. The scores generated were subjected to Cronbach's Alpha computation which yielded reliability coefficient of 0.83 and 0.75 for EIS and ARS respectively.

The instruments were administered to the students with the help of four (4) research assistants. The research assistants were briefed on the purpose of the study, the instruments and how to administer them as well as collate the students' academic achievement as contained in the senior secondary school certificate qualifying examination (SSCQE) gazette. Because the students were selected accidentally, they were required to write their number on the instruments. The research assistants retrieved all the completed instruments on the same day. The generated data from the study were analyzed using Pearson Product Moment Correlation Coefficients (PPMC). The null hypotheses were tested at 0.05 level of significance and the following decision rule: reject the null hypothesis where P - value is less than 0.05 ( $P < 0.05$ ), do not reject null hypothesis where P - value is greater than 0.05 ( $P > 0.05$ ).

## Results

Pearson Product Moment Correlation (PPMC) statistical tool was used to analyze the data and the result are presented according to the hypotheses tested.

**Hypothesis One:** There is no significant relationship between academic resilience and academic achievement.

**Table 1: The Relationship between Academic Resilience and Students' Academic Achievement**

Variable	N	Mean	SD	R	Sig	P
Academic Resilience	300	23.10	51.09	.781	.000	Significant $P < 0.05$
Students' Academic Achievement	300	14.44	46.34			

Table 1, indicated that there was significant positive relationship between academic resilience and students' academic achievement ( $r = .781$ ;  $P < 0.05$ ). This means that academic resilience influences the level of students' academic achievement.

**Hypothesis Two:** There is no significant relationship between emotional intelligence and academic achievement.

**Table 2: The Relationship between Emotional Intelligence and Students' Academic Achievement**

Variable	N	Mean	SD	R	Sig	P
Academic Resilience	300	23.10	51.09	.781	.000	Significant P < 0.05
Students' Academic Achievement	300	14.44	46.34			

Table 2, indicates that there was significant positive relationship between emotional intelligence and students' academic achievement ( $r = .861$ ;  $P < 0.05$ ). This means that emotional intelligence influences the level of students' academic achievement.

### Discussion

The result of the first hypothesis revealed that there was significant relationship between academic resilience and students' academic achievement ( $r = .781$ ;  $P < 0.05$ ). This means that academic resilience influences the level of students' academic achievement. This corroborate the studies of Iviemu (2021) who found that there is a strong positive relationship between academic resilience and academic achievement of tertiary institutions in Delta state south senatorial Districts, with a sample of three hundred and thirty-seven (337). The researcher found that due to the fact that, many students have develop high coping skills to be able to withstand academic stress better academic achievement. Another reason for this finding could be that most students' uses their past successes to motivate themselves to work harder even if the school requirements are many. This finding is in line with that of Mwangi, Okatcha, Kinai and Ireri (2015) who found a positive and significant relationship between academic resilience and academic achievements. This also agree with Fallon (2010) who reported a positive relationship between academic resilience and academic achievement. However, the finding contradicts that of Buslig (2019) who found no significant relationship between the respondents' academic resiliency and academic achievement. This finding also disagrees with Uzma (2007) who found no relationship between academic resilience and academic achievement of students.

The result of the analysis to test the second hypothesis that there was significant relationship between emotional intelligence and academic achievement ( $r = .861$ ;  $P < 0.05$ ). This means that

emotional intelligence influences the level of students' academic achievement. This is to say that students' emotional intelligence had a significant impact on their academic activities. This finding corroborates the work of Oparaji, Igbokwe and Okeke-James (2020) who found that there is significant relationship between students' emotional intelligence and their academic achievement in economics. This finding is in agreement with Coleman (2008) who explained that the relationship between the mind and emotional intelligence is inseparable. Therefore, it is impossible for good thinking to come from mind in the influence of emotions. Another finding of the study showed that there is a high and positive relationship between emotional intelligence and academic achievement. This means that students' emotional intelligence has a high significant influence on their academic achievement in civic education. This finding is in line with the findings of Preete (2013), that academic achievement without emotional intelligence is not futuristic and in fact impossible. In support of the above findings Maraichelvi and Royan (2013) states emotional intelligence in its four domains if interpersonal awareness has been separately and totally found to be significantly associated with academic achievement of students irrespective of their levels. Also, Maizatul, Norshinda and Norhatiza (2013) in their study revealed that emotional intelligence in its dimensions has been found to be significantly related to students' academic achievement. According to Fernandez, Salamonson and Graffiti (2012), emotional intelligence has emerged as a significant predictor of academic achievement. This presupposes that students cannot do well in civic education or any other subjects in the absence of emotional intelligence. In fact, research has shown that over 40% of the change in the academic achievement of students is attributed to emotional intelligence.

### **Conclusion**

The study investigated academic resilience and emotional intelligence as predictors of academic achievement among senior secondary school students in Dawakin Kudu education zone, Kano state. The findings from the study indicated that academic resilience and emotional intelligence significantly influence the students' academic achievement in the society. Therefore, it pertinent to improve these factors (academic resilience and emotional intelligence) in order to eradicate the problem of poor students' academic achievement in Nigeria.

## **Recommendations**

Arising from the findings of this study the following were recommended:

1. Counselling psychologists should pay attention to the role of emotional intelligence on the academic achievement of students.
2. Diagnostic analysis of students' emotional intelligence and academic resilience should be carried out to all students at the point of enrolling into senior secondary schools.
3. Counselling Psychologists and school counsellors should work on the emotional well-being of students in the school.
4. Students should possess a good knowledge of their emotional intelligence.
5. Students should understand the emotional intelligence of the people around them and regulate their relationships with empathy.
6. Civic education teachers should observe their students to identify those with very poor emotional intelligence and academic resilience and recommend them for counselling.
7. Serious attention should be given to students passing through hard times such as illness, dearth of relatives, emotional instability among others, to ensure that they do not lose the interpersonal intelligence to learn civic education or the resilience required to continue.

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**EFFECT OF MASTERY LEARNING APPROACH ON ACADEMIC PERFORMANCE  
AND RETENTION OF ISLAMIC STUDIES PUPILS IN KATSINA ZONAL  
EDUCATION, KATSINA STATE**

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**ABSTRACT**

*The study examined the effect of mastery learning approach on academic performance and retention of Islamic studies pupils in Katsina zonal education, Katsina state. The study has two objectives, from which two research hypotheses were formulated and tested. The objectives among others are to: determine the difference in the academic performance and retention abilities of primary school pupils taught the recitation and memorization of the Qur'an using mastery learning approach and those taught using conventional teaching method in Katsina education zone. The study adopted quasi-experimental research design involving a pre-test, post-test, and post-post-test. Two sets of students were involved in the study namely; Experimental group (EG) and Control group (CG) respectively. The population of the study comprised of all the 66831 (31735 boys and 35096 girls) Primary 5 pupils from 469 public primary schools of the six (6) Local Government Areas under Katsina Zonal Education of State Universal Basic Education Board (SUBEB). Sample for the study consisted of 90 primary five pupils drawn from two intact classes in the two sampled schools using purposive sampling technique. The instrument used to collect data was Islamic Studies Performance Test (ISAPT) and adapted Islamic Studies Retention Test (ISRT). The ISAPT was validated by experts and piloted. The internal consistency reliability stood at 0.85. Two research questions were analyzed using mean and standard deviation while the hypotheses tested using independent sample t-test at 0.05 level of significance. The results showed that primary school pupils taught Islamic studies using mastery learning approach (MLA) performed significantly better than those taught same content using conventional method. Based on the findings from the study it was among others recommended that curriculum planners should clearly emphasize in the Islamic Studies curriculum content, the adoption of mastery learning approach in teaching and learning process and motivate the teachers to keep using innovative teaching approaches, on learner-centeredness.*

**Keywords:** *mastery learning approach, conventional method, academic performance, memorization, Islamic studies.*

## **Introduction**

Mastery Learning Approach (MLA) is an education approach based on the concept that all learners can learn when provided with conditions suitable to their situation. Adam and Marshall (2022) asserted that Mastery learning approach is closely connected to competency-based learning as an observable behaviour of the students to incorporate and exhibit knowledge, skills, values, and attitudes and can proceed to learning other content with complexity at their own phase (Adam, & Marshall, 2022). Hence, being competent in a particular subject area describes the student to have acquired the necessary skills in all the three learning domains (cognitive, affective and psychomotor) in a certain context at a defined stage of education or practice (FME, 2018). According to Adam and Marshall (2022), in the 1960s Bloom discovered that the most efficient learning condition was one-on-one tutoring that starts with the student understanding of material, acquisition, and evaluation of learning progress through a formative assessment. Therefore, only when the student exhibits mastery of content at 70% - 100% precision on formative assessments then the teacher present new material. According to Olorumaiye (2024) grades “A1” represents excellent academic accomplishment that corresponds to a percentage ranging from 75% - 100%, indicating the learner has adequate mastery of subject matter such as Biological and Physical Sciences, Legal system, Engineering and Technology).

Academic performance simply refers to the extent students achieved the educational outcomes in school subjects and extra-curricular activities provided to influence desirable behavioural changes to fit into the society they belonged (Tukura, et al 2020). In other words, academic performance entails the extent a student accomplished the educational objectives assessed through evaluation to predict the students’ potentialities in learning experiences been exposed to within a specified period of time (Tukura, et al 2020). Latter Grades (A = 70 -100, B = 60 – 69, C = 50 – 59, D = 40 49 and F = 0 – 39) are assigned to represent the students’ aptitude levels on both cognitive, affective and psychomotor learning domains (Tukura, et al 2020).

Moreover, retention ability simply denotes the students’ ability to recall or reproduce previously learned materials or concepts with precision. In other words, Durojaiye et al. (2021) describes retention as the learner’s ability to retain experiences at a later time”. However, in the words of Tukura, et al., (2020) stated that retention refers to student’s ability to store and remember ideas

and facts. It also portrays the extent to which a student attainment of educational outcomes in a given subject area.

Islamic studies subject is one of teaching subjects taught at basic, post basic, tertiary and university education levels in Nigeria aimed at inculcating the sound moral values among children for wellbeing and patriotism. FME (2018) stated that “the title ‘Islamic Studies’ is chosen in preference to all previous titles such as Islamic Religious Knowledge (IRK), Islamic Religious Studies (IRS) and The Religion and National Values (RNV) since it is more comprehensive and therefore fitting the subject matter in the curriculum.” Federal Ministry of Education (FME, 2018) defined Islamic Studies as the totality of learning experiences centered on the relationship between man and his Creator and between man, his fellow men and other creatures. On the other hand, Dauda (2018) viewed Islamic Studies as a teaching subject that comprehensively encompasses all the temporal and spiritual spheres of human life from the most insignificant the most-fundamental sectors for prosperity.

Furthermore, Islamic Studies is one of school subjects that requires thorough understanding of all its contents for application in daily living. Therefore, education in the Islamic viewpoint produces a cultured, well-behaved, considerate, reasonable and God-fearing individual (FME, 2018). Learners has varying learning abilities, styles and the pace at which they learn contents, which differs from their counterparts. In line with this, the FME (2018) empathized the use of modern teaching techniques such as questions and answers, guided discovery, simulation, story-telling, brains storming, cooperative learning, inquiry, field trips, peer-tutoring and concept mapping, which have been studied and found to be effective to varying degrees, in improving pupils’ academic performance and retention of learned concepts.

Islamic studies represents complete aspects of Islam for it primarily focus on four sources of Shariah; Qur’an and Prophetic Traditions (Hadith) as primary sources and Consensus of Scholars Views (Ijma’) and Analogical Deductions (Qiyas) as secondary sources (FME, 2018). These sources further falls naturally into various interconnected subdivisions been incorporated in the new primary and post primary 9-Year Basic Education Curriculum that includes; the Arabic Alphabets, Qur’an, Tajwid, Hadith, Fiqh, Sirah and Tahdhib that requires mastery. Therefore, pupils must attain certain level of mastery of correct articulation of Arabic Alphabets to enable

them write and read Arabic letters, words, verses and short chapters of the Qur'anic texts correctly with precision at moderate speed. Also, pupils must have mastery of Qur'anic recitation with rules of Tajweed to avoid unnecessary errors while reading occasionally either individually or in congregation. To this end, this study was carried out to provide empirical evidence on the effects of mastery learning approach on Primary School pupils' academic performance and retention of concepts in Islamic studies in Katsina Zonal Education Quality Assurance.

### **Statement of the Problem**

The Islamic Studies curriculum has been designed to inculcate balance mental and moral values among primary school pupils at a formative stage. According to the Federal Ministry of Education (FME, 2018) successful implementation Islamic Studies curriculum largely depends on teachers' capability to use appropriate innovative learner-centered instructional strategies, and selection of relevant teaching aids (real and improvised). On the other hand, Busari (2018) asserted that pupils mastery in Islamic studies still not yielding positive result because of some critical factors such as teachers lack of skills to harness the explicit instructional objectives with the lesson, Islamic studies teachers not well versed in Arabic language, persistent use of inappropriate teacher-centred instructional methods, students' learning styles, shortage of school facilities, learners problem with Arabic as second language learning, learners persistent difficulties to contrast between the articulation of (/أ/ع/خ/ك/ح/ه/د/ض/ط/ت/ث/س/ص/ذ/ز/ظ/) Arabic voiced and voiceless sounds at the initial and final positions, educational policy among others (FME, 2018). The researcher discovered from existing literature that numerous studies have been conducted on the effects of mastery learning approach on students' achievement in English language, Mathematics, Physical, Biological, Technological and Social Sciences at secondary school and tertiary education levels in different localities.

The statistical summary of pupils' academic performance in the Islamic studies internal examination results obtained from 5 public primary schools in Jibia LGA of Katsina State ranges from 2019/2020 - 2023/2024 academic sessions.

S/N	Academic Session	Pupils Enrolment	Letter Grades					
			A	%	B	%	C	%
1.	2019/2020	4426	1404	31.7	1268	28.6	1754	39.6
2.	2020/2021	3666	1035	28.2	1296	35.4	1335	36.4
3.	2022/2022	3144	1100	35.0	633	20.1	1411	44.9
4.	2022/2023	2861	841	29.4	982	34.3	1038	36.3
5.	2023/2024	3617	977	27.0	1121	31.0	1519	42.0
	<b>Grand Total</b>	<b>17714</b>	<b>5357</b>	<b>30.3</b>	<b>5300</b>	<b>29.9</b>	<b>7057</b>	<b>39.8</b>

**Source:** Monitoring and Evaluation (M&E) Unit, Planning Research and Statistics, Jibia LGEA.

The pupils academic record of 2019/2020 academic session revealed that out of 4426 primary 6 pupils only 1404 representing 31.7% have achieved a bench mark mastery level of 70% - 100%. Also, in 2020/2021 session out of 3666 only 1035 pupils with 28.2% achieved mastery level. Meanwhile, in 2021/2022 the academic performance record of 3144 only session 1100 of 35.0% reached mastery standard. Likewise, in 2022/2023 the pupils' academic performance record depicts that out of 2861 only 841 of 29.4% achieves mastery standard. Consequently, the academic performance record of 2023/2024 indicated that out of 3617 only 977 pupils with 27.0% accomplishes mastery standard. It is shocking that the academic performance and retention ability of primary school pupils in the internal examination results of Islamic studies out of the grand total of 17,714 primary 6 pupils only 5357 with 30.3% obtained 'A' letter grade as distinction that denotes the pupils achieved mastery standard of 70% - 100%. These result points to the fact that the pupils' academic performance and retention ability is below the mastery level of the expected minimum standard of 70% - 100%. Thus, the learners persistent poor academic performance could be attributed to lack of retention of learned concepts as most Islamic studies teachers uses the conventional teaching method merely 'chalk and talk' which is boring and uninspiring in attaining the expected learning outcomes. Therefore, the problem of this study is to examine if the use of mastery leaning approach could improve the primary school

pupils' academic performance and retention of Islamic studies concepts in Katsina education zone, Katsina state, Nigeria?

### **Objectives of the Study**

The objectives of the study are to:

1. determine the difference in the mean academic performance of primary school pupils taught the recitation of the Qur'an Chapter 31:12-19 using Mastery Learning Approach and those taught using conventional teaching method in Katsina education zone.
2. find out the difference in the mean retention of primary school pupils taught the memorization of the Qur'an Chapter 31:12-19 using Mastery Learning Approach and those taught using conventional teaching method in Katsina education zone.

### **Research Questions**

To achieve the stated objectives, the following research questions were formulated to guide the research: -

1. What is the difference between the mean academic performances of primary school pupils taught the recitation of the Qur'an Chapter 31:12-19 using Mastery Learning Approach and those taught using conventional teaching method in Katsina education zone?
2. What is the difference between the mean retention of primary school pupils taught memorization of the Qur'an Chapter 31:12-19 using Mastery Learning Approach and those taught using conventional teaching method in Katsina education zone?

### **Hypotheses**

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

HO<sub>1</sub>: There is no significant difference between the mean academic performances of primary school pupils taught recitation of the Qur'an Chapter 31:12-19 using Mastery Learning Approach and those taught using conventional teaching method in Katsina education zone.

HO<sub>2</sub>: There is no significant difference between the mean retention of primary school pupils taught memorization of the Qur'an Chapter 31:12-19 using Mastery Learning Approach and those taught using conventional teaching method in Katsina education zone.

### **Methodology**

The research design was quasi-experimental involving pre-test, post-test and post post-test. The study was a field experiment with one independent and contingent variable as instructional techniques (Mastery learning approach versus conventional teaching method) and the two dependent variable was the students' academic performance and retention levels. The population of the study comprised of all the 66831 (31735 boys and 35096 girls) Primary 5 pupils from 469 public primary schools of the six (6) Local Government Areas under the Katsina Zonal Education Quality Assurance (ZEQA) of State Universal Basic Education Board (SUBEB). The sample for the study consisted of 90 primary 5 pupils purposively sampled from two intact classes of two sampled schools. The instrument used to collect data was Islamic Studies Performance Test (ISAPT) and adapted Islamic Studies Retention Test (ISRT). The ISAPT was validated by three experts and pilot-tested and the internal consistency reliability stood at 0.85. The experimental group was taught using Islamic studies concepts using mastery learning approach while the control group was taught using conventional teaching method. Also, the treatment for both groups lasted for six weeks. Two research questions were analyzed using mean and standard deviation while the hypotheses tested using independent sample t-test at 0.05 level of significance as the criteria for acceptance or rejection.

### **Results**

The study was carried out involving Mastery Learning Approach as independent variable (IV) paired with lecture method as contingent variable (CV) and two dependent variables (DV) 'Academic Performance and Retention. Hence, the independent variable were manipulated to determine its influence on the dependent variables. Thus, the collected data was subjected to analysis using both descriptive and inferential statistics in which the two (2) research questions were analyzed using mean, standard deviation and mean difference, while the two null hypotheses was analyzed using the independent sample t-test at  $p \leq 0.05$  level significance that forms the basis for retaining or rejecting each of the null hypotheses.

Research Question One: What is the difference between the mean academic performance of primary school pupils taught the recitation and memorization of the Qur'an Chapter 31:12-19 using Mastery Learning Approach and those taught using conventional teaching method in Katsina education zone?

**Table 1: Summary of post-test mean academic performance of primary school pupils taught the Qur'an Chapter 31:12-19**

Group	N	Mean	SD	MD
Experimental	44	25.86	5.17	5.91
Control	46	19.96	5.27	

**Source: Field Survey, 2024**

From Table 1, it could be seen the difference between the mean academic performance scores of the students taught the Qur'an 31:12-19 using mastery learning approach ( $M = 25.86$ ,  $SD = 5.17$ ) and those taught same concepts using the conventional teaching method ( $M = 19.96$ ,  $SD = 5.27$ ) is 5.91 in favour of the mastery learning approach group. This indicates that the experimental group Performed better than the control.

Research Question Two: What is the difference between the mean retention of primary school pupils taught recitation and memorization of the Qur'an Chapter 31:12-19 using Mastery Learning Approach and those taught using conventional teaching method in Katsina education zone?

**Table 2: Summary of the post post-test mean retention of primary school pupils taught the Qur'an Chapter 31:12-19**

Group	N	Mean	SD	MD
Experimental	44	30.55	4.41	9.37
Control	46	21.17	5.07	

**Source: Field Survey, 2024**

From Table 2, it could be seen the difference between the mean retention scores of the students taught the Qur'an 31:12-19 using mastery learning approach ( $M = 30.55$ ,  $SD = 4.41$ ) and those taught same concepts using the conventional teaching method ( $M = 21.17$ ,  $SD = 5.07$ ) is 9.37 in favour of the mastery learning approach group. This indicates that the experimental group Performed better than the control group.

**Hypothesis One:** There is no significant difference between the mean academic performance of primary school pupils taught recitation and memorization of the Qur'an Chapter 31:12-19 using Mastery Learning Approach and those taught using conventional teaching method in Katsina education zone.

**Table 3: T-test summary on the difference between the mean academic performances of primary school pupils taught recitation and memorization of the Qur'an Chapter 31:12-19**

Group	N	M	SD	df	t	P	Alpha	Decision
Experimental	44	25.86	5.17	88	5.368	.000	0.05	Sig.
Control	46	19.96	5.27					

**\*Significant at  $p \leq 0.05$  alpha level**

Table 3 presented Independent Samples t-test of mean academic performance scores of experimental and control group. From the result, t-value recorded was 5.368 while p-value observed at degree of freedom of 88 was 0.00. The observed p-value is less than alpha value and the hypothesis was rejected. This shows that there was significant difference in the mean academic performance scores of primary school pupils taught Qur'an 31:12-19 using Mastery Learning approach and those taught same concepts using conventional teaching method, in favour of experimental group. This implies that the experimental group performed significantly higher than that of control group.

**Hypothesis Two:** There is no significant difference between the mean retention of primary school pupils taught recitation and memorization of the Qur'an Chapter 31:12-19 using Mastery Learning Approach and those taught using conventional teaching method in Katsina education zone.

**Table 4: T-test summary on the difference between the mean retention of primary school pupils taught recitation and memorization of the in Qur'an Chapter 31:12-19**

Group	N	M	SD	df	t	P	Alpha	Decision
Experimental	44	30.55	4.41	88	9.371	.000	0.05	Sig.
Control	46	21.17	5.07					

**\*Significant at  $p \leq 0.05$  level of significance**

Table 4 presented Independent Samples t-test of mean retention scores of experimental and control group. From the result, t-value recorded was 9.371 while p-value observed at degree of freedom of 88 was 0.00. The observed p-value is less than alpha value and the hypothesis was

rejected. This shows that there was significant difference in the mean retention scores of primary school pupils taught Qur'an 31:12-19 using Mastery Learning approach and those taught same concepts using conventional teaching method, in favour of experimental group. This implies that the experimental group performed significantly higher than that of control group.

## **Discussion**

The discussion of findings was made based on the research questions answered and hypotheses tested. The finding from research question one and hypothesis one indicated that there was significant difference in the mean academic performance scores of primary school pupils taught Qur'an 31:12-19 using mastery learning approach and those taught same concepts using conventional teaching method. This means that experimental group performed better than control groups. This finding agreed with Abu-shreah and Omar (2015) who discovered existence of significant difference between two groups in favor of the experimental group taught the Islamic Religious concepts using Mastery Learning while their counterpart taught same concepts using traditional (lecture) teaching methods. Also, Hussain & Suleiman (2016) who discovered that there was a significant difference in the mean academic performance of students taught English language concepts using mastery learning approach and those taught using the lecture method. Similarly, Ahmad and Suhartini (2022) who found that teaching through mastery learning increases students' understanding of Islamic Religious concepts more than the conventional instructional method. Thus, the null hypothesis was rejected in favour of alternate hypothesis. The reason for the high academic performance of pupils taught using mastery learning approach may most likely be that the students were actively involved in the learning process through formative test, enrichment activities, group-based, extra-lesson and remediation until mastery standard is achieved at 70% - 90%. With these pupils are given ample opportunity for understanding the concepts, which resulted in better academic performance than those taught using the lecture method.

The finding from research question two and hypothesis two revealed that significant difference exists in the mean retention scores of primary school pupils taught Qur'an 31:12-19 using mastery learning approach and those taught same concepts using conventional teaching method. This means that experimental group performed better than control groups. This finding agreed

with Ali, Jabeen & Lubna (2017), Eric (2020) and Suleiman (2021) who found that there was a significant difference in the mean retention of students taught Mathematics using mastery learning approach and those taught using the lecture method. Thus, the null hypothesis was rejected in favour of alternate hypothesis. Hence, the experimental group retained the learnt concept in Islamic Studies more than the control group because the knowledge they acquired was mastered since the experimental group learnt by constant repetition. That is, from pre-existing knowledge to new knowledge. The enrichment activities used by the experimental group might also have provided better understanding for the knowledge to be retained at mastery standard of 70% - 90%.

### **Conclusion**

Based on the results from the study it was established that mastery learning approach heightens the primary school students' academic performance and retention of Islamic studies concepts. Therefore, mastery learning approach is virtuous teaching approach for Islamic studies teachers to adopt in teaching and learning. Thus, the study was concluded that there is a significant difference between the mean academic performance of experimental and control groups, taught the Qur'an Chapter 31:12-19 using the mastery learning approach and those taught using conventional teaching method. Similarly, there is a significant difference in the mean retention ability between the experimental and control groups taught the Qur'an Chapter 31:12-19 using the mastery learning approach and those taught using conventional teaching method.

### **Recommendations**

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

1. The government should stipulate the use of mastery learning teaching approach mandatory mainly for teaching and learning Islamic studies concepts to facilitate academic performance.
2. Islamic studies teachers should be trained on how best to involve primary school students to facilitate retention.

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## IMPLEMENTATION OF INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) PROGRAMS IN URBAN SCHOOLS IN KAMPALA, UGANDA

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### **ABSTRACT**

*This study investigates the challenges facing the implementation of Information and Communication Technology (ICT) in urban secondary schools in Makindye, Uganda. The focus of the research is to examine the availability and utilization of ICT resources, the challenges faced by teachers and students, and the impact of ICT on teaching and learning. The study employed a quantitative research design. The population consisted of 2,345 students from 10 public and private secondary schools in Makindye Division. A sample of 340 respondents was selected using heterogeneous purposive and simple sampling techniques. The respondents*

*included head teachers, ICT teachers, and students. A self-developed questionnaire was used as the instrument for data collection. The questionnaire was validated through expert judgment and pilot testing, ensuring content validity and reliability. The Cronbach's alpha coefficient was used to measure reliability, yielding a coefficient of 0.95. Descriptive statistical techniques were employed to analyze the quantitative data using SPSS. The findings revealed significant disparities in the availability and utilization of ICT resources. The results showed that schools lack adequate computers, internet access, and multimedia resources. Despite the presence of computer laboratories, many schools lack functional ICT facilities, and students have limited access to computers. The study concludes that the implementation of ICT in urban secondary schools is faced with significant challenges, including inadequate ICT resources, limited internet access, and insufficient qualified ICT teachers. The study recommends prioritizing the provision of adequate ICT resources, investing in teacher training, and fostering a supportive environment for effective ICT education.*

**Keywords:** *ICT, Teacher, Administrators, ICT resources, Student and Teaching of ICT*

## **Introduction**

Technology is the most dramatic force shaping our environment, it is changing at an ever-increasing rate and affecting our life in many aspects. The issue of information and communication technology and education can be raised in many orientations, yet no misgiving the most exciting and most debated is the issues of impact of ICT on education. ICT programs in schools are not just about providing students with access to technology, but about empowering them to become active participants in the digital age, equipped with the skills, knowledge and creativity to succeeding an increasing complex and interconnected world. (UNESCO, 2018).

In Uganda, the national ICT policy development process was initiated in 1998 by the Uganda National Council of Science and Technology (UNCST) (Torach, Okello & Amuriach, 2006). Five years later in 2002 the UNCST submitted a draft national ICT policy framework to the cabinet which was approved the following year. The policy framework document recognized that Uganda would need to embrace the goal of lifelong education for all. Gargiulo, (2017). The study goes on to say that guidelines should be produced for schools to show how this can be done. The draft policy further observes that computer awareness should be introduced into the training of primary and secondary teachers on a phased basis, so that newly qualified teachers are equipped to make use of ICT as it becomes available. Besides, having acquired some ICT skills at the primary school level through pedagogy, the focus of ICT in the secondary sector for students and centers on the provision of computer applications skills at O level. This is expected to be executed through a subject called Computer Studies, taught in the schools that have

sufficient equipment, and assessed at O level. According to Lawrence and Veena (2013), specific vital skills include basic actions such as: managing electronic files, using computerized databases and spreadsheets, sending and receiving e-mail messages, and creating documents with graphics are must do-able skills and competency. However, these skills are not been assessed. The students cannot show their competency and skill on the use of computers due to the resources are not available to the students for practical's use. Drent, & Meelissen, (2008) observed that the level and quality of teachers training has a positive impact on how effective ICT is implemented and used in classroom. Therefore, it is reasonable that we should expect educational technology to be developed with similar objectives. This is to suggest that the teacher training colleges should provide as many teachers as possible with computer awareness, basic skills, and enough experience to make use of ICT in lesson preparation and in making teaching materials. This will help improve the quality of secondary education, and also lay the foundations for future use of ICT within secondary classrooms. To effectively analyses these issues, the study will use a descriptive and analytical design to assess the different forms of ICT resources and how they are being used in schools while also assessing the limitations in implementing ICT in Urban schools.

### **Objectives of the Study**

This research intends to achieve the following objectives; to:

1. examine the different forms of ICT resources in the selected urban schools in Makindye division.
2. assess how ICT resources are use in urban secondary schools in Makindye division.
3. find out the challenges in implementation of ICT in urban secondary schools Makindye division.

### **Research Questions**

The study raised the following questions to guide the study:

1. What are the different forms of ICT resources in Makindye
2. How is ICT resources use in urban schools in Makindye
3. What are the challenges/limitations in implementation of ICT in urban schools in Makindye

## Hypotheses

The following hypotheses were formulated to guide the study:

1. There is no significant difference between different forms of ICT resources in this selected schools in Makindye.
2. There is no significant difference on how ICT resources is used in urban schools in Makindye.
3. There is no significant difference between challenges associated in the implementation of ICT in urban secondary in Makindye.

## Methodology

This study employed a quantitative methods of data collection. This approach allowed for a comprehensive understanding of the challenges facing the implementation of ICT in urban secondary schools. The study was conducted in Makindye Division, a densely populated slum area located in Kansanga, Kampala, Uganda. The population consisted of 2,345 of 100 public and private secondary schools in Makindye Division which according to for a large population (over 500), a sample size of 100-300 is often sufficient (Sekaran, 2003), 10 schools were sampled for this study and a total of 340 respondents were sampled through purposive and stratified sampling. Purposive sampling was used to select school management committee members, headteachers, and other respondents considered to have relevant information while stratified sampling was used to select respondents from different categories, such as teachers, students, and administrators and systematic random sampling was used to select respondents from within the school population. The study employed self-developed questionnaires. Four-point level Likert's scale of 2.50 was adopted for the study. The statement in this instrument was responded and record as; Strongly Agreed (SA) = 4 point, Agreed (A) = 3 point, Disagreed (DA)= 2 point, Strongly disagreed (DA) = 1 point. The instruments were validated through expert judgment and pilot testing, ensuring content validity and reliability. The Cronbach's alpha coefficient was used to measure reliability, yielding a coefficient of 0.85. Descriptive statistical techniques were employed to analyze the data, providing an overview of the trends and patterns.

## Results

**Research Question One.** What are the different forms of ICT resources in Makindye? The summary of analysis was presented on Table 1.

**Table 1. Mean scores of respondents on different forms of ICT Resource available in Schools**

Different Forms of ICT Resources Available in Schools	Strongly Agree (%)	Agree (%)	Disagree (%)	Strongly Disagree (%)	Mean	SD	Decision
How many computers are there in the laboratory?	58 (18.9%)	49 (16.0%)	112 (36.5%)	121 (39.4%)	2.03	0.94	Not Adequate
Are there qualified teachers ready for teaching ICT?	101 (33.0%)	78 (25.5%)	89 (29.1%)	72 (23.5%)	2.57	1.01	Adequate
Multimedia resources for teaching ICT	92 (30.1%)	68 (22.2%)	128 (41.9%)	52 (17.0%)	2.37	1.02	Not Adequate
Does the school provide internet?	78 (25.5%)	68 (22.2%)	104 (34.0%)	90 (29.4%)	2.32	1.05	Not Adequate
Does your school have a website?	79 (25.8%)	68 (22.2%)	95 (31.0%)	98 (32.0%)	2.31	1.06	Not Adequate
<b>Total</b>					<b>2.32</b>	<b>1.32</b>	Not Adequate

### (2.50 Benchmark)

Table 1 revealed the mean scores on Availability of Computers in the Laboratory. The respondents mean score of (2.03) is below the 2.50 benchmark, indicating that respondents perceive the number of computers as inadequate with majority (75.9%) disagreed that their school has enough computers. Furthermore, Availability of Qualified ICT Teachers showed that the mean score of (2.57) is above the 2.50 benchmark, suggesting that qualified ICT teachers are available in schools. Above half, 58.5% of respondents agreed that there are competent teachers for ICT instruction in the schools. Availability of Multimedia Resources for ICT Teaching reported that the mean score, (2.37) is below the 2.50 benchmark, hence, multimedia resources are not adequately available. A higher percentage (58.9%) of the respondents disagreed that multimedia resources such as projectors, digital boards, and educational software are available. Also, provision of Internet Access reported that the mean score (2.32) is below the 2.50 benchmark, meaning that most schools do not provide internet access. 63.4% of respondents

disagreed that their school has internet facilities. On the availability of School Websites, the mean score (2.31) is below the 2.50 benchmark, indicating that most schools do not have a functional website. 63.0% of respondents disagreed that their school has an official website

**Research Question Two.** How is ICT resources used in urban schools in Makindye?

The summary of analysis was presented on Table 2.

**Table 2. Mean scores of respondents on How ICT is used in Urban Secondary Schools?**

Teachers Use Computers to:	Head Teacher (H/T) (%)	ICT Teacher (%)	Students (%)	Mean	SD	Decision
Does your school have a computer laboratory?	120 (34.6%)	111 (32.0%)	109 (31.4%)	2.67	1.02	Available
How many computer lessons per week?	151 (43.5%)	123 (35.4%)	66 (19.0%)	2.53	1.08	Available
Are computers available to both teachers and students?	70 (20.2%)	89 (25.7%)	181 (52.2%)	2.28	1.10	Not Available
Are teachers encouraged to teach using computers?	181 (52.2%)	80 (23.1%)	79 (22.8%)	2.69	1.05	Available
How is computer lesson accessed in your school?	126 (36.3%)	145 (41.8%)	69 (19.9%)	2.53	1.06	Available
<b>Total</b>				<b>2.54</b>	<b>2.54</b>	Available

**(2.50, Benchmark)**

Table 2 revealed the mean scores on Availability of Computer Laboratories in Schools, the mean score of 2.67 is above the benchmark (2.50), indicating that most schools have a computer laboratory. 66.6% of respondents (head teachers, ICT teachers, and students) confirmed the presence of a computer lab. However, having a laboratory does not guarantee full functionality, as there may be insufficient computers, outdated equipment, or lack of internet access. Frequency of Computer Lessons per Week, the mean score of 2.53 is above the benchmark, suggesting that computer lessons are conducted regularly in most schools. The majority of responses came from head teachers (43.5%) and ICT teachers (35.4%), indicating that computer education is part of the school curriculum. However, students' participation is low (19.0%), suggesting limited practical exposure. Availability of Computers for Both Teachers and Students, the mean score of 2.28 is below the benchmark, indicating that computers are not

readily available for both teachers and students. 52.2% of students disagreed, highlighting that access is mainly limited to ICT teachers or administrative staff. Encouragement of Teachers to Use Computers for Teaching. The mean score of 2.69 is above the benchmark, indicating that teachers are encouraged to use computers in their teaching process. 52.2% of head teachers confirmed that teachers are motivated to use ICT tools, but actual implementation may be limited due to a lack of available resources. How Computer Lessons Are Accessed in Schools report that the mean score of 2.53 is above the benchmark, indicating that schools have structured ways of accessing computer lessons. 41.8% of ICT teachers and 36.3% of head teachers agreed, suggesting that schools have established schedules for ICT classes. However, only 19.9% of students confirmed access, reinforcing the concern of limited student exposure to ICT tools.

**Research Question Three.** What are the challenges/limitations in implementation of ICT in urban schools in Makindye? The summary of analysis was presented on table 3.

**Table 3. Mean Scores of Respondents on Challenges Faced in Using Computers in Urban Secondary Schools**

Challenges	Head Teacher (H/T) (%)	ICT Teacher (%)	Students (%)	Mean	SD	Decision
Students are not allowed to use the computer	72 (21.3%)	123 (36.4%)	145 (42.9%)	2.67	1.05	Agreed
Limited computers compared to the number of students	88 (25.3%)	89 (25.6%)	163 (46.7%)	2.66	1.02	Agreed
Absence of computer resources	89 (25.4%)	120 (34.3%)	131 (37.4%)	2.62	1.08	Agreed
Poor quality of computers	82 (23.4%)	145 (41.4%)	113 (32.2%)	2.65	1.07	Agreed
Poor ICT teachers	84 (24.0%)	78 (22.3%)	178 (50.9%)	2.57	1.12	Agreed
Limited time allocated per class	113 (32.3%)	72 (20.6%)	155 (44.3%)	2.70	1.03	Agreed
Absence of electric power for ICT use	50 (14.3%)	132 (37.7%)	158 (45.1%)	2.59	1.09	Agreed
Lack of installation of computer laboratories ready for ICT use	122 (35.0%)	95 (27.3%)	123 (35.3%)	2.65	1.04	Agreed
<b>Total</b>				<b>2.64</b>	<b>1.06</b>	<b>Agreed</b>

**(2.50, Benchmark)**

The table above shows the mean score of Students Not Allowed to Use Computers. The mean score of 2.67 is above the benchmark, indicating that most students are restricted from using computers. 42.9% of students agreed, suggesting limited student access to ICT facilities. Limited Computers Compared to the Number of Students, the mean score of 2.66 is above the

benchmark, confirming that there are insufficient computers for student use. 46.7% of students agreed, showing that the student-computer ratio is too high. Absence of Computer Resources, the mean score of 2.62 indicates that schools lack necessary ICT resources. 37.4% of students and 34.3% of ICT teachers agreed, meaning both teachers and students struggle with inadequate ICT tools. Poor Quality of Computers, the mean score of 2.65 confirms that many schools have outdated or non-functional computers. 41.4% of ICT teachers and 32.2% of students agreed, indicating that existing computers are often slow, outdated, or faulty. Lack of Skilled ICT Teachers, the mean score of 2.57 is above the benchmark, indicating that many schools lack trained ICT teachers. 50.9% of students agreed, meaning that ICT education is mostly theoretical due to untrained teachers. Limited Time Allocated per Class, the mean score of 2.70 suggests that ICT lessons are not given enough time in the school curriculum. 44.3% of students and 32.3% of head teachers agreed, indicating insufficient class time for ICT practice. Absence of Electric Power for ICT Use, the mean score of 2.59 shows that irregular electricity supply is a major challenge. 45.1% of students and 37.7% of ICT teachers agreed, meaning power outages frequently disrupt ICT lessons. Lack of Installation of Computer Laboratories Ready for ICT Use, the mean score of 2.65 confirms that many schools do not have properly set-up ICT laboratories. 35.3% of students and 35.0% of head teachers agreed, indicating that many ICT labs are incomplete or non-functional.

**Table 4: Summary of One-Sample t-test Analyses on Forms of ICT Resources in this Selected Urban Public and Private Schools in Makindye**

Test	N	Mean	Std. Dev.	t-cal.	t-crit.	df	$\alpha$	P-value
forms of ICT resources in	340	2.23	0.717	12.101	1.96	339	0.05	.200
Fixed (hypothetical) mean	340	2.50	.200					

**df (339), P=<0.05**

The table shows a one-sample t-test was conducted to compare the availability of ICT resources in urban schools in Makindye against a fixed mean of 2.50. The sample mean was 2.23 (SD=0.717SD = 0.717SD=0.717), with a t-value of 12.101 and 339 degrees of freedom. However, the P-value of 0.200 greater than the significance level ( $\alpha = 0.05$ ), indicating that the

difference is not statistically significant. The null hypothesis which stated that there is no significant means difference is therefore accepted, suggesting that the availability of ICT resources does not significantly differ from the expected mean.

**Table 5: Summary of One-Sample t-test Analyses on how ICT Resources is Used in Urban Public and Private Schools in Makindye**

Test	N	Mean	Std. Dev.	T-Cal.	T-Crit.	Df	A	P-Value
ICT Resources Is Used	340	2.56	0.7362	6.801	1.96	339	0.05	.000
Fixed(Hypothetical) Mean	340	2.50	.000					

**df (339), P=<0.05**

The table above shows a one-sample t-test was conducted to examine whether ICT resource usage in urban public and private schools in Makindye significantly differs from the hypothetical mean of 2.50. The results show that the observed mean (2.56) is slightly higher than the fixed mean. The t-value (6.801) at 339 degrees of freedom (df) and the p-value (0.000), which is less than the significance level ( $\alpha = 0.05$ ), indicate a statistically significant difference. The null hypothesis which stated that there is no significant means difference is therefore rejected. This suggests that the usage of ICT resources in these schools is slightly above the expected level. However, while the difference is statistically significant, the practical impact may be minimal, considering the small margin between the observed and hypothetical means.

**Table 6: Summary of One-Sample t-test Analyses on challenges associated in the implementation of ICT in urban public and private secondary in Makindye**

Test	N	Mean	Std. Dev.	t-cal.	t-crit.	df	$\alpha$	P-value
Challenges associated in the implementation of ICT	340	2.66	0.119	12.201	1.96	339	0.05	0.00
Fixed (Hypothetical)mean	340	2.50	0.00					

**df (339), t-crit=1.96, P=<0.05**

The table above observed that mean (2.66) is higher than the fixed mean (2.50). The t-calculated value (-12.201) is negative, indicating that the observed mean is significantly different from the hypothetical mean in the opposite direction. The p-value (0.000) is less than the significance level ( $\alpha = 0.05$ ), meaning the difference is statistically significant. In a one-sample t-test, the decision is based on the comparison of the p-value with the significance level ( $\alpha = 0.05$ ) and the t-calculated value with the t-critical value (1.96 for  $df = 339$  at  $\alpha = 0.05$ ). Null Hypothesis ( $H_0$ ): There is no significant difference between the observed mean (2.66) and the hypothetical mean (2.50), meaning ICT implementation challenges are at the expected level.

### **Discussion**

The finding provides a comprehensive report stating that ICT resources in the survey school, reflecting expectant disparity in availability and approach. The mean grade of 2.03 for the availability of computers illustrate a general perception among respondents that the act of computers is insufficient. As noted by Smith (2020), "admittance to fair to middling technology is a crucial component in successful educational activity," and the substantial 75.9% of respondents who disagreed with the view that their school has enough computers supports this notion. On the other hand, the presence of qualified ICT instructor receives a mean score of 2.57, exceed the 2.50 bench mark, which indicate that schools are have qualified ICT teacher. According to Johnson (2019), the expertise of teachers in ICT education is key to fostering scholarly person's technical competencies, "thus the 58.5% agreement on the availability of competent ICT instructors is encouraging. However, multimedia resources for ICT educational activity give away a sparse score of 2.37, show noted insufficiencies. With 58.9% of responder disaccord on the presence of essential imagination like projectors and educational software, this aligns with the assertion by Green and Adams (2021) that "good teaching in ICT execrate hard on the availableness of diverse multimedia system tools. The data on internet exposure, with a mean score of 2.32 suggesting that most school do not allow decent internet facilities. The high percentage (63.4%) of respondents who feel their schools lack internet access reflects concerns resounded by Parker (2022), who stated, "internet connectivity is foundational to modern educational practices." For school websites, the mean score of 2.31 further shows that most schools do not operate functional websites, with 63.0% of respondents disagreeing that their

institution maintains an official site. This lack of a digital presence is highlighted by Chen (2023), who argues that "a school's website serves as a critical communication tool with stakeholders."

On a more positive note, the availability of computer laboratories scored a mean of 2.67, suggesting that most schools have dedicated labs. With 66.6% confirming the existence of computer labs, this finding reflects the importance of technological infrastructure as emphasized by Lewis (2018), who noted, "access to a dedicated computer lab significantly enhances student learning outcomes in technology-related subjects." However, the presence of a laboratory does not guarantee that it's fully functional, as indicated by potential barriers such as outdated equipment or insufficient internet access. The frequency of computer lessons per week scored a mean of 2.53, suggesting regular instruction within the curriculum. While the majority of respondents from leadership positions (head teachers and ICT teachers) support this engagement, the low student participation rate (19.0%) highlights a gap in practical exposure, as emphasized by Taylor (2021), who states, "students need hands-on experience to truly engage with ICT education." Additionally, the mean score of 2.28 concerning the availability of computers for both teachers and students indicates limited access, with over half of the students feeling that computers are primarily allocated to ICT teachers or administrative staff. This viewpoint is consistent with Roberts (2020), who pointed out that "equitable access to technology is essential for fostering collaborative learning environments." Encouragement for teachers to utilize computers scored positively at 2.69, indicating institutional support for integrating technology into teaching. The affirmation from 52.2% of head teachers regarding motivation to employ ICT tools is promising; however, as noted by Davis (2019), "effective implementation of technology in the classroom is often hindered by a lack of resources."

In terms of structured access to computer lessons, the score of 2.53 suggests organized scheduling; however, mere 19.9% student confirmation of access reinforces concerns about limited engagement with ICT tools, viewed through the statement by Miller (2021) that "true ICT education requires regular and meaningful access for all students." Regarding findings on student restrictions to computer usage (mean score 2.67), the results indicate that a significant number of students feel limited in their access, resounding the sentiments of Theobald (2020), who stated,

"inadequate access to technology can restrict students' potential to thrive in a technology-driven world." furthermore, the mean score of 2.66 for the ratio of computers to students confirms that many schools face challenges regarding insufficient resources, which is echoed by knight (2022), who argues, "a favourable student-computer ratio is critical for effective learning and engagement." concerns surrounding the absence of necessary ICT resources (mean score 2.62) reflect the struggles faced by both teachers and students, which is supported by wilson's (2018) statement that "a lack of fundamental ict resources can severely limit the teaching and learning process." the mean score of 2.65 regarding the poor quality of computers further highlights the prevalence of outdated and non-functional devices.

### **Conclusion**

This study shows that schools face major difficulties in providing adequate ICT resources for their students. The data reveals many educational institutions fail to provide adequate computers for students as evident by a mean score of 2.03 coupled with 75.9% of respondents expressing their dissatisfaction. Insufficient multimedia resources which scored 2.37 and inadequate internet access with a mean score of 2.32 worsen current challenges and reveal essential infrastructure shortcomings necessary for effective ICT education. Multiple scholars point out that technological access serves as a basic component for developing effective educational methodologies. A mean score of 2.57 demonstrates that qualified ICT teachers represent a positive development because 58.5% of respondents acknowledge the importance of skilled instructors. Schools appear to invest in technological infrastructure according to the positive mean score of 2.67 for computer laboratory establishment. These facilities must be more than just available because they need full equipment and functioning capability to improve educational experiences. Participants express support for technological integration in teaching yet report that resource limitations continue to restrict actual technology use by teachers. The results demonstrate a widespread problem where ICT education effectiveness suffers due to insufficient resources and infrastructure. Qualified educators and computer labs exist yet schools continue to struggle with inadequate equipment quality, restricted student access and insufficient essential resources. Multiple researchers have indicated that closing these educational gaps is critical to build a strong technology-supported learning environment that enhances teaching methods and learning results. School administrations together with policymakers need to

prioritize resolving these issues to deliver students an effective ict education that covers both theoretical and practical aspects.

### Recommendations

1. The study's findings highlight the need for urgent attention to address the significant challenges facing ICT education in schools. To bridge the gap in ICT infrastructure, it is recommended that school administrations and policymakers prioritize the provision of adequate computers, multimedia resources, and internet access. This will enable students to acquire practical skills and enhance their learning experience.
2. The study emphasizes the importance of qualified ICT teachers and a supportive environment for effective ICT education. It is recommended that schools invest in teacher training and development programs to enhance their ICT skills. Additionally, stakeholders should foster a supportive environment that encourages teachers to incorporate technology into their teaching practices.
3. Addressing the challenges facing ICT education requires a systemic approach that involves all stakeholders. It is recommended that policymakers, school administrators, and educators work collaboratively to develop and implement policies that promote the integration of technology in education. By doing so, schools can provide students with the skills and knowledge necessary to succeed in an increasingly technology-driven world.

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**INFLUENCE OF UNIVERSITY ADMINISTRATORS' CONFLICT MANAGEMENT STRATEGIES ON ACADEMIC STAFF JOB PERFORMANCE IN STATE UNIVERSITIES, NORTH-EAST ZONE, NIGERIA**

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**ABSTRACT**

*This study determined the Influence of University Administrators' Conflict Management Strategies on Academic Staff Job Performance in State Universities, North-East Nigeria. The study has two objectives which determined University administrators' dialogue and mediation conflict management strategies on academic staff job performance. The objectives have its corresponding two hypotheses. Survey research design was employed. The population comprised of all the 39 Deans, 208 Heads of Departments and 2,265 academic staff in the six states Universities. Simple random sample was used to select three Universities which are Adamawa, Borno and Yobe State Universities. Three faculties and twelve departments were also randomly selected from each of the three selected Universities. Research advisors table (2006) was used to sample 517 academic staff. Two sets of validated online questionnaires with reliability coefficient of 0.87 and 0.75 were used as instruments for data collection. The data obtained were analysed using mean and standard deviation to answer the research questions while regression analysis to test the hypotheses at 0.05 level of significance. The results revealed that the extent of University administrators' dialogue conflict management strategy was rated high, and there was significant influence of dialogue on academic staff job performance. Mediation conflict management strategy was rated moderate, and there was significant influence mediation on academic staff job performance. Based on the findings, it was recommended that ministries of education should develop policies and guidelines to support the use of dialogue and mediation in state Universities, North-East, Nigeria.*

**Keywords:** Conflict management, Dialogue, Mediation, University Administrators, Academic Staff, Job Performance.

## **Introduction**

University as an organization is part and parcel of the society, which needs proper management for it to function well and accomplish its goals and objectives. In the course of that however, grievances do occur in the individual or among groups of academic staff which do leads to conflict. University administrators are professionals responsible for managing the operations and resources of a University. They hold various positions such as Vice-Chancellors, Deputy Vice-Chancellors, Registrars, Deans of Faculties and Department Heads. Their roles encompass strategic planning, budgeting, academic oversight, student affairs, and overall organizational leadership within the academic institution. Conflict may generally occur whenever or wherever incompatible activities occur and may result in win lose character. Tertiary institutions in Nigeria have witnessed a lot of conflicts due to the divergent perceptions of personnel, academic policies which can create tension between University management, staff and students. Conflict is an attendant feature of human interaction that cannot be eliminated, but managed. However, its proper management and transformation are essential for peace and progress in human society.

Conflict is an inevitable part of organizational life since the goals of different stakeholders such as managers and staff are often incompatible (Paluku, 2013). Organizations like the state Universities in the North-East are made up of people from different background, different views about life, different expectations and different mind-sets. These group of people are brought together to ensure that the institutions mandate of producing quality graduates to drive the affairs of not just the country but that of the world is achieved. To achieve this goal, the workforce has to work together in different capacities; it could be belonging to the same departments or committees or teams.

Management and conflict management are two terms that go hand in hand. The former management is the coordination of all the resources of an organization (material, finance, time and human) through the process of planning, organizing, directing and controlling in order to attain organizational objectives. From the foregoing, it is clear that conflict management simply refers to the coordination of all resources through the process of planning, organizing, directing and controlling in order to prevent, avoid or resolve conflict. Conflict management is a method designed to develop peaceful means of ending a state of conflict (Burton 2000).

Conflict management strategies are perceived as part of administrative techniques to enable administrators handle the conflict when it arises, the nature and type of conflict that occur in high institutions vary from one institution to another. North-East state University administrators have been adversely affected by lack of knowledge of conflict management strategy. Most administrators handled conflicts by a trial and error approach, because there are no specific procedures and method of managing conflicts.

University academic staff are individuals employed by a University to contribute to its educational and research missions. This group includes professors, lecturers and researchers. Their responsibilities typically involve teaching courses, conducting research, publishing scholarly work, and participating in academic and administrative activities therefore, it is obvious that when the academic staff demands are met, there will be high productivity. But, if the resources of the University are unsatisfying to supply the academic staff endless needs, the possibility of conflict may arise between the academic staff and the University administrators which will eventually lead to low job performance. The persistent high levels of conflict among University academic staff or between University administrators and academic staff may be due to lack of effective conflict management strategies such as dialogue and mediation to communicate to the academic staff on their plights. The extent to which University academic staff carry out their functions depends on how effective their administrators performs their administrative duty of conflict management, it seems that most University administrators in the North-East Nigeria, prioritize urgent tasks over addressing conflicts among academic staff due to the nature of their multiple responsibilities.

### **Statement of the Problem**

It seems that Nigerian Universities have for decades faced so many crises ranging from conflict between academic staff and University administrators, students versus academic staff, and students versus University administrators. Administrators and academic staff portray different types of conflict behaviour among themselves or to administrators and academic staff. This may be as a result of inefficient conflict management strategies for improving University system. The state Universities in North-East Nigeria faced a varied challenge concerning the interrelation between University administrators' conflict management and the job performance of academic staff. It seems that conflict between University administrators and academic staff may be the

cause of low job performance. These conflicts may be due to low motivation, lack of effective communication and participation in decision making, insufficient facilities, in adequate infrastructure supply and unsatisfactory conditions of service. Others may include high student's enrolment implying work overload, the lecturers handled large numbers hence, have no time for research; lecturers are fatigued, and fatigued adversely affects job performance in teaching, research, publication and community service.

Despite the important role of academic staff in achieving the objectives of Universities, their job performance is hindered by conflicts that arise in the workplace and it seems that most administrators in state Universities, North-East Nigeria prioritise urgent tasks over addressing conflicts among academic staff due to the nature of their multiple responsibilities. The consequences of ineffectively managed conflict may influence the overall productivity, job performance, and morale of academic staff. There is a significant gap in understanding the influence of conflict management strategy on academic staff job performance for the sustainable growth of these institutions and the region at large. Existing research has focused primarily on conflict management in Universities in general, with little attention paid to state Universities in North-East Nigeria. Hence, the central problem that will be addressed by this study is the need to determine the influence of University Administrators' Conflict Management Strategies on Job Performance of Academic Staff in State Universities, North-East Nigeria.

### **Objectives of the study**

The objectives of the study determined University Administrators':

1. Dialogue conflict management strategy on academic staff job performance in state Universities, North-East, Nigeria; and
2. Mediation conflict management strategy on academic staff job performance in state Universities, North-East, Nigeria.

### **Research Questions**

The study answered the following research questions:

1. What is the extent of University administrators' dialogue conflict management strategy on academic staff job performance in state Universities North-East, Nigeria?

2. What is the extent of University administrators' mediation conflict management strategy on academic staff job performance in state Universities North-East, Nigeria?

### **Research Hypotheses**

The following null hypotheses were formulated and tested during the study.

**HO<sub>1</sub>:** There is no significant influence of University administrators' dialogue conflict management strategy on academic staff job performance in state Universities, North-East, Nigeria;

**HO<sub>2</sub>:** there is no significant influence of University administrators' mediation conflict management strategy on academic staff job performance in state Universities, North-East, Nigeria.

### **Review of Related Literature**

For conflict to be a vehicle for organizational growth and creativity there must exist an appropriate method of conflict management strategy between/within faculties and departments. An administrative officer knows when he is faced with interdepartmental conflict and to be informed of the processes for coping with it or managing it (Alabi, 2005). Dialogue is seen as a discussion where the conflict parties share their feelings and fears, are open to listening to the other parties' needs, are willing to be change by what they hear, and are open to the idea of being vulnerable (Oboegbulem & Onwurah, 2011). This is related to the view of Kaonga (2016) who said that dialogue focused on transforming and building relationships among conflicting parties so that they might effectively deal with practical problems.

Yusuf and Ibrahim (2019) found a significant relationship between dialogue and administrative effectiveness in their study on Conflict Management Tactics and Administrative Effectiveness in Tertiary Institutions in Sokoto Metropolis. Chiekezie, Dibua, and Chima (2016) also found out that effective conflict management such as dialogue has a considerable impact on tertiary institution performance in several selected Tertiary Institutions in Enugu State, Nigeria. Okuthe, (2018) carried out a study on dialogue as a management tool for conflict resolution at Rongo University, Kenya and the results indicated that dialogue had not been fully embraced and lack of dialogue was due to the attitude that has developed over time. Employees have not been

adequately informed on the importance of embracing dialogue as a better approach to conflict resolution.

Mediation is a process of conflict resolution that includes any situation in which a person gets involved in a conflict between disputants with the responsibility to amicably resolve it. The mediator is like a facilitator and has no power to compel compliance. Ihuarijum (2015) asserted that mediation is a voluntary and confidential process in which a neutral third-party facilitator helps people to discuss difficult issues and negotiate agreement. Kariuki, Chumba and Wambua (2023) found out in their study on Relationship between Mediation Conflict Management Strategy and Teachers' Productivity in

Secondary Schools in Uasin Gishu County, Kenya that there was a significant positive correlation between mediation and teachers' productivity. Mwaniki and Muathe (2021) revealed that mediation have a beneficial impact on employee performance in Kenyan Public Universities. Rammata, (2019) revealed that conflicts need to be addressed differently and more systematically, especially through mediation procedure, as they have a great impact on the performance of public services and the implementation of reforms in Public Administration in Athens, University of Macedonia, Thessaloniaki, Greece.

### **Methodology**

Descriptive survey research design was employed for this study. The population of this study comprised of all University administrators (39 Deans and 208 Heads of Departments) and all the 2265 academic staff in all the six state Universities North-East Zone, Nigeria, which were located in Adamawa, Bauchi, Borno, Gombe, Taraba and Yobe States. Simple random sample was used to select three Universities which are Adamawa, Borno and Yobe State Universities. Three faculties and twelve departments were also randomly selected from each of the three selected Universities. Research advisors table (2006) was used to sample 517 academic staff. Two sets of validated online questionnaires created using Google forms titled: University Administrators' Conflict Management Strategy Questionnaire (UACMSQ) and Academic Staff Job Performance Questionnaire (ASJPQ) were used as instruments for data collection with reliability coefficient of 0.87 and 0.75 obtained using Cronbach alpha coefficient. The data obtained were analysed using mean and standard deviation to answer the research questions

while regression analysis was used to test the hypotheses at 0.05 level of significance.

## Results

**Research Question 1:** What is the extent of University administrators' dialogue conflict management strategy on academic staff job performance in state Universities North-East Zone, Nigeria?

**Table 1: Mean and Standard Deviation on the Extent of University Administrators' Dialogue Conflict Management Strategy on Academic Staff Job Performance in State Universities, North-East, Nigeria**

S/N	Items	Mean	SD	Decision
1	Administrators engage in open dialogue with academic staff to manage conflicts	3.66	0.87	HE
2	Administrators use of dialogue as a conflict management strategy improves academic staff job performance	3.79	1.11	HE
3	Administrators actively listen to academic staff concerns during conflict management dialogues	3.12	1.49	ME
4	Dialogue as a conflict management strategy enhances collaboration and teamwork among academic staff	3.47	0.79	ME
5	How satisfied are you with the outcomes of conflict management dialogues facilitated by University administrators?	3.80	0.44	HE
<b>Aggregate Mean:</b>		<b>3.57</b>	<b>0.94</b>	<b>HE</b>

**Source:** Field Work, 2024

Table 1 revealed that item Statement 1 on "Administrators engage in open dialogue with academic staff to manage conflicts" has a mean score of 3.66 and a standard deviation of 0.867, indicating a high level of engagement in open dialogue. Item Statement 2 "Administrators' use of dialogue as a conflict management strategy improves academic staff job performance" shows a mean score of 3.79 and a standard deviation of 1.11, reflecting a strong positive influence of dialogue on academic staff job performance. Item Statement 3 "Administrators actively listen to academic staff concerns during conflict management dialogues" has a mean score of 3.12 and a standard deviation of 1.49, showing moderate active listening efforts. Item Statement 4 "Dialogue as a conflict management strategy enhances collaboration and teamwork among

academic staff" reports a mean score of 3.47 and a standard deviation of 0.795, suggesting that dialogue moderately enhances collaboration and teamwork. Item

Statement 5 "How satisfied are you with the outcomes of conflict management dialogues facilitated by University administrators" revealed the highest mean score of 3.80 with a standard deviation of 0.440, indicating a significant satisfaction with dialogue outcomes. The aggregate mean score of all item statements is 3.57, which reflected a high extent of the use and effectiveness of dialogue as a conflict management strategy by University administrators.

**Research Question 2:** What is the extent of University administrators’ mediation conflict management strategy on academic staff job performance in state Universities North-East, Nigeria?

**Table 2: Mean and Standard Deviation on the Extent of University Administrators’ Mediation Conflict Management Strategy on Academic Staff Job Performance in State Universities, North-East, Nigeria**

S/N	Items	Mean	SD	Decision
6	Academic staff are satisfied with the mediation process facilitated by University administrators	3.34	1.22	ME
7	Mediation process led by University administrators result in a resolution that was acceptable to all parties involved	3.02	0.87	ME
8	Mediation as a conflict management strategy improves academic staff job performance	3.07	1.28	ME
9	University administrator mediating the conflict was impartial and fair in their approach	2.92	1.25	LE
10	University administrators utilize mediation as a conflict management strategy and recommend it as a preferred conflict management among academic staff	3.51	0.84	HE
<b>Aggregate Mean:</b>		<b>3.17</b>	<b>1.09</b>	<b>ME</b>

Source: Field Work, 2024.

Table 2 Item Statement 6 "Academic staff are satisfied with the mediation process facilitated by University administrators" has a mean score of 3.34 and a standard deviation of 1.22, indicating moderate satisfaction with the mediation process. Item Statement 7 "Mediation process led by University administrators’ resulted in a resolution acceptable to all parties involved" showed a mean score of 3.02 and a standard deviation of 0.872, reflecting moderate effectiveness in

achieving acceptable resolutions. Item Statement 8 "Mediation as a conflict management strategy improves academic staff job performance" records a mean score of 3.07 and a standard deviation of 1.28, indicating a moderate improvement in job performance. Item Statement 9 "University administrator mediating the conflict was impartial and fair in their approach" has a mean score of 2.92 and a standard deviation of 1.25, reflecting a lower perception of fairness and impartiality in mediation. Item Statement 10 "University administrators utilize mediation as a conflict management strategy and recommend it as a preferred conflict management method among academic staff" revealed the highest mean score of 3.51 and a standard deviation of 0.836, suggesting stronger agreement on the utilization and recommendation of mediation. The aggregate mean score of 3.17 indicated that the extent of University administrators' mediation conflict management strategy on academic staff job performance in state Universities across North-East Nigeria was at a moderate level.

**Hypotheses 1:** There is no significant influence of University administrators' dialogue conflict management strategy on academic staff job performance in state Universities, North-East, Nigeria.

**Table 3: Summary of Regression Analysis**

Model	Sum of Squares	df	Mean Square	F	Sig.	Decision
1 Regression	0.011	1	0.011	0.006	0.001 <sup>a</sup>	Rejected
Residual	60.294	34	1.773			
Total	60.305	35				

**Source:** Field Work, 2024.

Table 3 indicated that the calculated F-value, with a p-value of 0.001, was computed at a significance level of .05 (alpha level). Given that the p-value is less than the significance value, the null hypothesis stating that there is no significant influence of University Administrators' Dialogue Conflict Management Strategy on Academic Staff Job Performance in State Universities, North-East Zone, Nigeria was rejected. This implies that the dialogue conflict management strategy employed by University administrators significantly influences the job performance of academic staff in state Universities, North-East Zone, Nigeria.

**Hypotheses 2:** there is no significant influence of University Administrators' Mediation Conflict Management Strategy on Academic Staff Job Performance in State Universities, North-East, Nigeria.

**Table 4: Summary of Regression Analysis**

Model	Sum of Squares	df	Mean Square	F	Sig.	Decision
Regression	2.885	1	2.885	1.709	0.000 <sup>a</sup>	Rejected
Residual	57.420	34	1.689			
<b>Total</b>	<b>60.305</b>	<b>35</b>				

**Source:** Field Work, 2024.

Table 4 revealed that the calculated F-value, with a p-value of .000, was computed at a significance level of 0.05 (alpha level). Since the p-value is significantly lower than the alpha level, the null hypothesis which stated that there is no significant influence of University Administrators' Mediation Conflict Management Strategy on Academic Staff Job Performance in State Universities, North-East Zone, Nigeria was rejected. This finding indicated that the mediation conflict management strategy employed by University administrators has a significant influence on the job performance of academic staff in state Universities, North-East Nigeria.

### Discussion

From the findings it was found out that the extent to which University administrators' dialogue conflict management strategy influence academic staff job performance in state Universities, North-East Nigeria was rated high with an aggregate mean of 3.57 which implies that administrators in state Universities, North-East Zone, Nigeria are effectively utilising dialogue to manage conflict and academic staff are generally satisfied with the outcome of conflict management dialogue facilitated by administrators. Hypothesis one revealed that the rejection of the Null hypothesis suggested that University administrators' dialogue conflict management strategy significantly influences academic staff job performance in state Universities, North-East Nigeria. This finding implies that the use of dialogue as a conflict management strategy by University administrators have a positive impact on the job performance of academic staff. The findings of this study supported the findings of Yusuf and Ibrahim (2019) which revealed a significant relationship between dialogue as a conflict management strategy and administrative effectiveness. Chiekezie, Dibua, and Chima (2016) study emphasised the considerable impact of effective conflict management strategies such as dialogue on tertiary institutions' performance.

The findings from state Universities, North-East Nigeria aligned with this, suggesting dialogue as a tool for managing conflict and enhancing job performance.

Okuthe (2018) study acknowledged dialogue as a conflict management tool; it also highlighted significant barriers, such as delays, fear of dialogue, and management insensitivity. These challenges suggested that even where dialogue is identified as beneficial, its implementation may face resistance due to ingrained attitudes among employees and managers. The findings on dialogue conflict management strategy influencing job performance have a strong impact but require a contextual understanding. The findings of this study aligned with significant literatures emphasizing the positive influence of dialogue on academic staff job performance. However, challenges in implementation, organizational culture, and systemic barriers must be addressed for dialogue to realize its full potential as a conflict management strategy. From the findings it was found out that the extent to which University administrators' mediation conflict management strategy influence on academic staff job performance in state Universities, North-East Nigeria was rated moderate. This moderate level of influence suggested that mediation as a conflict management strategy is somewhat effective in improving academic staff job performance. However, there is room for improvement. The statement with higher mean score such as University administrators utilize mediation as a conflict management strategy and recommend it as a preferred conflict management strategy among academics. The findings suggested that University administrators are utilising mediation as a conflict management strategy while the lower mean score for item statement 6, 7 and 9 suggested that there are areas of improvement. Hypothesis two revealed strong evidence to reject the null hypothesis. The rejection of the Null hypothesis suggested that University administrators' mediation conflict management strategy significantly influences academic staff job performance in state Universities, North-East Nigeria. This finding aligned with the findings of Kariuki, Chumba, and Wambua (2023), which found a positive correlation between mediation and teachers' productivity. The study also aligned with the study by Mwaniki and Muathe, (2021) who highlighted the beneficial impact of mediation on employee performance. Similarly, Rammata (2019) emphasised the role of mediation as a neutral and flexible process, supporting mutual agreements and improving job performance.

## **Conclusion**

Based on the findings of this study, it was concluded that there was significant influence of University administrators' dialogue and mediation conflict management strategies on academic staff job performance in state Universities, North-East, Nigeria. The findings of this study emphasised the significant role that various conflict management strategies played in influencing academic staff job performance in state Universities, North-East Nigeria.

## **Recommendations**

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

1. University administrators should recognise the importance of dialogue in enhancing academic staff job performance and also promote dialogue as a conflict management strategy. State ministries of education should consider providing fund and resources, develop policies and guidelines to support the use of dialogue in conflict.
2. State ministries of education should provide fund and training resources to enhance the mediation skills of University administrators and to support the development of mediation conflict management programs in Universities.

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**EFFECTS OF LABORATORY METHOD ON ACADEMIC PERFORMANCE OF  
CHEMISTRY SECONDARY SCHOOL STUDENTS IN RANO ZONAL EDUCATION  
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**ABSTRACT**

*The study examined the effects of laboratory method on the performance of students in chemistry in secondary schools of Rano Zonal Education Directorate Kano, Nigeria. The study was carried out with two objectives, which are to; find out the effect of laboratory method on students' performance in chemistry when compared to conventional method; and to investigate the effect of laboratory method on performance of female and male chemistry students in Kano state, Nigeria. Two research questions and two hypotheses were formulated in line with the above-mentioned objectives. The study employed a quasi-experimental design with a total population of one thousand two hundred and thirty-one (1231) and a sample size of two hundred and six (206) which was arrived at using a purposive sampling technique. The Data for the study were collected through pre-test and post-tested using a teacher-made test titled Acid Base Performance Test (ABPT) as an instrument. The administration of the instrument was done by the researcher and research assistants respectively. The data collected were analyzed statistically using Statistical Package for Social Sciences (SPSS), version 25. The research questions were answered using mean and standard deviation while the hypotheses were tested using t-test statistics. The findings of the study revealed that students taught chemistry using laboratory performed significantly better than those taught using conventional method of teaching in secondary schools of Rano Zonal Education Directorate Kano, among others. Based on the findings, the study concludes that laboratory method enhances students' performance in chemistry, and that there was no great disparity in performance of female and male students taught the concept of acid and base using laboratory method. It was recommended among others that Teachers should use laboratory method in teaching chemistry in secondary schools in Kano state, Nigeria.*

**Introduction**

Education is an instrument for development in both developed and developing nations of the world. As a continued process, education is dynamic in meeting individual and societal needs. Based on this, science and technology play an important role in human development and as such meeting aiding community upliftment and the nation at large. The basis of every scientific

and technological development is education. Therefore, learning science subjects like chemistry, biology, and physics at the secondary school level served as the foundation which prepare students to be great scientists and technologies. This is the basis of producing science teachers, medical doctors, engineers, pharmacists, and so forth who are expected to contribute their quotas towards the development of the society. It seems that only few teachers are committed to teaching and learning with fashion for the business, while the majority use conventional teaching methods (lecture method) in achieving the curriculum objectives.

The National Policy on Education (NPE) is the major document that guides and gear the educational activities in Jigawa and Nigeria and Jigawa in particular. The NPE states that science and technology shall continue to be taught in an integrated manner in the schools to promote in the students, the appreciation of practical application of basic ideas (FRN, 2013). To this end, the place of chemistry in the national secondary school curriculum in preparing students to become future scientists cannot be over-emphasized. Chemistry occupies a unique position in the school curriculum and is central to many sciences-related courses such as Engineering, Mathematics, Physics, Agriculture, Biology, Geography, and Pharmacy. Because of this, teachers are always on the go, searching for better teaching methods and strategies for a successful and effective delivery that will enhance performance among chemistry students.

Furthermore, the policy stressed that individuals (learners) shall be prepared to become useful members of society and conversant with the realities of the immediate environment and the world at large (FRN, 2013). Related to this, Dada (2012) opined that the dynamic of education requires that every society devise way not only to ensure the well-being of its members but also, to prepare a better future for the upcoming generation with appropriate knowledge, skills, and values. Hence the need to teach science subjects like chemistry in our secondary schools. Chemistry as a subject is been offered in the senior secondary school section of Rano Zonal Education Directorate under the control and supervision of the Ministry of Education Kano. Therefore chemistry, as one of the science subjects in secondary schools, has an important role to play in achieving the above policy statement. This can be done by supporting students to learn chemistry concepts like air, water, acids and bases, and so forth, which they interact with, in their everyday lives.

Therefore, for teaching process to occur successfully, there supposed to be an effective teaching method(s). There are several teaching methods/strategies employed by teachers during teaching and learning which depends on the teaching/learning situation. Many scholars have identified several instructional strategies in teaching sciences particularly chemistry. This includes lecture, laboratory method, inquiry, problem solving, demonstration, cooperative strategy, guided discovery, project laboratories, field trip/ excursion and so forth. The new trend in teaching now is the learner–centered approach which calls for the teacher to play the role of supporting the learning process. In this arrangement, the learner is exposed to the learning situation under the guidance and support of the teacher. Therefore, chemistry teachers need to create an enabling environment by way of choosing better learning strategies which will pave way to a successful teaching and learning process.

Based on the information presented, the study intends to provide some possible solutions through the use of alternative instructional methods which will be more effective in promoting performance when compared to the traditional (lecture) method among secondary school two (SSII) chemistry students. It is against this background that this research intends to determine laboratory methods on academic performance of chemistry secondary school students in Rano Zonal Education Directorate Kano.

### **Statement of the Problem**

It appears that chemistry is considered by many of the secondary school students as a difficult subject and majority of the teachers use the traditional lecture method often than the alternative instructional strategies. Many scholars opined that lecture method is predominantly used in our educational institution (Aina, 2009; Sola & Ojo, 2007; & Suleiman, 2010). Based on this premise, it seems that chemistry teachers in Kano state use conventional (lecture) method than alternative methods in their teaching. The former method is characterized as teacher –centered because it involved the transmission of knowledge to learners characterized as one – way flow of information from the teacher (who is always active) to the learner (who is always passive).

This may be a reason for students’ poor performance in the subject. Ajewole and Ivowi cited in Goje (2014) stressed that over the years, results of studies have shown that students have continue to perform poorly in science, chemistry inclusive. This is due to so many reasons among which include the choice of the instructional strategies, the non –availability of resource

materials, parents support towards education of their children, over loaded curriculum, lack of clearly stated framework for instructional strategies, poor classroom management and lack of scientific equipment in the laboratories usually causes poor performance in chemistry (Madugu & Shuaibu in Abdullahi, 2014). This implies that lack of good instructional strategy employed by chemistry teachers may cause low performance in teaching and learning of chemistry in secondary schools.

In related development, the lecture method is also known to cause lack of interest and poor performance in science as opined by Njoku (2007). In the same vein, science teachers are mostly limited to exclusively adopting this method by telling, reciting and testing of information which is regarded sterile as it does not convey either the meaning or intent of science. Akpan in Shehu (2016) specifically stated that lecture method is the method dominating science teaching in Nigerian Secondary Schools. Therefore, the need for a better instructional strategy like laboratory method is necessary. Mari, and Okebukola, cited in Abdullahi (2014) have called for a change from lecture method in teaching Chemistry. Laboratory method is therefore very important aspect of student -centred learning. Student learn best when they can work together, discuss what they are doing, help each other and learn from each other. At present student are not being given the opportunity to do this in schools (David, 2010). Therefore, the need for change in paradigm is necessary for better chemistry performance in our schools.

Moreover, it seems that secondary school students perceived science subjects as difficult. To be specific, the teaching and learning of chemistry is widely perceived as a difficult subject because of its specialized language, mathematical and abstract conceptual nature and the amount of content to be learnt. The prevailing teaching practices (the traditional approach) do not actively involve students in the learning process where by making them to be passive listeners. Studies have shown that the use of laboratory method is a way of improving quality instruction and subsequently improved students' academic performance (Stephen & Donna; Teresa & Gregory, cited in Goje, 2014). To that effect, this study attempts to investigate the effect of laboratory method on academic performance of chemistry secondary school students in Rano Zonal Education Directorate Kano.

### Research Questions

1. What is the mean score difference in academic performance of chemistry students taught using laboratory method and those taught with conventional method in Rano zonal education directorate, Kano?
2. What is the mean score difference in academic performance of female and male students taught chemistry using laboratory method in Rano I zonal education directorate, Kano?

### Research Hypothesis

**H<sub>01</sub>:** There is no significant difference in the performance mean scores of students taught chemistry using laboratory method and those taught with the conventional method in Rano zonal education directorate, Kano.

**H<sub>02</sub>:** There is no significant difference in the performance mean scores of female and male students taught chemistry using laboratory method in Rano zonal education directorate, Kano.

### Literature Review

The teaching and learning process is now shifting from the traditional to the modern trend of learner-centered approach, laboratory method is among the modern trend based on the constructivist approach in which the students have ownership of their learning. The laboratory method encourages learners to work with materials and apparatus within an environment called the laboratory, which is different from the conventional classroom situation. The lecture method which is also known as the conventional/traditional approach to teaching, is a popular method used by many teachers in teaching science subjects in secondary schools (chemistry inclusive).

The lecture method is a teaching technique in which one person, usually the teacher, has a spoken discourse on a particular subject (Aminu, 2010). In this method, it is assumed that the teacher has all the knowledge of the chemistry concepts, he does all the talking and the students do all the listening. Meaning that teachers are active while students are passive listeners. Based on this premise, the study is going to compare laboratory methods vis-à-vis lecture methods on students' performance in chemistry to determine the effectiveness of these methods in learning the concept of acid and base in chemistry.

### **Concept of Chemistry as a Science Subject**

Chemistry is considered as a very important branch of science which prepare students to take science as a career in the future. It is actually among the basic foundation careers and professions. Chemistry is regarded as the “central science” or the “mother of all sciences” owing to its confluence and influence (Ahiakwa in Goje, 2014). Therefore, chemistry is an important basic science in our senior secondary schools. Chemistry as a concept cut across all the areas of scientific studies. Jimoh (2006) defined chemistry as the science that deals with the structure and composition of matter. McDuell (2011), sees chemistry as the study of materials and how we can change them to make new more useful materials. This is regarded as the basis of chemical industries, as many chemists work in chemical industries that are involved in making useful products from raw materials. Jack (2006) defined chemistry as a body of knowledge and a way of thinking. Chemistry is therefore a relevant subject in the development of this material world, and how to make it more useful and suitable for human survival.

### **Relevance of Laboratory Method in Teaching Chemistry**

The laboratory method is a developmental method that support students to learn in an environment that differs from a conventional classroom setting. In subjects like chemistry, students feel science and behave scientifically when they are working in the laboratory. Alaka (2015), opined that laboratory method is empirical learning through the direct involvement of students. The laboratory method is the instructional method in which the students work with apparatus and materials in a functioning laboratory. This can only take place when there are clear instructions and proper support from the teacher with the help of the laboratory technician. It is a practical as well as activity-based strategy for learning chemistry, and the method is learner-friendly. Hart, Mulhall, Berry, Loughran, and Gunstone (2000) suggested that students enjoy laboratory work because it is more active and involves the students working with materials. In the laboratory, students have a chance to engage in hands-on activities, especially in secondary school chemistry where students are learning basic scientific skills to become future scientists. Despite some reservations, many authors believe that laboratory work helps promote conceptual understanding (Hart et al., 2000; Özmen; Demircioğlu & Coll, 2009; Woodley, 2009). It builds in the students’ scientific skills and processes, especially in learning chemistry as a science subject in secondary schools.

However, in the laboratory method, students work in a room and interact with learning materials under the guidance of the teacher. This situation can help the students to have greater performance of the basic chemistry concepts like that of acid and base.

### **Students' Academic Performance in Science Subjects**

Educational performance is about meeting an educational goal which may be for a long term or short term. Sometimes it may mean finishing a particular educational programme like NCE, diploma, degree, etc. In specific terms, academic performance has to do with students' scores after conducting a test or examination. Achino in Shehu (2016) considered academic performance as the level of an individual's educational growth in a test when compared with scores of others of the same level. Related to this, Yusuf (2018) opined that performance measures the aspect of behavior that can be observed at a specific period. Academic performance is a situation when students are required to maintain a satisfactory record and meet the obligations of the courses in which they are enrolled (Harvard University, 2015). In a similar situation, Ali, Haiter, Munir, Khan and Ahmed (2015) have simply put academic performance as grades/marks one obtains in a given subject after an instruction. Inyang in Goje (2014), defined academic performance as the assessment of how much learners have learned or have attained after a learning period. In the same vein, Jayanthi, Balakrishnan, Ching, Latiff, and Nasirudeen, (2014) opined that academic performance was characterized by the overall performance in each year which culminates in a Grade Point Average (GPA).

In this study, the performance scores of the experimental groups and the performance scores of the control group are going to be investigated. For long, educators have continued to call for the need of the different modes of teaching that promote performance in students (Lawson & Thompson, Esiobu & Soyibo, cited in Goje 2014; Okapor & Okeke, 2006; Okoye & Okeke, 2007). Lawson and Thompson in Goje (2014) further observed that students' achievement in science (chemistry inclusive) depends on their understanding of science concepts. Achino cited in Shehu (2016) considered academic performance to be the level of an individual's educational growth in a test when compared with scores of others of the same level.

However, Topor, Keane, Shelton, and Kalkins (2010), have said that several methods are used to measure students' academic performance, including standardized achievement test scores, teacher rating of academic performance, and report card grades. In this study, the performance

score of the experimental group and the performance of the control group is going to be investigated. Performance in this study therefore refers to the ability of the chemistry students to score marks after being exposed to the treatment on acid and base concepts.

### **Methodology**

This study employed pre-test, post-test quasi-experimental and control group design. This according to Akuezilo cited in Abdullahi (2014) involves two groups in which one group is assigned as experimental and the other control group. All the two groups were pre-tested to determine their entry level.

The target population used in this study is one thousand two hundred and thirty-one (1231) senior secondary school two (II) chemistry students of Rano Zonal Education Directorate, Kano. Based on the record from the Kano State Senior Secondary School Management Board, Rano education zone consists of forty-eight (48) public schools, and all the forty-eight (48) schools are single-sex schools; the age range of the students is between 16 – 20 years.

The sample size for this study is three hundred and four (304) which was arrived at using a purposive sampling technique. As quasi-experimental design does not allow randomization, intact classes were used for the study which is in line with Cohen, Manion, and Morrison (2007). A total number of four schools were drawn from the population as samples; where two schools represented experimental groups, and two schools were used as control groups respectively. The four intact classes have a total number of two hundred and six (206) students. The selections of the schools were purposively done to allow equal chance of the girls/boys and day/boarded schools being represented.

The instrument used for this study is the Acid-Base Performance Test (ABPT) which was developed by the researcher. The instrument has two parts (A & B), Part A contained basic information like school name and gender while part B covered the ABPT section. This instrument consists of fifty (50) multiple objective test items each to determine the academic performance of students in acid and base concepts of secondary schools two (SS II) chemistry syllabus and ABPT was constructed based on the selected topics for the treatments. The topics selected are; acids, bases, introduction to apparatus and materials, volumetric analysis, acid-base titration, standard solution, and the pH scale. The researchers obtained the data on performance by administering the instrument through pre-test and post-test to the senior secondary schools

(SSII) chemistry students in the experimental and control groups. The students in the experimental group were exposed to the laboratory method under the researchers' guidance, while the students in the control groups were exposed to the conventional teaching method on the same contents used for the experimental group, also facilitated by the researcher/research assistants. The treatment procedures were guided by lesson plans.

The data collected from the administration of the instruments were analyzed statistically using Statistical Package for Social Sciences (SPSS), version 25. At descriptive level, the research questions were answered by using mean and standard deviation. While at the inferential level, hypotheses were tested using independent samples t-test. The reason for the use of t-test is because t-test is a statistical tool that compares the actual difference between two means as expressed in standard deviation of the difference between the means (Clarke & Cook, 2007). Based on this premise, the hypotheses formulated for this study were retained or rejected at an alpha of 0.05 level of significance.

## Results

The pretest data were used to establish the equivalence of the two groups before the experiment. To achieve this, the pretest mean scores of the experimental and control groups were subjected to t-test statistics. The result shows no significant difference between the mean scores. This implies that the groups show equivalence with respect to their knowledge on acid and base concepts. The research questions alongside the corresponding hypothesis were answered and analysed as follows:

**H<sub>01</sub>:** There is no significant difference in the performance mean scores of students taught chemistry using laboratory method and those taught with the conventional method.

The performance test scores of students in the experimental group (Laboratory method) and that of the control group (conventional method) were tested to determine the students' performance in chemistry as shown in table 1.

**Table 1: Independent sample t-test for null hypothesis one**

Instructional Method	N	Mean	Std. Deviation	Df	T	P	Decision
Laboratory	92	56.3804	12.77174	204	6.434	.000	Rejected
Conventional	114	44.3158	13.85150				

The result of the t-test in Table 1 revealed that the mean score of 56.38 and the standard deviation of 12.77 for students taught chemistry using Laboratory method was higher than the mean scores of 44.32 and standard deviation of 13.85 for students who were exposed to conventional method. The observed level of significance for the test was 0.000 and this is lower than the significant level set at  $P \leq 0.05$  which is an indication that there is a significant difference in academic performance between the two groups. Therefore, the null hypothesis is rejected.

**H<sub>02</sub>:** There is no significant difference in the performance mean scores of female and male students taught chemistry using laboratory method.

Based on the stated hypothesis above, the performance test scores of female students in the experimental group (Laboratory method) and that of the male students in the same group were tested to determine their performance in chemistry as shown in table 2.

**Table 2: Independent sample t-test for null hypothesis two**

Gender	N	Mean	Std. Deviation	Df	T	P	Decision
Female	43	58.8837	13.97142	90	1.859	.066	Accepted
Male	49	53.9796	11.31093				

The result of the t-test in Table 2 revealed that the mean score of 58.88 and the standard deviation of 13.97 for female students taught chemistry using Laboratory method was lower than the mean scores of 53.99 and standard deviation of 11.31 for male students in the same group. The observed level of significance for the test was 0.66 and this is greater than the significant level set at  $P \leq 0.05$  which is an indication that there is a significant difference in academic performance between the two groups. The null hypothesis is therefore accepted.

### Discussion

The study revealed that the mean score of 56.38 and the standard deviation of 12.77 for students taught chemistry using Laboratory method was higher than the mean scores of 44.32 and standard deviation of 13.85 for students who were exposed to conventional method. The observed level of significance for the test was 0.000 and this is lower than the significant level set at  $P \leq 0.05$ . The null hypothesis which states that there is no significant difference in the

performance mean score of students taught chemistry using laboratory method and their counterparts taught with the conventional method is thus rejected.

This infers those students taught chemistry using laboratory performed significantly better than those taught using conventional method. The above finding agreed with that of Leman and Burcin (2010) who stressed that students who were taught with laboratory method has significantly higher scores than those taught using lecture. Similarly, this finding is in line with that of Ogundiwin, Asaju, Adegoke and Ojo (2015) who reported that those students taught using laboratory method performed significantly better than those taught using lecture method.

The study also found out that there was no significant difference in the performance mean score of female students taught chemistry using laboratory method and their male counterparts in the same group, and in this case, the null hypothesis is accepted. This infers female students taught chemistry using laboratory are significantly different in performance compared to the male students taught using laboratory method.

The above finding is in line with the findings of Shamsuddeen and Jamilu (2024), who revealed that there were significant differences in performance between students taught Biology using laboratory strategy and those exposed to lecture method. Also, the finding of Kelubia, Okpokor and Odu (2024), which revealed that there was a notable disparity in the average achievement scores between students who were taught woodwork using the laboratory teaching method and those who were taught using the lecture method, is in line with the above finding.

### **Conclusion**

From the findings of this research, it was concluded that laboratory method enhances students' performance in chemistry. It was also found out that there was no great disparity in performance of female and male students taught the concept of acid and base using laboratory method compared to conventional method.

### **Recommendations**

From the findings of the study, it is recommended as follows:

1. Teachers should use laboratory method in teaching chemistry in secondary schools in Kano state, Nigeria.

2. Governments, school management and relevant education stake holders like TETFund should support the use of laboratory in teaching and learning of chemistry concept in schools.

### Acknowledgments

The researchers would like to appreciate the effort of Tertiary Education Trust Fund (TETFund) for financing this research. Also, the effort of the management of Federal University of Education Kano is well recognized and applauded in nominating this proposal. We would like to appreciate the contribution of Ishaq Mahmud for assisting in data collection during the conduct of this study.

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## SYSTEMATIC REVIEW OF AI-POWERED SURVEILLANCE SYSTEMS AND STEM EDUCATION INITIATIVES FOR MITIGATING BANDITRY IN NIGERIA

BY

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### ABSTRACT

*Banditry has become a pervasive threat to lives, livelihoods, and education in Nigeria, necessitating innovative solutions. To address this challenge, this systematic review examines the role of AI-powered surveillance and STEM education initiatives for banditry mitigation. The paper comprehensively uses peer-reviewed literature and identifies best practices, challenges, and gaps. The literature reviews suggested that integrating both initiatives provides a promising improvement in security issue. It is recommended that the government should develop context-specific AI-powered surveillance in STEM education curricula such as cybersecurity, coding, and robotics to contribute to understanding educators' and learners' perspectives on banditry mitigation, informing policymakers to offer potential solutions to security threats facing Nigeria. The paper presents significant implications for banditry mitigation and community resilience. It provides insights into the potential AI-powered surveillance and STEM education initiatives to in addressing security challenges and providing information on strategies for capacity building, curriculum design, and policy development.*

**Keywords:** AI-Powered, Surveillance, STEM education, Banditry

### Introduction

Banditry is a serious crime that poses a security challenge to democratic governance and peaceful coexistence in Nigeria. Activities include kidnapping, shooting, rape, cattle rustling, killing, arson and looting, Daily Post (2020). The prevalence of under-governed spaces where the government's control is ineffective or limited is one of the major factors giving rise to banditry. Issues such as bad governance, weak legitimacy, protracted conflict, and poor leadership make

citizens vulnerable to exploitation by terrorist groups, traffickers, and other criminal elements. Such areas are not generally entirely devoid of the government's control but are governed poorly and differently from larger communities cited by Hassan, (2020).

Under-governed spaces coupled with the country's porous borders have increased the influx of small arms and light weapons from the Sahel region – thus increasing the opportunities for crime. This is facilitated by vast forests which allow the illegal arms trade to fester. It is further complicated by the socioeconomic conditions in the North West, which leave the youth vulnerable to recruitment for criminal activities. Mosadomi, and Danjuma, (2020) stated that the socioeconomic realities, complex relationships between pastoralists and farmers, and illegal mining activities, are multidimensional. Issues such as poverty, widespread unemployment, deprivation, inequality, marginalization, exclusion, and lack of access to basic amenities characterized the scene. For example, Katsina, Zamfara, Jigawa, and Sokoto states have poverty levels. These conditions make the region even more susceptible to crime, including as a result of the activities of Boko Haram and now, banditry cited by the West African Network for Peacebuilding (2020).

### **AI-Powered Surveillance Systems**

Artificial Intelligence can be described as the simulation of the human mind to make computers think and act like humans by performing tasks like learning and problem-solving (Zhu, & Zhang, 2020). AI is still being researched to achieve better performance. Artificial Intelligence (AI) has transformed the operations of surveillance systems, making it possible for these devices to identify more opportunities for protection and supervision than ever before. Utilizing complicated algorithms and methods for learning patterns, security tools have become more proficient and effective, Wang and Wang (2019). According to Singh and Singh (2018), AI plays a more significant role in security and surveillance, improving other security measures. Intelligent video analytics makes real-time unusual activity detection possible, reducing the need for continuous human observation. Hwang, Wah, and Gašević (2020) stressed that Smart face recognition improves identification accuracy within diverse environments, enhancing access control and investigation processes. Asset control devices (ACDs), together with task automation, make everyday operations more seamless while maintaining round-the-clock oversight that minimizes human errors.

### **Applications of AI-Powered Surveillance Systems**

Artificial intelligence considerably ameliorates surveillance systems' abilities and efficiency within different industries. The following are some of the main areas of application for AI in surveillance.

1. Improved Object Recognition and Tracking
2. Real-Time Analysis and Proactive Monitoring
3. Facial Recognition
4. Predictive Analytics and Anomaly Detection
5. Security Solutions for Shopping Stores
6. Faster Data Extraction in Emergencies
7. Fire and Smoke Detection
8. Object Detection Systems

### **Benefits of Artificial Intelligence in Surveillance**

The following are the benefits of AI-powered surveillance systems highlighted by Holmes, Bialik, & Fadel, (2019).

1. Enhanced Precision and Efficiency:
2. Proactive Threat Detection:
3. Cost Savings:
4. Scalability:
5. Improved Data Utilization.

### **STEM Education Initiatives**

In the ever-evolving landscape of education, STEM (Science, Technology, Engineering, and Mathematics) subjects play a crucial role in preparing students for the challenges of the current century as cited by Oyekanmi, & Adu, (2020). The integration of STEM education through cybersecurity, coding, and robotics is a powerful catalyst, fostering critical thinking, problem-solving skills, and a deep understanding of technology, (National Academies of Sciences, Engineering, and Medicine, 2018). This review explores the dynamic synergy between coding, robotics, and STEM, highlighting their profound impact on shaping the next generation of innovators. It also highlights how AI is elevating STEM education with its online platform for educators in teaching and mitigating banditry in Nigeria

### **STEM Education Initiatives**

STEM education is a complex system, from a system perspective, consisting of interdependent elements, including subject, information, medium, and environment cited by Yannier, Hudson, and Koedinger, (2020). STEM education integrates core subjects to emphasize real-world applications and problem-solving skills for students. Unfortunately, the current status of STEM education in Nigerian schools is not at its optimal level proposed by Mystakidis, Christopoulos, & Pellas, (2021). Incorporating some areas like cybersecurity, coding, and robotics into STEM education is a powerful catalyst, fostering critical thinking, problem-solving skills, and a deep understanding of technology as revealed in Alade, (2021).

STEM education encourages an interdisciplinary approach based on school contexts. Students can learn to use necessary concepts and principles from multiple STEM disciplines to discover answers to problems that arise in real-world situations (Alabdulhadi, Faisal, 2021). As a direct consequence of this integration, students might want to improve their abilities to connect with distinction subject areas and how they interact with one another and can develop learning skills such as problem-solving and critical thinking, collaboration and communication, and live to learn with others in creatively Le, Strickroth, Gross, & Pinkwart, (2013). Integrating AI-powered surveillance systems in STEM education in Nigerian schools must be prioritized to equip students with the necessary skills for mitigating global security threats.

### **Cybersecurity in STEM Education**

Bicak, Bicak, Liu, and Murphy, (2020) define cybersecurity as a collection of tools, guidelines, perceptions of security, security safeguards, guidelines, risk management practices, action, training, and best practices, the technology that can be used to protect and guarantee the cyber environment and organization and user resources. Moreover, *Alhamdani, (2019)* said, the organizational and user elements, which include networked computers, manpower, different applications and infrastructures, their services, satellite systems, and the broadcasted data contents, are stored in a cyber-world. The general security goals include availability, integrity, authenticity, and privacy.

### **Roles of Cybersecurity in STEM Education**

Cybersecurity is essential for protecting sensitive data, including personal identification information (PII), protected health information (PHI), intellectual property, and government and

industry systems from theft and destruction cited in Ibrahim, (2019). The risk of cyber threats increases with global connectivity and cloud services like Amazon Web Services (AWS) (Radford, 2023). These threats can target any level of an organization, making employee education on social engineering scams and cybersecurity attacks such as ransomware (WannaCry) or other malware vital Cybint, (2024)

### **Coding in STEM Education**

Nwachukwu, (2019) proposed that, teaching students to code not only prepares them for a technology-driven future but also enhances their problem-solving abilities. Coding empowers students to think logically, break down complex problems into manageable parts, and develop step-by-step solutions. By introducing coding at an early age, educators lay the foundation for a generation that is fluent in the language of innovation.

### **Roles of Coding in STEM Education**

Incorporating coding into STEM education according to Eze, (2020) opens up new avenues for exploration. Students learn to apply mathematical concepts in a practical context, turning abstract theories into tangible solutions. From creating algorithms to solving equations, coding bridges the gap between theory and application, making STEM subjects more relatable and engaging, cited by Suh, Anusha, Upadhyaya, and Ashwin Nadig, (2019).

Moreover, coding provides a platform for creativity, allowing students to express themselves through interactive projects, animations, and game development. This creative aspect makes learning enjoyable and nurtures an entrepreneurial spirit.

### **Robotics in STEM Education**

Robotics takes STEM education to a whole new level by introducing a hands-on, multidisciplinary approach. Robots are the embodiment of STEM principles, integrating science, technology, engineering, and mathematics in a tangible and interactive form (Okoro, 2020). Students involved in robotics not only gain technical skills but also develop teamwork, communication, and project management abilities, cited by Yang, and Zhang, (2019).

### **Roles of Robotics in STEM Education**

Ogunyemi, (2018) opined that integrating robotics transforms abstract concepts into concrete experiences. Building and programming robots allow students to apply scientific principles, experiment with engineering designs, and use mathematics to control and optimize creations,

Zampirolli, Borovina, Josko, Venero, Kobayashi, Fraga, Goya, and Savegnago, (2021), the researchers further opined that robotics competitions and challenges provide opportunities for students to showcase skills, fostering critical thinking under pressure and refining teamwork abilities.

### **Integrated AI-powered surveillance and STEM education initiatives**

The integration of AI-powered surveillance and STEM education initiatives opens up an opportunity to implement intelligent surveillance systems in schools as pointed out by Afolabi, (2020). Imagine an AI-powered security camera system that can alert one about various weapons and guns, masked faces, and suspicious objects in real time. This can prevent a mass shooting or terrorist attack before it happens. To detect threatening objects in a live video, advanced deep learning models must be deployed on-site to improve object detection and semantic segmentation of the video content, (Al Obaidli Iqbal, Al Obaidli, Iqbal (2020).

In recent years, there has been a growing emphasis on utilizing AI to develop more personalized and adaptive learning environments (Oyedele, 2019). This technology can analyze large amounts of data to customize educational content to meet national and individual student needs, thereby reducing security threats and enhancing learning outcomes.

AI-powered tools like intelligent tutoring systems and adaptive learning platforms have demonstrated significant potential in offering personalized feedback and support, aiding students in comprehending complex STEM concepts more effectively cited in (Olowu, 2019).

### **Methodology**

This study systematically reviewed several peer-reviewed English language articles published on AI-powered surveillance, STEM education, and banditry mitigation, from 2010-2024 through electronic database, and conference proceedings, aiming at gathering a wide range of perspectives on AI-powered surveillance and STEM initiatives. The study selection procedure includes; title and abstract screening, and a full-text review of the paper focusing on identifying and synthesizing key activities, frameworks, and best practices by using a PRISMA checklist. The data extracted from the review involved study characteristics (author, year, and publication), AI-power surveillance systems used in STEM education initiatives implemented in schools, and banditry mitigation outcomes. The paper also considered global initiatives and case studies, to

provide a diverse understanding of how AI-powered surveillance systems and STEM education initiatives mitigate security is being approached in different regions.

This study limits itself to systematic review, which leads to future research directions, The researchers searched the best-known scholar databases, and conferences with the keywords relevant to AI-powered surveillance systems and STEM education initiatives, some biases might exist in the searching and screening process. Since AI-powered surveillance systems and STEM education initiatives are highly technology-dependent fields, some studies might only highlight the technology rather than the education context. Therefore, future studies can adjust the search criteria to solve this perspective. While the current study only implemented a systematic review, a meta-analysis could be conducted in the future to report the effect sizes of recent studies to gain a deeper understanding of the effects of AI-powered surveillance and STEM education integration in an educational system.

## **Results and Discussion**

### ***AI-Powered Surveillance Systems***

The review highlights the success of AI-powered surveillance systems and STEM education initiatives in reducing banditry incidents by improving object recognition and tracking (Brown, Crabbe, Doerr, Greenlaw, Hoffmeister, and Monroe, 2019), real-time analysis and proactive Monitoring (Hashim, Omar, Ab Jalil, & Sharef 2022), facial recognition technology (Afolabi, 2020), predictive analytics and anomaly detection (Khan, Li, Khan, Khan, Hadjouni, and Elmannai, 2023), security solutions for shopping stores (Amershi, Weld, Vorvoreanu, Fourney, Nushi, Collisson, Suh, Iqbal, Bennett, Inkpen, and Teevan, 2019), faster data extraction in emergencies (Al Kaabi, Ketbi, Al Khoori, Al Shamsi, and Alrabae 2022), fire and smoke detection (Khan, I., Ahmad, A. R., Jabeur, N., & Mahdi, M. N. 2021) and object detection systems (Adesina, 2018). These findings on AI-powered surveillance as effective in enhancing surveillance and demonstrated significant crime reduction potential.

### ***STEM Education Initiatives***

STEM education initiatives showed the potential to enhance security awareness and problem-solving skills among students. The roles of cybersecurity curricula in STEM education (Bicak, Bicak, Liu, Murphy, 2020; Alhamdani, and Alhamdani, 2019; Ibrahim, 2019; Radford, 2023 & Cybint, and Cybint, 2024), coding programs (Eze, 2020; Nwachukwu, 2019; Suh, Anusha,

Upadhyaya, and Ashwin Nadig, 2019) and robotics (Zampirolli, Borovina, Josko, Venero, Kobayashi, Fraga, Goya, and Savegnago, 2021; Okoro, 2020; Yang, and Zhang, 2019) in enhancing security awareness, training, and enhances problem-solving skills.

### ***Integrated AI-Powered Surveillance Systems and STEM Education Initiatives***

The reviews suggested integrating AI-powered surveillance systems with STEM education initiatives can increase security and students' innovative skills. Combining facial recognition technology with coding programs and AI-powered tools like intelligent tutoring systems, and adaptive learning platforms have demonstrated significant potential in offering personalized feedback and support, aiding students in comprehending complex STEM concepts effectively as worked out (Affia, 2022; Affia, Nolte, & Matulevičius, 2022; Al Obaidli Iqbal, Al Obaidli, Iqbal, 2020; Afolabi, 2020; Akintunde, 2020; Olowu, 2019; Oyedele, 2019; Oyedele, 2019; Adesina, 2018; Adesina 2018). These reviews found that collaborating AI-powered surveillance and STEM education initiatives improves security outcomes, detects threatening objects in a live video, advances deep learning models, and develops the ability for object detection

### **Findings**

1. Findings suggest integrated AI-powered surveillance and STEM education initiatives can mitigate banditry in Nigeria.
2. AI-powered surveillance systems and STEM education initiatives are crucial for Nigerian schools to nurture future innovators and problem-solvers.
3. It is evident that integrating AI-powered surveillance and STEM education initiatives holds the key to unlocking Nigeria's potential for technological advancement, and security architecture.
4. Stakeholders must prioritize and support integrated AI-powered and STEM education to bridge the skills gap in school settings.
5. By investing in AI-powered surveillance and STEM education initiatives, Nigeria can secure a bright future with sustainable development and growth through enhancing security awareness and problem-solving skills among students.
6. There is need for a collective work towards ensuring that every Nigerian student has access to quality STEM education, to demonstrate significant crime reduction and detection potential.

7. There is also a need to create a future where AI-powered surveillance system and STEM education is the cornerstone of Nigeria's progress.

### **Conclusion**

Based on the findings, the paper recommends that AI-powered surveillance systems (courses/programs) should be augmented in the STEM education curriculum, implementing such innovative programs can equip students with critical thinking, problem-solving, and technical skills essential for innovation across various sectors, including cybersecurity, coding, robotics, agriculture, healthcare, energy, and infrastructure. Integrating AI-powered surveillance and STEM education initiatives is crucial for Nigerian schools to nurture future innovators and problem-solvers. It is, however, evident that integrating AI-powered surveillance and STEM education initiatives will hold the key to unlocking Nigeria's potential for technological advancement.

### **Recommendations**

The review's findings have implications for policymakers and practitioners. Integrating AI-powered surveillance systems and STEM education initiatives into existing security strategies may be enhanced. Future research should investigate scalability, long-term effectiveness, and potential biases in AI-powered surveillance systems and other STEM education initiatives.

Moreover, the paper suggested that all stakeholders must put their hands on deck, to recognize integrating AI-powered surveillance systems in schools through STEM education as a powerful catalyst for countering banditry, fostering community resilience, and propelling socio-economic development. Drawing lessons from successful global STEM education initiatives can provide strategies adaptable to Nigeria, so the government should be committed to the prioritization of AI-powered STEM education, to lay the foundation for a more promising and peaceful future for its banditry-affected communities.

The integration of AI-powered surveillance and STEM education initiatives is a rapidly evolving field, with numerous future trends and research directions that promise to further enhance educational outcomes. As technology continues to advance, the role of AI in STEM education will become increasingly significant, shaping the way we perceive things, particularly in the current technological advancement. A promising future trend is the advancement of more sophisticated adaptive security measures and learning systems through AI systems. Cavanagh, (2020) predicts

that future adaptive security measures will become even more accurate and effective, using advanced data analytics to further customize our experiences.

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## STUDY ON COLLABORATION OF TRADITIONAL KNOWLEDGE WITH MODERN DISASTER RISK REDUCTION STRATEGIES

BY

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### **ABSTRACT**

*Disaster risk reduction has become a critical aspect of sustainable development, particularly as the frequency and intensity of natural disasters increase globally due to climate change and urbanization. Traditional knowledge, which encompasses the skills, experiences, and insights developed by communities over generations, plays a pivotal role in enhancing disaster risk reduction strategies in our communities, as such these strategies cannot be neglected even though new strategies are evolving as a result of technology and innovations. Notwithstanding, the traditional knowledge has succeeded in curtailing disaster for generation. On this strength, there is the greater need to sustain and integrate it into the modern new strategies of advancing technology.*

**Keywords;** *Disaster, Traditional Knowledge, Risk Reduction*

### **Introduction**

Disasters have devastating impacts on communities, especially those that are marginalized. Because international frameworks such as the Sendai Framework for Disaster Risk Reduction (2015-2030) emphasize the importance of inclusive approaches to risk management. Traditional knowledge, often overlooked in contemporary Disaster risk reduction strategies, despite the fact that it offers valuable insights into local ecosystems, climate patterns, and sustainable practices. In addition, disaster risk reduction includes variety of strategies aimed at minimizing vulnerabilities and enhancing community resilience against natural and anthropogenic hazards. Traditionally, disaster risk reduction has leaned heavily on scientific and technological solutions, often overseen as rich reservoir of knowledge embedded in local cultures. This study explores

how traditional knowledge can complement modern scientific approaches, whereby creating more robust and culturally relevant to disaster risk management strategies.

### **Conceptual Framework**

Traditional knowledge refers to the long-standing practices, beliefs, and experiences passed down through generations within specific cultural groups. It is often place-based, context specific, and intimately tied to local ecosystems. In other words, traditional knowledge refers to the accumulated understanding, skills, and practices that communities have developed over time. It is often context-specific, based on the local environment, culture, and history.

Traditional knowledge systems often include detailed observations of local environmental changes, enabling communities to identify and respond to hazards more effectively. For example, indigenous peoples may recognize subtle shifts in animal behavior or vegetation patterns that signal impending disasters, such as floods or droughts. In addition, traditional knowledge refers to the cumulative body of knowledge, practices, and beliefs held by indigenous and local communities. It encompasses various domains, including agriculture, ecology, medicine, and weather prediction.

Disasters are not merely events but complex phenomena with profound consequences, such as earthquakes and floods to pandemics and industrial accidents. These phenomena disrupt societies, exacerbate inequalities, and hinder progress. The increasing frequency and intensity of disasters, often linked to climate change and unsustainable human activities. Often underscore the critical need for a comprehensive and proactive approach to risk management.

To this regards, Disaster Risk Reduction refers to the systematic efforts undertaken to analyze and reduce the causal factors of disasters. This involves a range of measures ranging from preventing hazards to mitigating the impacts of disasters when they occur. (UNISDR, 2015). Disaster risk reduction is not a single action but a cycle encompassing prevention, mitigation, preparedness, response, and recovery. It aims to reduce vulnerabilities, enhance capacities, and foster resilience at individual, community, and national levels. Crucially, disaster risk reduction is not just about controlling natural hazards, but about addressing the underlying social, economic, political, and environmental conditions that transform natural events into human

tragedies. It aligns with the broader goals of sustainable development, in promoting equitable and resilient societies.

### **Principles of Disaster Risk Reduction**

The followings are the principles that underpin effective disaster risk reduction strategies:

*Risk Assessment and Understanding:* Identifying, analyzing, and evaluating the nature and magnitude of risks, including hazard, vulnerability, and exposure, which are the cornerstone of disaster risk reduction.

- i. *Participation and Collaboration:* Effective disaster risk reduction requires the active engagement of all stakeholders, including communities, governments, NGOs, the private sector, and academic institutions.
- ii. *Multi-Hazard Approach:* Recognizing that communities are often at risk from multiple hazards, a comprehensive disaster risk reduction strategy should consider all potential threats.
- iii. *Prevention and Mitigation:* Prioritizing proactive measures to prevent hazards from turning into disasters, and mitigating the intensity of their impacts. This includes structural (e.g., flood defenses) and non-structural (e.g., land-use planning) measures.
- iv. *Building Resilience:* Focusing on strengthening the capacity of individuals, communities, and systems to withstand and recover from disasters and to adapt to changing conditions.
- v. *Socio-Economic Considerations:* Recognizing the disproportionate impact of disasters on vulnerable populations and prioritizing equitable disaster risk reduction solutions.
- vi. *Sustainability:* Integrating disaster risk reduction into long-term development planning to ensure that risk reduction efforts are not undermined by unsustainable practices.

### **Traditional Knowledge Strategies in Disaster Risk Reduction**

Traditional knowledge systems often include detailed observations of local environmental changes, enabling communities to identify and respond to hazards more effectively. For example, indigenous peoples may recognize subtle shifts in animal behavior or vegetation patterns that signal impending disasters, such as floods or droughts. Traditional knowledge systems often include sophisticated methods for understanding local hazards and vulnerabilities.

Local communities can identify risks based on historical events and environmental changes, contributing to more accurate risk assessments through the following actions.

*i. Building Resilience through Adaptive Practices*

Traditional knowledge fosters resilience by promoting adaptive practices tailored to local conditions. Traditional agricultural techniques, for instance, may enhance food security during disasters. Crop diversification, agro forestry, and the use of drought-resistant varieties are strategies that have evolved in response to historical climatic variations.

*ii. Strengthening Community Networks*

Traditional knowledge encourages strong community networks, fostering collaboration and mutual support during crises. These networks can facilitate quicker responses to disasters, as community members are often more attuned to each other's needs and capabilities than external agencies.

*iii. Complementing Scientific Approaches*

While scientific methodologies provide valuable data and predictive capabilities, it may lack the contextual insights that traditional knowledge offers. For example, indigenous communities may have detailed knowledge of local hydrology, which can improve flood risk assessments and land-use planning. By merging scientific models with traditional practices, one can develop more accurate and culturally appropriate disaster risk reduction strategies.

*iv. Fostering Inclusive Governance*

Involving local communities in disaster management processes fosters inclusivity and empowerment. Traditional knowledge can guide the design and implementation of disaster risk reduction policies, by ensuring culturally sensitive and contextually relevant. This participatory approach promotes community ownership, increasing the likelihood of successful interventions.

*v. Early Warning Systems:*

Some indigenous cultures have developed early warning systems based on natural signs and phenomena. For example, certain animal behaviors or weather patterns can indicate impending disasters, providing communities with timely information.

vi. *Mitigation Practices:*

Traditional knowledge encompasses practices such as sustainable land use, agro forestry, and traditional building techniques, which can reduce vulnerability to disasters. These methods often prioritize ecological balance and sustainability.

### **Strategies for Disaster Risk Reduction**

The following are the action categories of Disaster risk reduction strategies:

*Land Use Planning and Management:* Implementing zoning regulations, avoiding development in high-risk areas, and promoting sustainable land use practices.

- i. *Infrastructure Development:* Constructing resilient infrastructure, including flood defenses, earthquake-resistant buildings, and effective warning systems.
- ii. *Early Warning Systems:* Developing and implementing mechanisms to provide timely warnings to vulnerable populations, enabling them to take protective measures.
- iii. *Public Awareness and Education:* Raising awareness about disaster risks and promoting preparedness through education, training, and community engagement.
- iv. *Community-based disaster risk reduction:* Empowering local communities to identify risks, develop mitigation strategies, and participate in disaster response and recovery.
- v. *Policy and Institutional Framework:* Establishing clear legal frameworks, institutional structures, and funding mechanisms for disaster risk reduction activities.
- vi. *Technological Innovation:* Leveraging new technologies, such as satellite imagery, GIS mapping, and mobile applications, to improve risk assessment, monitoring, and communication.
- vii. *Financial Mechanisms:* Creating and promoting innovative financing options, such as insurance and disaster bonds, to support risk reduction and post-disaster recovery.

### **Position of Traditional Knowledge in Disaster Risk Reduction.**

- i. *Locally Appropriate Solutions:* Traditional knowledge is context-specific and tailored to unique ecological and social conditions, often outperforming generic solutions designed without such consideration.

- ii. *Cost-Effective:* Traditional knowledge often utilizes locally available materials and skills, making it more affordable and sustainable compared to technology-heavy approaches.
- iii. *Community Empowerment:* Leveraging traditional knowledge empowers local communities, fostering a sense of ownership and responsibility, and promoting local agency in disaster management.
- iv. *Cultural Sensitivity:* Traditional knowledge-based approaches are culturally appropriate, respecting local customs and beliefs, thus promoting community acceptance and participation.
- v. *Long-Term Resilience:* By promoting sustainable practices and a deeper understanding of the environment, traditional knowledge helps build long-term resilience, reducing vulnerability to future disasters.

### **Challenges of Integrating Traditional Knowledge into Disaster Risk Reduction**

Despite the huge benefits of traditional knowledge, there are some challenges that are hindering its integration into modern disaster risk reduction strategies. Below are some of the challenges:

- i. *Cultural Dismissal:* Modern scientific paradigms often overlook or undervalue traditional knowledge, viewing it as inferior or outdated. This cultural dismissal is one of the most painful factors that led to lack of engagement with local communities in disaster risk reduction strategies.
- ii. *Knowledge Loss:* Rapid urbanization and globalization can contribute to the erosion of traditional knowledge systems, as younger generations move away from their cultural roots and practices, whereby diminishing all classical cultural knowledges.
- iii. *Inadequate Policy Frameworks:* Many existing disaster management policies do not incorporate traditional knowledge, creating and disconnect between local practices and formal disaster response systems.
- iv. *Limited Collaboration:* Effective integration of traditional knowledge requires collaboration between local communities, governments, and scientific organizations. However, such beneficial collaborations are often lacking between the agencies.
- v. *Validation and Recognition:* There is often skepticism regarding the legitimacy of traditional knowledge within scientific communities. Establishing methods to validate

and recognize traditional practices is essential for their integration into modern disaster risk reduction strategies. Notwithstanding, such validation and recognition are subjected to many challenges between traditional knowledge and scientific communities.

- vi. *Power Dynamics Power*: Imbalances between indigenous communities and governmental or non-governmental organizations can hinder the effective integration of traditional knowledge. Because empowering local voices and ensuring equitable partnerships are critical for successful collaboration.

## **Conclusion**

Conclusively, the frequency and intensity of natural disasters are on the rise, often disproportionately impacting vulnerable communities in the developing world. While technological advancements and scientific understanding have significantly improved our capacity to predict and respond to disasters, these approaches are not always sufficient. Critically, many communities have, over generations, accumulated a wealth of knowledge about their environment, its hazards, and suitable coping mechanisms. This knowledge, often referred to as traditional knowledge is an invaluable resource that holds significant potential for enhancing disaster risk reduction. Traditional knowledge encompasses the practices, beliefs, and skills passed down through generations, relating to the interactions between humans and their environment. Traditional knowledge is a powerful, yet often overlooked, resource for disaster risk reduction. Its strength lies in its localized nature, its cost-effectiveness, and its ability to empower communities. Fostering collaboration of traditional knowledge with modern disaster risk reduction strategies move beyond generic, top-down solutions in creating disaster risk reduction strategies that are both effective and sustainable, building resilience and promoting the long-term well-being of communities most vulnerable to disasters. Largely, integrating traditional knowledge is not simply a matter of preserving cultural heritage; it is a necessity for achieving equitable and lasting solutions to the growing challenges posed by natural disasters.

## **Recommendations**

In order to have effective and efficient involvement of integrating tradition knowledge into modern disaster risk reduction strategies the following recommendations are crucial:

1. *Joint Research*: Co-conducting research to document and understand the effectiveness of traditional knowledge systems.
2. *Co-Management*: Involving communities in the design and implementation of disaster risk reduction plans.
3. *Capacity Building*: Supporting local initiatives to preserve and transmit traditional knowledge.
4. *Policy Integration*: Incorporating traditional knowledge into national and international disaster management frameworks.
5. *Accommodation of Traditional Culture*: Dismissal and addressing of all challenges hindering the integration of traditional knowledge into modern disaster risk reduction strategies discussed above in this study.

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**INFLUENCE OF CHILD LABOUR ON ACADEMIC PERFORMANCE OF DAY JUNIOR SECONDARY SCHOOL STUDENTS IN POTISKUM LOCAL GOVERNMENT AREA, YOBE STATE NIGERIA: IMPLICATIONS FOR COUNSELLING**

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**ABSTRACT**

*This study investigated the influence of child labour on academic performance of Day Junior Secondary School Students in Potiskum local government area, Yobe state Nigeria. Two research objectives with corresponding two research questions were formulated to guide the study. Descriptive survey research design was adopted. The population for the study consists of all day junior secondary school students in Potiskum Local Government Area with the total population of seven thousand three hundred and twelve (7,312). Purposive sampling techniques was used to sample (200) parents and (150) teachers in Potiskum and random sampling technique was used in the selection process. An adapted questionnaire with reliability index of 0.86 was used to collect data. Mean and rank order was used in the data analysis and the result revealed that students that engagement in child labour become habitual absentees in school and lead to poor academic performance and creating employment opportunities for parents to be able to carter for their children at whatever level can reduce child labour. Therefore, based on findings, the study recommended that; there is an urgent need for collaborative efforts from policymakers, educators, counsellors, and communities. This includes implementing and enforcing policies that safeguard children's rights, providing financial support to families, and fostering environments that prioritize education over exploitative labour.*

**Keywords:** *Academic Performance, Child Labour, Counselling*

**Introduction**

The interruption of formal education due to the demands of labour translates into missed learning opportunities, resulting in educational gaps that can be challenging to bridge. Therefore, child labour is a global issue that has far-reaching implications for the well-being, development, and future prospects of millions of children. Child labour refers to the exploitation of children through any form of work that deprives them of their childhood, interferes with their ability to attend regular schools, and is mentally, physically, socially, or morally harmful (Adegun, 2013).

Asia and the Pacific are the regions with the highest rates of child labor, followed by sub-Saharan Africa (Bass, 2004). According to International Labour Organization (ILO) (2012) India is the country with the most children worldwide, while Asia and the Pacific is the region with the highest number of child laborers.

According to United Nations International Children Education Fund (UNICEF) (2007) despite legislative efforts, child labour continues to be a significant cause for concern. In sub-Saharan Africa, child labour is extremely common, particularly in Nigeria. According to Ajakaye (2013) there are over 48 million child labourers in sub-Saharan Africa, with 15 million of them being in Nigeria. Similarly, according to estimates from the International Labour Organization (ILO, 2013), 25 percent of Nigeria's 80 million children under the age of 14 are employed as child laborers. Furthermore, statistics of the International Labour Organization (2012) estimates that there are 15 million working children under the age of 14 in Nigeria. and the National Policy on Education (NPE) make it clear that education is compulsory and a right of every Nigerian irrespective of gender, social status, religion, colour, ethnic background and any peculiar individual challenges (FRN, 2013).

In Nigeria, child labour is not a new phenomenon, as it is common for children to assist with household chores and agricultural activities (Ahmad, 2012). Many parents believe that involving their children in work helps them acquire valuable skills. However, these children often face significant risks and physical hardships that exceed their age and capacity (Basu, 1999). The British colonized Nigeria but gained her independence in 1960 after becoming a British colony in 1800. With more than 170 million citizens, Nigeria is the most populous nation in Africa (Ngada & Kyari, 2023). Nigeria possesses the greatest deposits of gas and oil. However, it is still very developing, despite its abundance of oil. The development of infrastructure has been impeded by corrupt practices and poor governance while the United Nations Convention on the Rights of the Child (CRC) and the International Labour Organization (ILO) conventions seek to protect children from exploitation and ensure their right to education.

Statistics in Nigeria has shown an increase in the number of child laborers; for example, in 1995, there were twelve million child laborers, while by 2006, that number had reached fifteen million (Adegun, 2013). Children are employed in a variety of industries, including agriculture, domestic service, mining, fishing, armed conflict, street vending, and child trafficking (Ngada & Kyari,

2023; Edmonds, 2006; Edmonds & Pavenik, 2005). In Potiskum town in particular, street hawking is a popular kind of child labour. Because these youngsters work from dawn to dusk, they rarely have time to enroll in school or, in the case of the majority, drop out (Dakasku, Olarenwaju & Musa, 2020). Awosusi and Adebo (2012) and Moyi (2012) affirmed that a large number of child laborers experience physical, psychological, sexual, and mental abuse. They put in a lot of overtime in risky and dangerous jobs for little or no compensation. Children engaged in labour-intensive activities find it challenging to balance work and school, resulting in increased absenteeism (Olufemi, 2023; Okafor, 2010; Elijah & Okoruwa, 2006). The physical demands of child labour can lead to fatigue, impacting a student's ability to concentrate in class (Emerson & Knabb, 2005).

Moreover, the researchers had observed that child labour often forces students to miss classes, leading to irregular attendance and a disrupted academic schedule. Therefore, a tired mind is less receptive to learning, and students may struggle to focus on their studies after long hours of laborious work. The Nigerian government decrees that all children receive free and quality basic education. Recent studies have highlighted the prevalence and detrimental effects of child labour on Nigerian children's education and well-being. According to the Nigeria Child Labour Survey 2022, over 62.9 million children aged 5 to 17 reside in Nigeria, constituting 30.3% of the population. A significant portion of these children are engaged in labour activities, with a study revealing that 71.7% of junior public secondary school students are involved in child labour, including 52.1% in domestic tasks and 34.0% in economic activities. This widespread involvement in labour adversely affects their education, leading to high dropout rates and limited academic achievement.

The U.S. Department of Labour's 2023 report indicates that 15% of children aged 5 to 14 are working, with 10.4% balancing both work and schooling. The demanding nature of their work often results in exhaustion and insufficient time for academic pursuits, contributing to poor performance and increased dropout rates. Moreover, the psychological impact is profound, as children engaged in labour are frequently subjected to stress, anxiety, and a diminished sense of self-worth, further hindering their cognitive development and overall well-being. The perpetuation of child labour not only undermines individual potential but also sustains a cycle of poverty, as these children miss out on educational opportunities essential for socio-economic

advancement. The extensive prevalence of child labour in Nigeria poses significant challenges to children's educational attainment and psychological health, necessitating comprehensive policy interventions and societal efforts to combat this issue.

Engaging in child labour often leaves students with limited time for completing homework assignments and revising for exams. This lack of adequate preparation can hinder academic performance and result in lower grades. Also, economic hardships, poverty, and social factors often drive families to involve children in labour to supplement household income. The financial pressures that lead children to engage in labour can force some to drop out of school prematurely (Dakasku, Olanrewaju & Musa, 2020). This truncation of their educational journey negatively impacts their academic performance and future prospects. Similarly, child labour often results in children being pulled out of school or prevents them from attending school regularly and this lack of access to education perpetuate cycles of poverty and limit opportunities for future advancement. Many children engaged in labor-intensive activities face significant health and safety risks. They are exposed to dangerous working conditions, harmful substances, and physical or emotional abuse. It is against this background, that the researchers deem it fit to investigate the influence of child labour on academic performance of day junior secondary school students in Potiskum local government area of Yobe state, Nigeria.

### **Statement of the Problem**

Child labor is a major issue and a barrier in many developing nations. Despite the fact that many countries, including Nigeria, have passed laws and made significant efforts to end the menace, the issue is still out of control in Potiskum local government area of Yobe state. Apart from comprehending and exploring many causes of the global epidemic of child labour, a synopsis of the ways in which child labour has been carried out up to this point is worrisome.

Additionally, reports in the day junior secondary schools in Potiskum local government area showed that some children hawk extremely early in the morning before heading to school, and on market days, some children either show up late to school or skip school altogether in order to sell some goods in the market. As a result of all these observations and discoveries it is the concern of the researchers to investigate the influence of child labour among junior secondary school students in Potiskum local government area of Yobe State which is a real problem for school administrators and counsellors. As such the study examined the influence of child labour

on academic performance of day junior secondary school students in Potiskum local government area of Yobe state, Nigeria and provide counselling implications for the menace.

### **Research Objectives**

The objectives of the study are to:

1. Examined the influence of child labour on the academic performance of day junior secondary school students in Potiskum Local Government Area
2. identify the approaches that could be used in minimizing child labour of day junior secondary school students in Potiskum Local Government Area
3. Examined the significant influence of counselling on child labour and academic performance of day junior secondary school students in Potiskum Local Government Area

### **Research Questions**

The following research questions guided this study:

1. What is the influence of child labour on academic performance of day junior secondary school students in Potiskum Local Government Area?
2. What approaches could be used in minimizing child labour of day junior secondary school students in Potiskum Local Government Area?
3. There is no significant influence of counselling on child labour and academic performance of day junior secondary school students in Potiskum Local Government Area

### **Methodology**

This study adopted a descriptive survey research design. The design is therefore suitable for this study since it is aimed to examine the opinion of the respondents on the Influence of child labour on academic performance of day junior secondary school students in Potiskum local government area of Yobe State Nigeria. The target population for this study was all day junior secondary school students in Potiskum Local Government Area. Purposive sampling technique was used to sample two hundred (200) parents and one hundred and fifty (150) teachers in Potiskum LGA making a total of three hundred and fifty (350) respondents to form the sample size of the study. The researchers adapted the instrument developed by Muhammad et'al (2020) titled Implication of Child Labour on Academic Achievement of Primary School Pupils (ICLAAPSP) to elicit

responses on the influence of child labour on academic performance and identify the approaches to be used in minimizing child labour of day junior secondary school students from teachers and parents. The instrument has the reliability index of .80 as reported by the authors. However, for the questionnaire to suit in for the present study some items on the questionnaire were modified and change to suit the present research. The instrument was further validated, pilot tested and revealed the reliability index of 0.86. Furthermore, the questionnaire has two major sections; Section A, elicit personal data of the respondents while Section B, elicit questions central to the topic. Altogether, there was an average of 43 items in the questionnaire.

The questionnaire was administered on a face to face direct delivery technique and spot collection was done in order to avoid loss of questionnaire. A total of 350 questionnaires were provided to the respondents because it is the total number of samples for the study. Permission to conduct the study was obtained from the Executive Secretary of Yobe State Universal Basic Education Board (YSUBEB). Descriptive statistics of Mean, rank order and chi-square was used to analyze the data collected.

## Results

**Research Question 1:** What is the influence of child labour on academic performance of day junior secondary school students in Potiskum Local Government Area?

**Table 1: Mean and Rank order on the influence of child labour on academic performance of junior secondary school students**

S/N	Item Statement	Mean	Rank
1	Students that engagement in child labour become habitual absentees in school and may finally lead to poor academic performance	3.48	1 <sup>nd</sup>
2	Most of the students who perform poorly in schools are victims of child labour	3.37	4 <sup>th</sup>
3	Late coming to school is a characteristic of students who engage in child labour and may leads to poor academic achievement.	3.27	7 <sup>th</sup>
4	Hawking from morning to evening causes students' poor academic performance	3.17	9 <sup>th</sup>
5	Poor commitment of students' towards learning is one of the problems affecting pupils' poor academic performance in junior secondary schools	3.08	12 <sup>th</sup>
6	Most of the decisions taken by schools and community to control the menace of child labour are not strongly put into practice and thereby creating rooms for students' poor academic achievement.	3.12	10 <sup>th</sup>
7	Persistent household chores from and for the parents or guardians compels students to perform poorly academically	3.33	5 <sup>th</sup>
8	Child labour is responsible for low rate of students staying at school.	3.41	2 <sup>st</sup>

9	students are demoted as a result of commitment to house hold chores and leads to poor academic performance	3.23	8 <sup>th</sup>
10	Child labour contributes to low performance of students in schools	3.06	13 <sup>th</sup>
11	Child labour prevents students from attending school and thereby leads to poor academic performance.	3.28	6 <sup>th</sup>
12	Child labour greatly affects the rate of transition from junior to senior secondary school.	3.11	11 <sup>th</sup>
13	Absenteeism is one of the factors affecting students' poor academic performance in schools.	3.38	3 <sup>rd</sup>
14	Sneaking from the school by the pupils contribute immensely to the student's poor academic performance in schools.	3.02	14 <sup>th</sup>

Result in table 1 revealed that “Students’ engagement in child labour become habitual absentees in school and may finally lead to poor academic performance” had the highest mean score of 3.48 and ranked 1<sup>st</sup>, “Child labour is responsible for low rate of students staying at school” had the mean score of 3.41 and was ranked 2<sup>nd</sup>, Absenteeism is one of the factors affecting students’ poor academic performance in schools had a mean score of 3.38 and was ranked 3<sup>rd</sup>, Most of the students who perform poorly in schools are victims of child labour had the mean score of 3.37 and was ranked 4<sup>th</sup>, Persistent household chores from and for the parents or guardians compels students to perform poorly academically had the mean score of 3.33 and was ranked 5<sup>th</sup>.

Child labour prevents students from attending school and thereby leads to poor academic performance. had the mean score of 3.28 and was ranked 6<sup>th</sup>, Late coming to school is a characteristic of students who engage in child labour and may leads to poor academic achievement had the mean score of 3.27 was ranked 7<sup>th</sup>, Students are demoted as a result of commitment to house hold chores and leads to poor academic performance had the mean score of 3.23 and was ranked 8<sup>th</sup>, Hawking from morning to evening causes students’ poor academic performance had a mean score of 3.17 and was ranked 9<sup>th</sup>, Most of the decisions taken by schools and community to control the menace of child labour are not strongly put into practice and thereby creating rooms for students’ poor academic achievement had a mean score of 3.12 and was ranked 10<sup>th</sup>, Child labour greatly affects the rate of transition from junior to senior secondary school had a mean score of 3.11 and was ranked 11<sup>th</sup>, Poor commitment of students’ towards learning is one of the problems affecting pupils’ poor academic performance in junior secondary schools had the mean score of 3.08 and was ranked 12<sup>th</sup>, Child labour contributes to low performance of students in schools had a mean score of 3.06 and was ranked 13<sup>th</sup>, Sneaking

from the school by the pupils contribute immensely to the students poor academic performance in schools had a mean score of 3.02 and was ranked 14<sup>th</sup> respectively.

**Research Question 2:** What approaches could be used in minimizing child labour of day junior secondary school students in Potiskum Local Government Area?

**Table 2: Mean and Rank order of approaches that could be used in minimizing child labour of junior secondary school students**

S/N	Item Statement	Mean	Rank
1	Availability of notebooks and textbooks to the students can minimize child labour	3.12	7 <sup>th</sup>
2	Enforcement of laws that prohibit child labour is a measure to reduce child labour	3.43	6 <sup>th</sup>
3	Provision of support to children found in child labour can reduce the menace of child labour.	3.61	2 <sup>nd</sup>
4	Provision of school uniforms can minimize child labour among students	3.44	4 <sup>th</sup>
5	Creating awareness campaign by PTA/SBMC on the effects of child labour can reduce prevalence of child labour	3.53	3 <sup>rd</sup>
6	Setting a body that will inspect various places of work to fish out young children who are engaged in manual labour in order to send them back to school can reduce child labour	3.15	5 <sup>th</sup>
7	Creating employment opportunities for parents to be able to carter for their children at whatever level can reduce child labour.	3.89	1 <sup>st</sup>
8	Engaging communities and parents in supporting child protection is a good strategy that can minimize child labour	3.10	8 <sup>th</sup>

Result in table 2 revealed mean and rank order of approaches that could be used in minimizing child labour of junior secondary school students in Potiskum local government area of Yobe state. The result revealed that creating employment opportunities for parents to be able to carter for their children at whatever level can reduce child labour had a mean score of 3.89 and was ranked 1<sup>st</sup>, Provision of support to children found in child labour can reduce the menace of child labour had a mean score 3.61 and was ranked 2<sup>nd</sup>, Creating awareness campaign by PTA/SBMC on the effects of child labour can reduce prevalence of child labour had a mean score of 3.53 and was ranked 3<sup>rd</sup>, Provision of school uniforms can minimize child labour among students had a mean score of 3.44 and was ranked 4<sup>th</sup>, Setting a body that will inspect various places of work to fish out young children who are engaged in manual labour in order to send them back to school can reduce child labour had a mean score of 3.15 and was ranked 5<sup>th</sup>, Enforcement of laws that prohibit child labour is a measure to reduce child labour had a mean score of 3.43 and was

ranked 6<sup>th</sup>, Availability of notebooks and textbooks to the students can minimize child labour had a mean score of 3.12 and was ranked 7<sup>th</sup>, Engaging communities and parents in supporting child protection is a good strategy that can minimize child labour had a mean score of 3.10 and was ranked 8<sup>th</sup>.

**Hypothesis 1:** There is no significant influence of counselling on child labour and academic performance of day junior secondary school students in Potiskum Local Government Area.

**Table 3: Chi-square test on significant influence of counselling on child labour and academic performance of day junior secondary school students in Potiskum Local Government Area**

Variable	N	Mean	SD	$\chi^2$	p-value	Remark
Influence of <b>counselling on child labour</b>	350	4.32	1.70	2.30	.000	Significant

The result from table 3 showed that counselling had significant influence on child labour and academic performance of day junior secondary school students in Potiskum local government area, Yobe state, Nigeria. This is because; the calculated p-value of .000 was less than the alpha value of 0.05 level of significance. Therefore, the null hypothesis which stated that there is no significance influence of counselling on child labour and academic performance of day junior secondary school students in Potiskum Local Government Area was rejected.

### Discussion

The influence of child labour on the academic performance of junior secondary school students in Potiskum Local Government Area is a matter of serious concern. This study found out that child labour can have detrimental effects on various aspects of a students' life such as student's engagement in child labour become habitual absentees in school and may finally lead to poor academic performance. This finding agrees with the finding of Awosusi and Adebo (2012) whose finding revealed that a large number of child laborers experience physical, psychological, sexual, and mental abuse. They put in a lot of overtime in risky and dangerous jobs for little or no compensation. Similarly, the finding is in line with the finding of Dakasku, Olanrewaju and Musa (2020) that child labour leads to exhaustion and insufficient time for academic work, thus impacts negatively on students' academic performance and subsequently dropout. Therefore, to address child labour a multipronged strategy which includes public policy and awareness campaigns should be prioritize to lessen the detrimental effects students' academic performance

and it is imperative to support families financially, enforce child labor regulations, and prioritize education. Minimizing child labour among day junior secondary school students in Potiskum Local Government Area requires a comprehensive and collaborative approach involving various stakeholders. It's essential to recognize that addressing child labor requires a sustained and coordinated effort from the government, civil society, local communities, and international organizations. By combining these strategies, it is possible to create a more supportive environment for junior secondary school students in Potiskum Local Government Area and reduce the prevalence of child labour.

### **Implications for Counselling**

Based on the findings of this study, students who experience child labour should be given counselling. Counsellors should delve in to addressing the emotional, psychological, and socio-economic consequences that the students have experienced or are currently engaged in the child labour. Child labour often exposes children to physically and emotionally challenging situations. Counsellor should be prepared to address trauma-related issues, such as anxiety, depression, post-traumatic stress disorder (PTSD), and other emotional distress. The consequences of child labour result in interrupted or limited access to education. Counsellors should work towards educational reintegration, offering support to bridge educational gaps and helping children catch up academically.

Counsellors should also understand and address family dynamics that may contribute to child labour. This could involve family counselling to improve communication, resolve conflicts, and create a supportive environment for the child's well-being. Counselling can involve identifying and nurturing the skills and talents of the child. This can empower them to pursue alternative, healthier avenues for personal and professional development.

Moreover, child labour may result in social isolation. Counsellors should work towards reintegrating these students into their schools, fostering positive social relationships and connections. Similarly, counsellors can play a role in advocating for policies and programs that address child labour issues. Empowering children to express their needs and rights is crucial for fostering a sense of agency and self-advocacy. Counsellors can also provide psychoeducation to families about the negative impacts of child labour on a child's development. This includes promoting awareness about the importance of education, child rights, and the long-term

consequences of child labour. Engage with the community to raise awareness about the harmful effects of child labour and to promote a supportive environment for children. This can involve community-based counselling and educational programs. Counsellors can contribute to the development and implementation of preventive strategies to address the root causes of child labor, such as poverty, lack of access to education, and social inequalities.

In summary, counselling for child labour involves a holistic approach that addresses the immediate emotional needs of the child while also working towards long-term solutions, including education, skills development, family support, and community engagement. It requires collaboration with various stakeholders to create a supportive environment for the well-being and development of children.

### **Conclusion**

In conclusion, the influence of child labour on the academic performance of students is profound and detrimental, impacting their educational journey in multifaceted ways. The grim reality is that students engaged in labour often face numerous challenges that hinder their ability to thrive academically. The adverse effects manifest in several dimensions, including disrupted access to education, compromised cognitive development, and heightened emotional distress. The interruption of formal education due to the demands of labour translates into missed learning opportunities, resulting in educational gaps that can be challenging to bridge. Furthermore, the physical and mental toll of labour can impede a child's cognitive abilities, hindering their capacity to concentrate, comprehend, and retain information effectively. In essence, recognizing and addressing the influence of child labour on academic performance is not just an educational concern but a moral imperative as every child deserves the right to a childhood free from exploitation, and only through concerted efforts can we pave the way for a future where education becomes the beacon of hope and empowerment for every child, irrespective of their socio-economic circumstances.

### **Recommendations**

Based on the findings of the study, it was recommended that:

1. Government should enhance parental economic stability through job creation and financial support can help reduce child labour and improve students' academic performance.

2. Strengthening school support systems by providing scholarships, uniforms, and enforcing anti-child labour laws will ensure students remain in school and focus on their education.
3. Expanding counselling services and community awareness programs through PTAs, SBMCs, and local engagement will help address the negative impact of child labour and promote better academic outcomes.

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## EARLY CHILDHOOD NUTRITIONAL PRACTICE: PERSPECTIVE OF ISLAMIC EDUCATION

BY

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### ABSTRACT

*Early childhood nutrition is fundamental to a child's physical, cognitive, and spiritual development, shaping lifelong health and well-being. From an Islamic educational perspective, nutrition is viewed holistically, integrating physical sustenance with spiritual and ethical dimensions. This study explores early childhood nutritional practices guided by Islamic teachings, emphasizing the synthesis of religious principles with contemporary nutritional science. The Objectives of this paper are to: examine Qur'anic and Prophetic teachings on early childhood nutrition, particularly concepts such as moderation, consumption of wholesome (**ṭayyib**) food, and gratitude for sustenance; explore practical applications of Islamic nutritional guidelines, including breastfeeding, the introduction of solid foods, and the role of communal meals in social and moral development; analyze the responsibilities of parents and educators in fostering healthy eating habits based on both Islamic teachings and modern nutritional science; and provide a faith-based yet evidence-informed framework for implementing effective early childhood nutrition practices. The Key Findings of the study highlight breastfeeding as the optimal form of early nourishment, the significance of introducing solid foods at appropriate times, and the role of communal eating in fostering social values. Islamic teachings emphasize the ethical and spiritual aspects of nutrition, encouraging balance, purity, and gratitude. Parents and educators are seen as stewards of children's well-being, entrusted with providing nutritionally and spiritually enriching diets. In conclusion, by integrating Islamic teachings with contemporary nutritional knowledge, the study offers a comprehensive framework that supports holistic child development. The findings underscore the interconnectedness of physical, cognitive, and spiritual growth, advocating for dietary practices that align with ethical and religious values. Ultimately, this approach not only benefits individual children but also strengthens families and communities by fostering a culture of health, gratitude, and mindful eating.*

### Introduction

Nutrition is a cornerstone of early childhood development, shaping not only physical health but also cognitive abilities, emotional stability, and social skills. The early years of life are a critical window for growth and development, making proper nutrition essential for laying the foundation for a child's future well-being. In Islamic educational thought, this responsibility begins even

before birth, with an emphasis on the role of parents in fostering a nurturing environment and ensuring the provision of pure, wholesome food in accordance with divine guidance.

Grounded in the Quran and the Hadith, Islamic teachings offer a holistic approach to nutrition that goes beyond physical sustenance to encompass ethical, spiritual, and communal dimensions. From the encouragement of breastfeeding as the optimal form of nourishment for infants to the emphasis on consuming halal (permissible) and tayyib (pure) food, Islamic principles provide a comprehensive framework for promoting health and well-being. These teachings emphasize the interconnectedness of physical and spiritual health, highlighting the moral responsibility of parents and caregivers in nurturing the next generation.

By integrating these religious principles with insights from contemporary nutritional science, a nuanced understanding of early childhood nutrition emerges—one that is both rooted in faith and informed by evidence-based practices. This article delves into early childhood nutrition from an Islamic educational perspective, exploring the religious, ethical, and practical considerations that inform nutritional care. It aims to shed light on how these timeless teachings can guide modern parenting practices, ensuring a balanced and holistic approach to fostering healthy, resilient, and morally conscious individuals.

### **The Concept of Early Childhood Nutrition**

Early childhood nutrition plays a crucial role in the physical, cognitive, and emotional development of children. Proper nutrition during the early years of life provides the foundation for lifelong health, influencing immune function, brain development, and overall well-being (Black et al., 2017). The period from birth to five years is particularly significant as it represents a critical window for growth and development. Ensuring that children receive adequate nutrition during this time helps prevent malnutrition, supports cognitive abilities, and fosters healthy eating habits that persist into adulthood (UNICEF, 2020).

### **Key Nutritional Components for Early Childhood**

A well-balanced diet for young children should include:

1. Breastfeeding – The WHO (2021) recommends exclusive breastfeeding for the first six months of life, followed by continued breastfeeding alongside complementary foods up to two years or beyond. Breast milk provides essential nutrients, antibodies, and bioactive compounds that support immune function and brain development.

2. Complementary Feeding – After six months, infants require additional nutrients from complementary foods. These foods should be nutrient-dense, including sources of iron, zinc, and vitamins A, D, and C, to support healthy growth and prevent deficiencies (Dewey & Vitta, 2013).
3. Macronutrients and Micronutrients – Carbohydrates, proteins, and fats provide essential energy and building blocks for growth. Micronutrients such as iron, calcium, and folate play vital roles in brain development, bone formation, and overall physiological functions (UNICEF, 2020).
4. Hydration – Adequate fluid intake is essential for maintaining bodily functions and preventing dehydration. Water and natural sources of hydration, such as breast milk and fruit-based fluids, are recommended over sugary beverages (Popkin et al., 2019).

Early childhood nutrition is a fundamental determinant of lifelong health and development. Adequate nutrition during the early years supports cognitive, immune, and physical growth while preventing malnutrition-related complications. Despite various challenges, strategies such as breastfeeding promotion, improved food security, and parental education can significantly enhance childhood nutritional outcomes. Integrating evidence-based approaches with supportive policies will ensure a healthier future for children worldwide.

### **The Importance of Early Childhood Nutrition**

Early childhood, encompassing the formative years from birth to age five, is a period of rapid physical, cognitive, and emotional development. This phase lays the foundation for lifelong health, learning, and well-being, making proper nutrition a cornerstone of a child's future potential. According to the World Health Organization (WHO, 2020), adequate nutrition during this critical window supports healthy growth, optimal brain development, and resilience against diseases. Conversely, nutritional deficiencies during early childhood can lead to severe and often irreversible consequences, such as impaired cognitive abilities, stunted growth, weakened immune systems, and increased vulnerability to chronic illnesses later in life.

In the context of Islamic teachings, the emphasis on early childhood nutrition aligns with the holistic care and responsibility entrusted to parents. The Quran and the Hadith underscore the importance of nurturing children physically, emotionally, and spiritually. A key aspect of this is breastfeeding, which is explicitly mentioned in the Quran: "And mothers shall breastfeed their

children for two full years, for those who desire to complete the term" (Quran 2:233). This verse not only highlights the nutritional value of breastfeeding but also underscores its role in promoting maternal-infant bonding and emotional security.

Breastfeeding is celebrated in Islamic tradition as the natural and ideal method of nourishing infants. Modern science supports this perspective, recognizing breast milk as uniquely tailored to meet the evolving nutritional and immunological needs of the growing child. It contains essential nutrients, antibodies, and enzymes that enhance physical health while also fostering cognitive and emotional development. Furthermore, the act of breastfeeding strengthens the mother-child relationship, offering comfort, protection, and a sense of trust during the earliest and most vulnerable stage of life.

By prioritizing practices like breastfeeding and emphasizing the consumption of pure, halal, and tayyib (wholesome) food, Islamic teachings provide a framework for ensuring children receive the best start in life. These principles, when combined with modern scientific knowledge, create a robust foundation for addressing the multifaceted needs of early childhood, ensuring that children grow into healthy, capable, and ethically conscious individuals.

### **Breastfeeding in Islamic Teachings**

Breastfeeding holds a significant place in Islamic teachings, being highly encouraged as the natural and most beneficial way to nourish an infant. It is regarded as both a physical and spiritual act that nurtures the child while bringing immense reward to the mother. The Prophet Muhammad (peace be upon him) is reported to have said, "For every suckling of the child, the mother is rewarded" (Al-Bukhari, as cited in Ali & Alam, 2016). This highlights the dual significance of breastfeeding in Islam—not only as a means of providing essential nutrition but also as an act of worship and love that earns spiritual merit.

The Quran explicitly recommends breastfeeding for up to two years: "And mothers shall breastfeed their children for two full years, for those who desire to complete the term" (Quran 2:233). This guidance aligns seamlessly with modern health recommendations, which advocate exclusive breastfeeding for the first six months of life, followed by continued breastfeeding alongside the introduction of complementary foods until at least two years. Breastfeeding is recognized by health experts as the gold standard for infant nutrition, offering a unique composition of nutrients, antibodies, and enzymes that support the child's growth and immunity.

In addition to its physical benefits, breastfeeding plays a profound role in the emotional and spiritual development of the child. The intimate act of breastfeeding fosters a sense of security, trust, and attachment between the mother and child. This connection is foundational for the child's emotional stability and helps to build a sense of love and comfort during the earliest and most formative stage of life. Islamic teachings place great emphasis on creating strong familial bonds, and breastfeeding serves as a powerful means of strengthening the relationship between mother and child.

Furthermore, modern research has shown that breastfeeding is associated with enhanced cognitive outcomes in children. Studies have linked breastfeeding to improved brain development, better academic performance, and a reduced risk of neurodevelopmental disorders. These findings reinforce the Islamic emphasis on nurturing not only the body but also the mind and spirit of the child. By encouraging breastfeeding, Islamic teachings advocate for a holistic approach to child-rearing that prioritizes physical health, emotional well-being, and intellectual growth.

Breastfeeding in Islam is thus more than a nutritional practice—it is a deeply valued act of love, care, and devotion. It exemplifies the balance between meeting the child's physical needs and fostering their emotional and spiritual development, reflecting the comprehensive and compassionate nature of Islamic guidance on parenting.

### **Weaning and the Introduction of Complementary Foods.**

In Islamic tradition, the process of weaning marks a significant developmental milestone in a child's life, symbolizing the gradual transition from exclusive dependence on breast milk to a more diverse diet. While the Quran advocates breastfeeding for up to two full years as an ideal (Quran 2:233), it also acknowledges that weaning can occur earlier, provided it is a mutual decision made with wisdom and compassion by both parents. This flexibility highlights Islam's emphasis on practical and considerate parenting, tailored to the needs of the child and family circumstances. The Quran mentions, "And We have enjoined upon man [care] for his parents. His mother carried him, [increasing her] in weakness upon weakness, and his weaning is in two years" (Quran 31:14), underscoring the importance of this transitional period in nurturing a child's growth.

Weaning in Islamic teachings is seen as a gradual process, guided by the readiness of the child. It requires patience and care to ensure that the introduction of solid foods supports the child's continued physical, cognitive, and emotional development. Modern nutrition experts echo this approach, recommending that complementary foods be introduced around six months of age while breastfeeding continues, as breast milk remains a crucial source of nutrition during this time.

The introduction of complementary foods in Islam is not merely a practical matter but one imbued with ethical and spiritual significance. Islamic dietary principles emphasize the importance of consuming halal (permissible) and tayyib (pure and wholesome) foods, as stated in the Quran: "O you who have believed, eat from the good things which We have provided for you and be grateful to Allah if it is [indeed] Him that you worship" (Quran 2:172). This guidance ensures that children are provided with food that is not only nutritionally adequate but also ethically sourced, free from impurities, and prepared with care and intention.

Islamic teachings encourage the consumption of natural and wholesome foods, such as fresh fruits, vegetables, grains, and legumes, which align with modern dietary guidelines for balanced nutrition. These foods provide essential vitamins, minerals, and energy needed for a child's growth and development. The practice of introducing foods that are halal and tayyib fosters an awareness of ethical consumption from an early age, instilling in children a sense of gratitude and mindfulness about the blessings of sustenance.

Additionally, the weaning process in Islam often involves a social and celebratory dimension, reinforcing the communal and spiritual bonds within the family. Prayers and acts of gratitude to Allah for the child's health and growth may accompany this transition, further embedding the significance of spiritual awareness in everyday practices.

By combining practical nutritional advice with ethical and spiritual guidance, Islamic teachings on weaning provide a comprehensive framework for supporting a child's journey toward independence. This holistic approach ensures that the transition to complementary foods not only nourishes the body but also cultivates a sense of gratitude, responsibility, and connection to one's faith and community.

## **The Role of Parents in Shaping Nutritional Practices**

Parents hold a pivotal role in shaping the dietary habits and attitudes of their children, especially during the formative years when lifelong patterns are established. In Islamic education, the family is regarded as the first and most influential institution of learning, where children are taught the core principles of health, hygiene, and nutrition. This foundational role is rooted in the belief that parents are stewards of their children, entrusted by Allah with the responsibility of nurturing them in all aspects of life, including their physical well-being.

Islamic teachings encourage parents to model healthy eating behaviors, as children are highly observant and tend to mimic the habits of their caregivers. Providing a balanced diet, rich in wholesome and nutritious foods, is emphasized to ensure the child's optimal growth and development. Parents are advised to prioritize halal (permissible) and tayyib (pure and wholesome) foods, which reflect not only the physical needs of the body but also the ethical and spiritual dimensions of consumption.

The Prophet Muhammad (peace be upon him) emphasized the importance of moderation in eating, offering timeless guidance that is highly relevant in today's context of rising obesity and unhealthy eating patterns. He stated: "The son of Adam does not fill any vessel worse than his stomach. It is sufficient for the son of Adam to eat a few mouthfuls to keep him going. If he must do that, then a third for his food, a third for his drink, and a third for air" (Al-Tirmidhi, as cited in Nasr & Oubari, 2016). This hadith highlights the virtue of mindful eating and the importance of avoiding overeating, fostering habits that promote physical health and self-discipline. Parents can instill these values by encouraging children to eat slowly, recognize their body's hunger and fullness signals, and appreciate the food they consume.

Beyond the provision of nutritious meals, parents are also responsible for cultivating a sense of gratitude and mindfulness in their children regarding food. Islamic teachings provide practical ways to instill these values, such as encouraging children to say "Bismillah" (in the name of God) before eating and "Alhamdulillah" (praise be to God) after finishing a meal. These practices serve as reminders of the divine source of all sustenance and promote an attitude of thankfulness and humility. Such spiritual awareness not only enhances the mealtime experience but also helps children develop a deeper appreciation for the blessings of nourishment and the effort that goes into preparing food.

Moreover, parents are encouraged to teach children about the ethical considerations of food, such as minimizing waste, sharing with others, and understanding the significance of charity. By instilling these values, parents nurture a sense of social responsibility and compassion in their children, ensuring that their relationship with food is not only about consumption but also about contributing to the well-being of others.

In summary, the role of parents in shaping their children's nutritional practices extends far beyond providing meals. It encompasses modeling healthy behaviors, teaching moderation, fostering gratitude, and instilling ethical values related to food. By combining these principles with the teachings of Islam, parents can guide their children toward a balanced, mindful, and spiritually enriched approach to nutrition, laying the foundation for a healthy and responsible lifestyle.

### **Islamic Ethical Considerations in Child Nutrition**

Islamic teachings provide a holistic approach to child nutrition that transcends physical sustenance to address ethical, spiritual, and social dimensions. The principles of halal (permissible) and tayyib (pure and wholesome) form the foundation of dietary guidelines in Islam. These concepts not only ensure that children consume food that meets the highest standards of purity and health but also instill values of ethical consumption and mindful living.

The Quran states: "O mankind, eat from whatever is on earth [that is] lawful and pure and do not follow the footsteps of Satan. Indeed, he is to you a clear enemy" (Quran 2:168). This verse underscores the importance of providing children with food that is not only physically beneficial but also ethically sourced and free from harm to individuals, animals, or the environment.

Parents are encouraged to ensure that the food they provide is obtained through lawful and honest means, avoiding any form of exploitation or injustice. This emphasis on ethical sourcing aligns with contemporary concerns about sustainable agriculture, fair trade, and environmental stewardship. Teaching children about the origin of their food and the importance of ethical practices helps them develop a sense of responsibility toward the natural world and the people involved in producing their sustenance.

In addition to the emphasis on ethical consumption, Islamic teachings highlight the importance of social justice and caring for those in need. The Prophet Muhammad (peace be upon him) profoundly stated: "He is not a believer whose stomach is filled while his neighbor goes hungry"

(Muslim, as cited in Ali & Alam, 2016). This powerful reminder encourages individuals and families to be mindful of the needs of others and to actively work toward reducing hunger and inequality in their communities.

Parents play a critical role in instilling these values in their children. By teaching them the importance of sharing their blessings and contributing to charitable causes, parents foster a sense of compassion and social responsibility. Acts such as sharing food with neighbors, contributing to food drives, or inviting less fortunate individuals to meals can become practical lessons in empathy and generosity. These practices not only benefit society but also strengthen the child's spiritual connection by fulfilling the moral and ethical responsibilities emphasized in Islam.

Furthermore, children can be encouraged to minimize food waste as part of their ethical upbringing. Islamic teachings caution against extravagance and wastefulness, as stated in the Quran: "Indeed, the wasteful are brothers of the devils, and ever has Satan been to his Lord ungrateful" (Quran 17:27). Parents can model mindful consumption by teaching children to take only what they need, value their meals, and creatively repurpose leftovers, fostering gratitude and stewardship over resources.

In summary, Islamic ethical considerations in child nutrition encompass the principles of consuming halal and tayyib food, promoting social justice, and encouraging sustainable practices. These values are deeply interwoven with spiritual teachings, offering children a framework that balances their physical health with their moral and ethical growth. By instilling these principles, parents nurture individuals who are not only healthy but also compassionate, socially responsible, and spiritually aware, contributing to the well-being of both their communities and the planet.

### **The Integration of Islamic Teachings with Modern Nutritional Science**

Islamic teachings on early childhood nutrition, rooted in the Quran and Sunnah, provide a timeless framework that complements and aligns with modern nutritional science. These principles emphasize practices such as breastfeeding, consuming wholesome foods, and adopting moderation, all of which are supported by contemporary health research. This alignment underscores the practicality and universality of Islamic guidance, offering a holistic approach to child nutrition that addresses physical, emotional, and spiritual well-being.

One of the most notable points of convergence between Islamic teachings and modern nutritional science is the emphasis on breastfeeding. The Quran encourages mothers to breastfeed for up to two years (Quran 2:233), a recommendation echoed by the World Health Organization (WHO). The WHO advises exclusive breastfeeding for the first six months of life, followed by continued breastfeeding alongside the introduction of complementary foods. Scientific studies have consistently shown that breast milk provides essential nutrients, antibodies, and enzymes that promote optimal growth, boost immunity, and support cognitive development. This harmony between Islamic principles and scientific findings highlights the enduring relevance of Islamic guidance in nurturing young children.

The Islamic emphasis on consuming halal (permissible) and tayyib (pure and wholesome) foods aligns with modern nutritional advice advocating for a diet rich in natural, minimally processed, and nutrient-dense foods. Fresh fruits, vegetables, whole grains, and lean proteins are central to both Islamic dietary principles and contemporary guidelines for balanced nutrition. This overlap ensures that children receive the vitamins, minerals, and energy they need for healthy growth while fostering ethical and mindful eating habits.

Moderation, another key aspect of Islamic dietary guidance, also finds strong support in modern nutritional science. The Prophet Muhammad (peace be upon him) advised against overeating, stating: "The son of Adam does not fill any vessel worse than his stomach. It is sufficient for the son of Adam to eat a few mouthfuls to keep him going" (Al-Tirmidhi). This principle resonates with current recommendations to avoid overconsumption and adopt mindful eating practices to prevent obesity and related health issues. Teaching children moderation from an early age not only promotes physical health but also instills discipline and self-control.

Modern research has further highlighted the critical role of early childhood nutrition in shaping long-term health outcomes, including cognitive development, metabolic health, and resistance to chronic diseases. This scientific understanding reinforces the Islamic emphasis on the early years as a vital period for establishing healthy habits. By integrating these insights with Islamic teachings, parents and caregivers can adopt a comprehensive approach that nurtures the whole child—body, mind, and spirit.

The integration of Islamic principles with modern nutritional science also provides practical solutions for contemporary challenges. For instance, in today's fast-paced world, families can

draw on Islamic values to resist the lure of unhealthy, processed foods and prioritize home-cooked, ethically sourced meals. Additionally, the emphasis on gratitude and mindfulness in Islam—practices like saying “Bismillah” before eating and “Alhamdulillah” after meals—can help counteract the disconnection and lack of awareness often associated with modern eating habits.

In conclusion, the integration of Islamic teachings with modern nutritional science offers a balanced and holistic framework for early childhood nutrition. By harmonizing the timeless wisdom of Islamic guidance with evidence-based practices, parents can ensure their children’s physical health while nurturing their ethical and spiritual growth. This synergy enables families to navigate modern nutritional challenges while staying grounded in their faith and values, fostering the development of healthy, conscientious, and well-rounded individuals.

### **Conclusion**

Early childhood nutrition is a foundational component of a child’s overall development, influencing not only physical growth but also cognitive, emotional, and social well-being. Islamic educational perspectives provide a holistic approach to nurturing healthy practices during this critical stage of life. Central to these teachings is the emphasis on breastfeeding, which is highlighted in the Qur’an as a natural and beneficial practice for both mother and child. Breastfeeding is not only a source of optimal nutrition but also fosters a deep emotional bond, contributing to the child’s sense of security and love.

Additionally, the Islamic focus on consuming halal (permissible) and tayyib (pure, wholesome) food underscores the importance of providing children with clean, nutritious, and ethically sourced sustenance. This principle aligns with modern nutritional science, which advocates for balanced diets rich in essential nutrients to support healthy growth and development. Parents are entrusted with the responsibility of instilling positive dietary habits, guided by the belief that nurturing the physical body is integral to spiritual and moral growth.

When Islamic principles are integrated with contemporary nutritional knowledge, they form a robust framework for promoting a child’s overall well-being. This synergy encourages parents to make informed, ethical, and mindful choices in their children’s diet, fostering resilience and a deep awareness of the interconnectedness between health, faith, and responsibility. By emphasizing both the material and spiritual dimensions of nutrition, Islamic teachings play a

vital role in raising healthy, empathetic, and socially conscious individuals, ultimately contributing to the betterment of society as a whole.

### **Challenges in Early Childhood Nutrition**

Despite the recognized importance of early childhood nutrition, several challenges hinder proper nutritional practices. These include:

**Malnutrition** – Both undernutrition (stunting, wasting, and micronutrient deficiencies) and overnutrition (childhood obesity) pose significant health risks (WHO, 2021).

**Socioeconomic Factors** – Limited access to nutritious foods due to poverty and food insecurity affects dietary quality (Black et al., 2017).

**Cultural and Dietary Practices** – Traditional beliefs and feeding practices influence food choices, sometimes leading to imbalanced nutrition (Dewey & Vitta, 2013).

**Parental Knowledge and Awareness** – Lack of knowledge about proper infant and toddler nutrition can result in inadequate dietary patterns (UNICEF, 2020).

### **Recommendations:**

1. To address these challenges, several strategies can be implemented:
2. **Promoting Exclusive Breastfeeding** – Encouraging breastfeeding through health policies, workplace support, and maternal education improves infant nutrition (WHO, 2021).
3. **Enhancing Food Security** – Ensuring access to affordable, nutritious foods through social programs and agricultural policies can combat malnutrition (UNICEF, 2020).
4. **Nutritional Education** – Educating parents and caregivers about healthy dietary practices fosters better feeding behaviors and food choices (Black et al., 2017).
5. **Policy Interventions** – Government initiatives such as fortification programs, school feeding programs, and nutrition-sensitive policies play a crucial role in improving early childhood nutrition (Bhutta et al., 2013).

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**EFFECTS OF INTEGRATING INDIGENOUS KNOWLEDGE AND PRACTICES ON ACADEMIC PERFORMANCE OF POST-BASIC SCHOOL TWO (PBS-II) STUDENTS IN PHYSICS ACROSS RURAL AND URBAN SCHOOLS IN TARABA STATE, NIGERIA**

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**ABSTRACT**

*The study examined the effect of integrating indigenous knowledge into Physics teaching on the academic performance of Post Basic school students in rural and urban schools in Taraba State, Nigeria. Guided by three objectives, research questions, and hypotheses, a quasi-experimental design with pre-test, post-test, and non-equivalent control groups was adopted. The total number of Post Basic schools in Taraba State is 304 involving 189 schools in urban areas and 115 in rural areas across the ten (10) education zones with a population of 14,495 students offering Physics for the 2023/2024 session comprising of 8,395 male and 6,100 female students from public Post Basic Schools. Meanwhile, the targeted population of the study was all the 3,259 Post Basic School Two (PBS-II) students offering Physics in Jalingo education zone. The sample comprised 175 students (88 males, 87 females) from four purposively selected schools (two urban, two rural) in Jalingo education zone, assigned to experimental (97) and control (78) groups. Hypothesis two was tested using t-test. Data collected using a Physics Performance Test (PPT) with a reliability coefficient of 0.83 (K-R 20) were analyzed with mean, standard deviation, and ANCOVA. Findings showed a significant difference in performance between students taught using indigenous knowledge and those taught conventionally ( $F(1, 174) = 19.518, p < 0.05$ ). No significant difference was found between rural and urban students' performance, though rural students scored slightly higher ( $M = 45.58$  vs.  $M = 42.36; p = 0.255$ ). Additionally, no significant interaction effect was observed between teaching method and school location ( $F(1, 174) = 1.413, p > 0.05$ ). The study recommends creating awareness about the relevance of indigenous knowledge in Physics education among students and the general public.*

**Keywords:** *integrating indigenous knowledge and practices, urban, rural, academic performance*

## **Introduction**

The advancement of any nation is closely tied to science education, which drives technological and socio-economic development. Physics, as a core branch of science, plays a vital role in fostering innovation, improving quality of life, and supporting economic growth. Advanced nations prioritize Physics education to inspire research and innovation, yielding significant societal benefits (Nebo, 2017).

In Nigeria, the Federal Government has introduced basic science and technology education to lay a foundation for scientific literacy. At the post-basic level, subjects like Physics are taught to enhance problem-solving skills, foster scientific attitudes, and nurture interest in science—all essential for national progress (Chima, 2021). Physics serves as a gateway to careers in engineering, medicine, and environmental sciences, further underscoring its importance (Anaeto et al., 2016).

Despite its significance, Physics performance in Nigeria remains poor, with WAEC results showing an average credit pass rate of 25.58% over 11 years. Challenges include outdated resources, inadequate laboratory equipment, limited technological access, uninspiring teaching methods, and low student motivation (Sa'ad, Adamu & Abdullahi, 2014). Urban schools, though better resourced, often face overcrowding, while rural schools grapple with teacher shortages and lack of essential facilities, worsening performance disparities (Ellah & Ita, 2017).

Historically, African communities displayed advanced knowledge in blacksmithing, pottery, and traditional tools, applying Physics concepts like flotation and projectile motion (Sithole, 2016; Ndangwa, 2017). However, Western teaching methods have overshadowed these practices, leading to curriculum imbalances and disengagement (Mishack, Fidelis & Anamezie, 2021). Integrating indigenous knowledge into Physics education, or Ethno-Physics, bridges this gap by using culturally relevant examples, such as bows and arrows or canoes, to illustrate concepts like projectile motion and buoyancy (Handayani et al., 2018; Adekunle, 2017).

Indigenous Knowledge and Practices promotes experiential learning, inclusivity, and cultural pride while enhancing comprehension and motivation through relatable examples and local materials (McCausland, 2020; Sithole, 2021). By addressing systemic challenges and reducing

urban-rural disparities, this approach fosters equity and improves academic outcomes (Buabeng et al., 2014; Snively & Williams, 2016).

This study examines the impact of integrating indigenous knowledge into Physics education on the academic performance of post-basic school students in both rural and urban Taraba State. It aims to address challenges like low performance and disconnects between cultural contexts and conventional teaching methods by creating a culturally sensitive and inclusive Physics curriculum that improves engagement, reduces disparities, and enhances learning outcomes.

### **Statement of the Problem**

Physics plays a pivotal role in technological innovation and national development, yet students' performance in the subject in Taraba State has remained alarmingly poor. The average credit pass rate in WAEC Physics examinations over the past decade is just 25.58% (WAEC, 2020). This underperformance is attributed to factors such as inadequate teaching resources, outdated instructional methods, overcrowded classrooms in urban areas, and shortages of teachers and laboratory facilities in rural schools (Sa'ad, Adamu, & Abdullahi, 2014; Ellah & Ita, 2017).

Moreover, the reliance on Western pedagogical approaches often neglects students' socio-cultural contexts, making Physics abstract and unrelatable (Mishack, Fidelis & Anamezie, 2021). Research suggests that integrating indigenous knowledge into Physics education—an approach known as Ethno-Physics—can make learning more culturally relevant and engaging, thereby improving student interest and performance (Handayani, Wilujeng, & Prasetyo, 2018; Sithole, 2016). However, this approach remains largely unexplored in Taraba State. This study aims to address this gap by examining the effects of integrating indigenous knowledge and practices on the academic performance of Post-Basic School Two (PBS-II) students across rural and urban schools in Taraba State, Nigeria.

### **Purpose of the Study**

The purpose of the study is to determine the effects of Integrating Indigenous Knowledge and Practices on Academic Performance of Post-Basic School Two (PBS-II) Students in Physics across Rural and Urban Schools in Taraba State, Nigeria. The specific objectives of the study are to:

1. Determine the difference between the academic performance of PBS-II students offering Physics exposed to indigenous knowledge and practices and those exposed to conventional lecture method in Taraba State.
2. Determine the difference in mean academic performance scores between rural and urban Post-Basic School Two (PBS-II) students taught Physics with the integration of Indigenous Knowledge and Practices in Taraba State.
3. Determine the interaction effect of treatment and school location on students' academic performance in Physics in Taraba State.

### Research Questions

The following research questions are raised to guide the study:

1. What are the pre-test and post-test scores of Post Basic School two (PBS-II) students taught Physics using integration of indigenous knowledge and practices and those taught using the conventional instructional method in Taraba State?
2. What are the mean pre-test and post-test scores of Post Basic School two (PBS-II) students in rural and urban areas taught Physics using integration of indigenous knowledge and practices in Taraba State.?
3. What is the interaction effect of treatment and school location on students' academic performance in Physics in Taraba State.?

### Hypotheses

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

**H<sub>01</sub>:** There is no significant difference in academic performance in Physics between PBS-II students exposed to indigenous knowledge integration and those exposed to conventional lecture method in Taraba State.

**H<sub>02</sub>:** There is no significant difference in the mean academic performance scores of Post Basic School two (PBS-II) students in rural and urban areas taught Physics using integration of indigenous knowledge in Taraba State.

**H<sub>03</sub>:** There is no significant interaction effect of treatment and school location on students' academic performance in Physics in Taraba State.

### **Literature Review**

This study is grounded in Ausubel's (1963) theory of meaningful learning and Vygotsky's (1978) Sociocultural Theory of Learning. Ausubel emphasizes the integration of new knowledge with existing cognitive structures, suggesting that linking indigenous practices with Physics concepts enhances understanding, relevance, and academic performance. Vygotsky highlights the role of social and cultural contexts in learning, where indigenous practices provide culturally relevant teaching, expanding students' Zone of Proximal Development (ZPD) through collaborative and scaffolded learning experiences. This aligns with promoting deeper cognitive engagement in Physics education.

### **Concept of Indigenous Knowledge and Practices**

Indigenous knowledge encompasses cultural, environmental, and practical wisdom passed down through generations. It emphasizes harmony with nature and addresses local challenges using sustainable methods. Traditional tools like atlatls, bows, slings, and canoes can be linked to Physics concepts such as projectile motion, energy conservation, and fluid dynamics. In Taraba State, ethnic groups like the Mumuye and Kona possess a wealth of indigenous practices that can enrich Physics teaching by bridging theoretical concepts with real-world applications, fostering cultural sensitivity, and improving student engagement.

### **Integration of Indigenous Knowledge and Practices into Teaching**

Integrating indigenous practices into education bridges traditional wisdom and modern science. Approaches include inclusive, exclusive, and overlapping perspectives, with the inclusive approach fostering cultural appreciation and deeper learning. Practical applications of indigenous methods, such as projectiles and buoyancy, demonstrate Physics' relevance in everyday life, making it relatable and engaging for students.

## **School Location and Students' Performance in Physics**

Disparities between urban and rural schools in Taraba State affect Physics education. Urban schools often have better resources but face overcrowding, while rural schools struggle with teacher shortages and inadequate equipment. School location influences cultural context, access to resources, and integration of indigenous knowledge. Urban areas may have diverse but less traditional student populations, while rural areas maintain stronger ties to indigenous practices. Tailored strategies are needed to address these differences, enhance engagement, and improve academic performance in Physics.

## **Empirical Review**

Mishack (2021) studied the integration of Western science and African indigenous knowledge (AIK) in measuring gravitational acceleration in Nsukka, Enugu State. The study found that blending Western science with AIK improved students' understanding of gravitational acceleration, enhanced Physics achievement, and bridged the gender gap.

Ikechuku (2021) examined the effects of school location on students' Physics achievement using the 5E learning cycle in Delta State, Nigeria. The results showed no significant difference in achievement between rural and urban students taught with the 5E model. The study lacked information on the instrument's reliability and validity, raising concerns about its findings.

Soliu (2017) investigated the influence of school location and type on senior secondary students' Physics achievement in Ilorin, Kwara State, found rural students outperformed urban students, while private schools outperformed public schools. While sharing a similar purpose and design with the present study, Soliu focused solely on school location and type, differing in study area, instruments, and scope.

## **Methodology**

The study employed a quasi-experimental pre-test, post-test non-equivalent control group design. The population included 14,495 PBS-II students offering Physics (8,395 males and 6,100 females) in public schools across Taraba State's sixteen local government areas during the 2023/2024 academic session. A sample of 175 students was selected using purposive sampling technique with Jalingo zone chosen from the state's ten education zones. T-test was used in

testing hypothesis two. The study utilized an adapted Physics Performance Test (PPT) consisting of 50 multiple-choice items based on WASSCE and NECO questions from 2013–2022, covering topics such as Projectiles, Equilibrium of Bodies in Liquids, and Energy. The instrument was validated by experts, and a pilot test at Government Science Secondary School, Jalingo, yielded a reliability coefficient of 0.83 (Kuder-Richardson 20 formula). Mean and standard deviation addressed research questions, while hypotheses were tested at a 0.05 significance level using ANCOVA, analyzed with SPSS software.

## Results

Three research questions were asked and answered using descriptive statistics while the three hypotheses were tested using Analysis of Covariance (ANCOVA) at 0.05 level of significance

**Research Question 1:** What are the pre-test and post-test scores of Post Basic School two (PBS-II) students taught Physics using integration of indigenous knowledge and practices and those taught using the conventional instructional method?

**Table 1: Pretest and Post-test Mean Scores of Students taught Physics using Indigenous and Practices and those taught using the Conventional Instructional Method**

Group	N	Pre – test		Post test		Mean Difference (Gain)
		MEAN	S.D	MEAN	S.D	
Experimental (I)	97	31.81	9.23	44.12	13.81	12.31
Control (II)	78	34.77	10.00	38.36	10.94	3.59

Table 1 shows the pretest and post-test scores for students taught using indigenous knowledge and practices versus the conventional lecture method. The indigenous practices group improved from a pretest mean of 31.81 to a post-test mean of 44.12, with a mean difference of 12.31. The lecture method group increased from 34.77 to 38.36, with a smaller mean difference of 3.59.

While both methods improved performance, the indigenous practices group demonstrated a significantly larger improvement, suggesting that incorporating indigenous practices may enhance students' understanding and retention more effectively. Further inferential analysis could clarify the significance of these differences.

**Research Question 2:** What are the mean pre-test and post-test scores of Post Basic School two (PBS-II) students in rural and urban areas taught Physics using integration of indigenous knowledge and practices?

**Table 2: Pretest and Post-test Mean Scores of Students in Urban and Rural areas taught Physics using Indigenous knowledge and Practices**

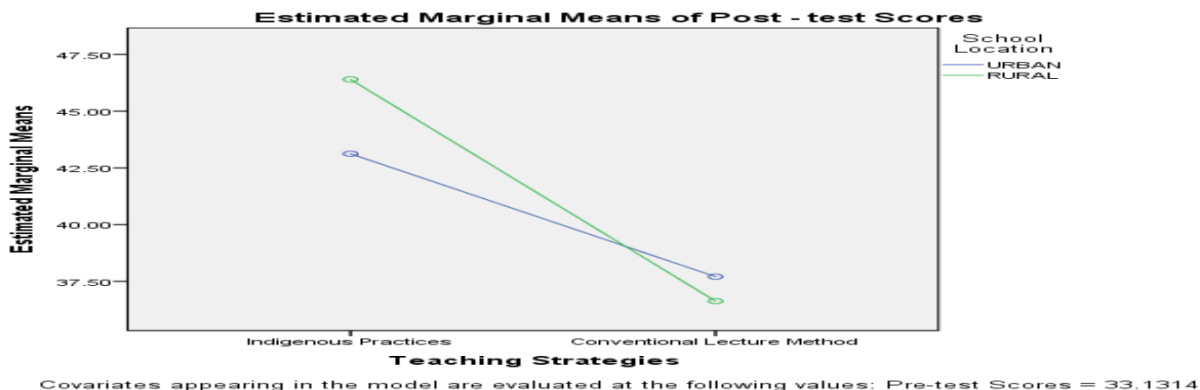
Teaching Methods (Treatment)	Gender	N	Pre-test		Post-test		Mean difference (Gain)
			Mean	S. D	mean score	S.D	
Indigenous Practices	URBAN	44	31.86	8.21	42.36	10.86	10.86 13.81
	RURAL	53	31.77	10.07	45.58	15.80	

Table 3 shows the pre – test and post - test mean academic performance of Post Basic School students in rural and urban areas taught Physics using indigenous practices. The pre – test mean academic performance of Post Basic School students in rural and urban areas taught Physics using indigenous practices are  $\bar{x} = 31.86$ ,  $S.D = 8.21$  and  $\bar{x} = 31.77$ ,  $S.D = 10.07$  respectively. The post – test mean academic performance of Post Basic School students in urban and rural areas taught Physics using indigenous practices are  $\bar{x} = 42.36$ ,  $S.D = 10.86$  and  $\bar{x} = 45.58$ ,  $S.D = 15.80$  respectively. The mean difference between the post – test performance scores of Post Basic School students in rural and urban areas taught projectiles, equilibrium of bodies in liquid and energy using indigenous practices is 3.22 in favour of students in rural areas.

### Research Question 3

What is the interaction effect of treatment and school location on students' academic performance on Physics (projectiles, equilibrium of bodies in liquid and energy)?

**Figure 2: Interaction effects of Teaching Methods and School Location on Students' Academic Performance**



The graph in Figure 2 shows that there is interaction effect between teaching method and school location as shown by the two lines representing urban and rural schools but the interaction effect is not significant on students' academic performance.

**H<sub>01</sub>:** There is no significant difference in academic performance in Physics between PBS-II students exposed to indigenous knowledge integration and those exposed to conventional lecture method.

**Table 3: Summary of ANCOVA of Mean Scores of Students taught Physics using Indigenous knowledge and Practices and those taught using the Conventional Instructional Method**

Source	Type III SumDf of Squares	Mean Square	F	Sig.	Partial Eta Squared	
Corrected Model	7412.214 <sup>a</sup>	4	1853.054	14.619	.000	.256
Intercept	6096.000	1	6096.000	48.091	.000	.221
Pretest	4937.886	1	4937.886	38.955	.000	.186
Teaching methods	2474.061	1	2474.061	19.518	.000	.103
Gender	153.900	1	153.900	1.214	.272	.007
Teaching methods gender	*205.646	1	205.646	1.622	.205	.009
Error	21549.020	170	126.759			
Total	331144.000	175				
Corrected Total	28961.234	174				

a. R Squared = .256 (Adjusted R Squared = .238)

Analysis in Table 3 presented summary of ANCOVA conducted to test whether significant difference exist between the mean performance scores of students taught Physics using indigenous practices and those taught using the conventional methods. The results show that there is significant difference between the performance scores of students taught Physics using indigenous practices and those taught using the conventional methods,  $F(1, 174) = 19.518$ ,  $p < 0.05$  with small effect size as indicated by the partial Eta squared of 0.103.

**H<sub>02</sub>:** There is no significant difference in the mean academic performance scores of Post Basic School students in rural and urban areas taught Physics using indigenous knowledge and practices.

**Table 4: Summary of Independent Sample t – test of Mean Scores of Students in Urban and Rural areas taught Physics using Indigenous Knowledge and Practices**

Gender	N	Mean	S. D	Df	T	p-value	Remark
URBAN	44	42.36	10.86				
RURAL	53	45.58	15.80	95	-1.146	0.255	H <sub>03</sub> not rejected

The results of the independent sample t-test presented in Table 4 revealed that the mean score for urban students ( $M = 42.36$ ,  $SD = 10.86$ ) was slightly lower than that of rural students ( $M = 45.58$ ,  $SD = 15.80$ ). The t-value was -1.146, with 95 degrees of freedom, and the associated p-value was 0.255, which exceeded the conventional significance threshold of 0.05.

Consequently, the study did not find sufficient evidence to reject the null hypothesis, indicating that there was no statistically significant difference in the mean academic performance scores between students in urban and rural areas. This suggests that the indigenous knowledge and practices teaching for Physics were equally effective in both rural and urban settings.

**H<sub>03</sub>:** There is no significant interaction effect of treatment and school location on students' academic performance in Physics.

**Table 5: Summary of ANCOVA of Interaction Effect of Treatment and School Location on Students' Academic Performance in Physics.**

Source	Type Sum Squares	IIDf of	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	7269.488 <sup>a</sup>	4	1817.372	14.243	.000	.251
Intercept	5375.672	1	5375.672	42.130	.000	.199
Pretest	5424.340	1	5424.340	42.511	.000	.200
Teaching methods	2161.476	1	2161.476	16.940	.000	.091
School location	46.067	1	46.067	.361	.549	.002
Teaching methods school location	*180.281	1	180.281	1.413	.236	.008
Error	21691.747	170	127.599			
Total	331144.000	175				
Corrected Total	28961.234	174				

a. R Squared = .251 (Adjusted R Squared = .233)

Analysis in Table 5 presented summary of ANCOVA conducted to test whether there is significant interaction effect of treatment and school location on students' academic performance in Physics. The results show that there is no significant interaction effect of treatment and school location on students' academic performance in Physics,  $F(1, 174) = 1.413$ ,  $p > 0.05$  with very small effect size as indicated by the partial Eta squared of 0.008.

## Discussion

Results indicated that students taught Physics concepts such as projectiles, equilibrium of bodies in liquids, and energy using indigenous knowledge and practices performed better than those taught using conventional instructional methods. This significant difference in academic performance aligns with the findings of various researchers, including Mbaegbu and Osuafor (2023), Oluseyi et al. (2023), Achimugu et al. (2023), Onyemuchi and Owolabi (2022), among others who demonstrated that integrating indigenous perspectives into science teaching enhances students' understanding and performance.

Students in rural schools performed slightly better than those in urban schools. After the integration of indigenous practices, this difference became more pronounced, although not statistically significant. This suggests that indigenous teaching methods are effective in both rural and urban settings, corroborating Soliu (2017), who found a similar rural advantage.

However, this finding contradicts Ikechukwu (2021) and Adebayo, Daniel, & Oladipupo, (2018), who reported no significant differences based on school location. The implication is that indigenous teaching methods can help bridge educational disparities between geographical regions. The slightly better performance of rural students suggests that indigenous teaching methods are effective across different geographical locations.

Similarly, there is no significant interaction effect between teaching methods and school location indicates that indigenous teaching practices are equally effective in both rural and urban settings. This suggests that indigenous teaching methods are effective in both rural and urban settings, corroborating Soliu (2017), who found a similar rural advantage. However, this finding contradicts Ikechukwu (2021) and Adebayo, Daniel, and Oladipupo (2018), who reported no significant differences based on school location. The implication is that indigenous teaching methods can help bridge educational disparities between geographical regions.

### **Conclusion**

The study concludes that integrating indigenous knowledge and practices into Physics teaching significantly improves the academic performance of Post-Basic School Two (PBS-II) students in Taraba State. The approach benefits students equally in both rural and urban areas, with no significant interaction effect between teaching method and school location, highlighting its broad applicability.

### **Recommendations**

Base on the findings of the study, the researcher made the following recommendations:

1. Create awareness among students and the public about the link between indigenous knowledge, practices, and Physics concepts to bridge the gap between indigenous and western epistemologies.
2. Ensure governments and stakeholders provide equal access to facilities and personnel in both rural and urban schools.
3. Encourage teachers to use student-centered approaches and involve parents in supporting students with indigenous practices to boost academic performance.

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**IMPACT OF BOKO HARAM INSURGENCY ON MANAGEMENT OF PUBLIC SENIOR SECONDARY SCHOOLS IN DAMATURU EDUCATION ZONE, YOBE STATE, NIGERIA**

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**ABSTRACT**

*The study examined the Impact of Boko Haram Insurgency on Management of Public Senior Secondary Schools in Damaturu Education Zone, Yobe State, Nigeria. The study was guided by two objectives. The descriptive survey design was employed for the study. The population of the study was made up of 776 teachers (including principals and vice principals) in 11 Public Senior Secondary Schools. Research Advisor (2006) table for determining sample size was used to select 260 participants. The purposive sampling technique was used. The instrument used for data collection was questionnaire titled “Impact of Boko Haram Insurgency on the Management of Secondary Schools questionnaire (IBIMSSQ). Questionnaire items were faced validated by the experts in the Departments of Education Yobe State University. The instrument was also pilot tested using test-retest method and the result yielded a Cronbach alpha coefficient of 0.97. Data were analyzed using the descriptive statistics of mean ( $\bar{x}$ ) and standard deviation for the research questions while inferential statistics of Chi-square was used to test the hypotheses at 0.05 level of significance. The findings of the study revealed that; Boko Haram insurgency has significant impact on funding and loss of human lives in Senior Secondary Schools in Damaturu Education Zone, Yobe State Nigeria. Based on the findings of the study, the following recommendations were made; the federal government should not relent in releasing budgetary allocations to schools faced with insurgency attacks so as to help them overcome the situation for effective teaching and learning. Free bus services should be made available for children and teachers in the rural areas to take them to and from school under tight security to avoid loss of lives.*

**Keywords:** *Impact, Boko Haram, Insurgency and Management*

**Introduction**

Education is recognized globally as an instrument for national development. It is a lifelong process that aims at imparting skills needed to live meaningful life and for an individual to adjust well to his immediate environment and the ultimate world in which he finds himself. Education

therefore equips learners to live useful lives by contributing to the growth and development of the society. However, for education to effectively achieve its goals and objectives, it needs educational management (Jekayinfa & Kolawole, 2008). Education in Nigeria has been in crises over the recent past, by sustained attacks and abduction by religious fanatics, communal crises, Boko Haram, herdsmen attacks and so on. Thus, in recent times, Nigeria has become a theatre of bloodshed and insecurity due to the carnage activities of terrorist groups (Abdulkareem, Ilo & Loko, 2013). Terrorists of various groups and camps have unleashed havoc on the Nigerian populace. Among the victims of these terrorist groups are school students, staff and school resources. The situation has recently been made worse by frequent abduction and strike of students, and teachers and so on. These result in shortages of materials and human resources for education, lack of qualified teachers, and brain drain from the public sector, few instructional inputs, shortage of classrooms, and a host of other problems (Ajadi & Adebakin, 2013).

Yobe state have witnessed brutal confrontation and massive assault for the past 13-years from this terrorist group more especially in the study area which is unquestionably the most blood-thirsty and destructive, both in term of demonic brutality, mindless savagery and deliberate disobedience to the principles of peace, stability and integrity. Insurgency has posed a serious threat to the effective and efficient management of secondary schools in the study area. Burstin (2013), reports that insurgency has increased the level of insecurity of lives and properties in secondary schools. According to Ajadi and Adebakin (2013), when crises break out, teaching and learning stop, pupils and teachers are sometimes killed in the violence. Ajadi and Adebakin further observe that within the period of crises such as Fulani Herdsmen and Boko Haram insurgency, school sessions are closed and this makes it difficult for the syllabus to be covered. The activities of insurgents such as attacks and abduction and killings could have negative impact on the management of secondary schools in the area of the study since according to them, management cannot effectively take place in an atmosphere of insecurity and violence.

According to Olaniyan (2013), the ripple effects of insurgency have led to a situation in which adequate funding of secondary schools has increasingly dwindled over the years especially as a result of the poor state of the Nigerian economy. Olaniyan further adds that the pressing need to allocate more funds for the purpose of defeating insurgents as well as providing shelter, food, clothing, water and medication to the Internally Displaced Persons (IDPs) which include school

students, teachers, non-teachers and parents, may affect adequate funding of secondary schools in the areas affected by the insurgents. The activities of insurgents may have seriously led to the loss of lives of school teachers, non-teachers, students and parents. On February 25, 2014, militants barged into the Federal Government College Buni Yadi and burned all twenty-four (24) buildings to the ground during the attack. Fifty-nine (59) boys were killed in the attack. Some died from gunshots or knife wounds, while others were burned to death. Survivors and victims' bodies were taken to Sani Abacha Specialist Hospital in the state capital of Damaturu (The Guardian, 2014). On February 19, 2018 at 5:30 pm, 110 schoolgirls aged 11–19 years old were kidnapped by the Boko Haram terrorist group from the Government Girls' Science and Technical College (GGSTC) Dapchi Bursari Local Government area of Yobe State, in the northeastern part of Nigeria. The Federal Government of Nigeria deployed the Nigerian Air Force and other security agencies to search for the missing schoolgirls and to hopefully enable their return (The Guardian, 2014). This therefore, has created a real fear and anxiety in the minds of educational practitioners, parents and students especially in Damaturu education zone, making many of them to abandon schools and if left unchecked will lead to more undesirable consequences on western education in particular and the civilians in general. It is therefore, believed by the stakeholders that this magnitude of killings of innocent school students and teachers could also have impact on the effective and efficient management of secondary schools in the Yobe State specifically Damaturu education zone.

According to Akpakwu (2013), as a result of insurgency, teaching and learning are stopped in schools and students and teachers are sometimes killed in the violence. Human Rights Watch (2013) reports that, schools within Damaturu education zone were closed down due to insurgent attacks in 2010. This could likely make it difficult for the syllabus to be covered. The teachers are afraid of losing their lives and therefore avoid going to schools in areas of serious and frequent insurgent attacks and abduction in Damaturu education zone which comprised of Gujba, Goneri, Tarmuwa, Bursari and Gulani Local Government area of Yobe State. Hence, this has negative impact on the school calendar which was also negatively affect effective management of secondary schools. Ajadi and Adebakin (2013), remarked that the activities of insurgents in secondary schools could lead to schools being shut down for many months and years and this could disrupt the school academic calendar. Insecurity of lives and properties caused by

insurgent could therefore be a serious obstacle to educational development, its management and achievements in the study area. Quality education has a direct bearing on the provision of adequate and relevant school infrastructural and instructional facilities (Murtala 2013). Lack of peace and peaceful coexisting has caused a lot of concerns to parent, teachers, students and other stakeholders that the frequent and deadly attacks and abduction by insurgents could also negatively impact effective quality of teaching and learning in secondary schools in the area of the study. Olaniyan (2015) has pointed out that “teachers are afraid of going to some schools to teach while in other places, students are withdrawn from schools due to the displacement of parents and the fear of insecurity caused by insurgency”. It is argued that as a result of the insurgency, experienced teachers and professionally trained teachers are in short supply in schools located in such areas. Both teachers and students may have the tendency to migrate to schools considered as being safe rather than remain in an insecure place and this could directly and indirectly impact teaching and learning.

The effective and efficient management of secondary schools anywhere as noted by Avav (2002), does not thrive well under crises situations. Avav, maintains that crises such as insurgency is capable of bringing about loss of lives of teaching and non-teaching staffs, students and parents, destruction of school infrastructural facilities and materials, disruption of school calendar, closure of schools, loss of valuable documents, poor academic performance, shortage of quality teachers and so on. In crises situations, it may become difficult for government to provide adequate resources for the effective and efficient management of secondary school education. This is due to the fact that crises such as that of Boko Haram insurgency may be capable of crippling effective school management. It is against this background that the researcher tends to investigate the impact of Boko Haram insurgency on the management of secondary schools’ in Yobe state with particular reference to Damaturu education zone, Yobe State.

### **Statement of the Problem**

Crime, violence, disorder, bombings and gunmen invasion are the major problem facing public secondary school in Damaturu Metropolis. These problems not only endanger students and teachers but they also prevent teachers from concentrating on teaching and students from concentrating on learning. This change in educational climate has created an imperative need for schools to identify tools, strategies and modern programs that enhance the safety and success of all children and professional who serve them.

Unfortunately, resources to adequately serve the total range of need presented by this student are becoming increasingly limited. These activities of Boko Haram as bringing about loss of lives of teaching and non-teaching staffs, students and parents, destruction of school infrastructural facilities and materials, disruption of school calendar, closure of schools, loss of valuable documents, poor academic performance, shortage of quality teachers and so on. The choice of this topic: impact of Boko Haram insurgency on the management of public senior secondary schools in Damaturu Education Zone is therefore predicated on the assumption that the activities of insurgency is very rampant in the area and could negatively have impact on the management and standard of education in the study area. Embarking on research of this nature in the study area is therefore, a felt need by the researcher to investigate and possibly identify the negative impact of the activities of insurgency that have become very critical to the effective and efficient management of secondary schools in Damaturu education Yobe State.

### **Objectives of the Study**

The objectives of this study were to determine the impact of Boko Haram insurgency on management of:

1. Funding in Public Senior Secondary Schools in Damaturu Education Zone, Yobe State, Nigeria;
2. Loss of Human Lives in Public Senior Secondary Schools in Damaturu Education Zone, Yobe State, Nigeria.

### **Research Questions**

The following research questions guided the study:

1. What is the Impact of Boko Haram Insurgency on Management of Funding in Public Senior Secondary Schools in Damaturu Education Zone, Yobe State, Nigeria?
2. What is the Impact of Boko Haram Insurgency on Loss of Human Lives in Secondary Schools in Damaturu Education Zone, Yobe State, Nigeria?

### **Research Hypotheses**

The following hypotheses were formulated to guide the study and were tested at 0.05 level of significance.

$H_0$ 1: Boko Haram Insurgency has no Significant Impact on Management of Funding of Senior Secondary Schools in Damaturu Education Zone, Yobe State, Nigeria;

**Ho2:** Boko Haram Insurgency has no Significant Impact on Management of Human Lives in Senior Secondary Schools in Damaturu Education Zone, Yobe State, Nigeria

### Methodology

The descriptive survey design was employed for the study. The population of the study was made up of seven hundred and seventy-six (776) teachers (including principals and vice principals) in eleven (11) public senior secondary schools from five local government area of Damaturu education zone. The purposive sampling technique was used to select the sample from the population. In all, 260 were sampled for the study. The instrument used for data collection was structured in four-point rating scale questionnaire titled “Impact of Boko Haram Insurgency on the Management of Secondary Schools questionnaire (IBIMSSQ). To ensure the validity of the instruments, the instruments were presented for face validation to the experts in the Departments of Education, Yobe State University. To determine the reliability of the instrument pilot test was conducted on 20 teachers through test-retest in government science and technical college Potiskum which was outside the sampled schools of the study. The result yielded a Cronbach alpha coefficient of 0.97. Data were analyzed using the descriptive statistics of mean ( $\bar{x}$ ) and standard deviation for the research questions while inferential statistics of Chi-square was used to test the hypotheses at 0.05 level of significance.

### Results

**Research Question One:** What is the Impact of Boko Haram Insurgency on Management of Funding in Public Senior Secondary Schools in Damaturu Education Zone?

**Table 1: Mean and Standard Deviation of Respondents on the Extent to which Insurgency has Impact on Management Funding in Secondary Schools in Damaturu Education Zone in Yobe State.**

S/N	Item Description	N	Mean	SD	Remark
1.	Insurgency leads to dwindling funding of my school.	252	2.91	1.33	HE
2.	Insurgency damages to my school properties lead to colossal financial cost that may be hard to come by in the face of dwindling economy.	252	3.05	0.88	HE
3.	Insurgency impact on allocation of funds which negatively affects infrastructural provision in my school.	252	2.88	0.24	HE
4.	Lack of funding due to insurgency impact on teaching and learning in my school	252	2.77	0.58	HE

5. Inadequate funding of schools due to insurgency destruction could impact on students' access to education for a long time	252	2.91	0.87	HE
6. Funds allocated to secondary education are channeled into increased military operations to end insurgency.	252	2.85	1.03	HE
7. Funds meant for reconstruction of damaged school facilities are embezzled by politicians.	252	2.89	0.63	HE
<b>Total</b>		<b>2.89</b>		<b>HE</b>

**Source:** Researcher Field Survey Results (2024)

Based on the data, the item by item analysis showed that respondents are of the opinion that insurgency led to dwindling funding of secondary schools, insurgency damaged school properties, led to colossal financial cost that may be hard to come by in the face of dwindling economy, insurgency impacted on adequate allocation of funds which negatively affected infrastructural provision in schools, lack of adequate funding due to insurgency negatively impacted teaching and learning in secondary school, inadequate funding of schools due to insurgency destruction could impacted students access to education for long time, funds allocated to secondary education were channeled into increased military operations to end insurgency, funds meant for repairs and reconstruction of damaged school facilities were embezzled by politicians and military personnel.

The result in table 3 shows the mean scores and standard deviations of items constructed to answer research question 1. From the results presented, it is observed that the mean ratings of all the items are within the range 2.50 to 3.49. Therefore, majority of the respondents are of the view that, the level at which school funding was affected as a result of the activities of the insurgency was high extent.

Based on the decision rule guiding this study, the grand mean value of 2.89 indicated that, said factors have significant impact on school funding in public secondary schools in Damaturu education Zone, Yobe State, Nigeria.

**Research Question Two:** What is the Impact of Boko Haram Insurgency on Management of Loss of Human Lives in Secondary Schools in Damaturu Education Zone?

Cluster E of the research instrument, items 29-34 were used to collect data on the impact of Boko Haram insurgency on loss of human lives in public senior secondary schools in Damaturu education Zone. Data collected were analyzed using descriptive statistics (Mean and standard deviation) and the summary of the analysis was presented in table 7:

**Table 2: Mean and Standard Deviation of respondents on the extent to which Insurgency has impact on Management of human lives in Secondary Schools in Damaturu Education Zone in Yobe State.**

S/N	Item Description	N	Mean	SD	Decision
1.	Insurgency bombings lead to the displacement of school staff members, teachers and students who become internally displaced persons (IDP) in camps.	252	2.97	0.82	HE
2.	Insurgency suicide bombings lead to the death of teachers and students in my school.	252	3.00	0.52	HE
3.	Insurgency leads to kidnapping of teachers in my school.	252	2.78	0.68	HE
4.	Insurgency led to the abduction of school children in my school	252	2.87	0.88	HE
5.	Insurgency led to raping of female students in my school	252	2.94	1.31	HE
6.	Insurgency explosives lead to maiming of teachers and students in my school.	252	2.83	0.59	HE
7.	Insurgency attacks and bombings affect the psychological and mental health of school children in my school.	252	2.96	1.09	HE
	<b>Total</b>		<b>2.91</b>		<b>HE</b>

**Source:** Researcher Field Survey Results (2024)

Based on the data the item analysis showed that respondents agreed that; Insurgency bombings led to the displacement of school staff and students who become internally displaced persons (IDP) in camps, Insurgency suicide bombings leads to the death of teachers and students in secondary schools, insurgency led to kidnapping of teachers in secondary schools, insurgency leads to kidnapping of teachers in secondary schools, insurgency leads to the abduction of school children from secondary school, Insurgency explosives led to maiming of teachers and students in secondary schools and Insurgency attacks and bombings affects the psychological and mental health of school children in secondary schools. Based on the decision rule guiding this study, the Grand Mean value of 2.91 indicated that, the extent at which the activities of the Boko Haram Insurgency impacted negatively in loss of human lives in public secondary schools in Damaturu education Zone was high

The results in table 2: shows the mean scores and standard deviations of items constructed to answer research question 5. From the results presented, it was observed that, all the mean ratings of the responses of the respondents were within the range of 2.50-3.49 which shows that majority of the respondents are of the view that the extent at which the activities of the Boko Haram

insurgency impacted on loss of human lives in public secondary schools in Damaturu education Zone was high.

**Hypothesis One:** Boko Haram insurgency has no significant Impact on Management of Funding in Senior Secondary Schools in Damaturu Education Zone in Yobe State.

**Table 3: Chi-square analysis on the impact of Boko Haram Insurgency on Management School Funding in Damaturu Education Zone in Yobe State.**

Response Category	Fo	Fe	$\chi^2$ Cal.	$\chi^2$ Crit.	df	p-value	Remark
Very High Extent	72	62.8					
High Extent	87	62.8	70.67	7.81	3	0.00	Reject H <sub>01</sub>
Low Extent	86	62.8					
Very Low Extent	6	62.8					
<b>Total</b>	<b>252</b>						

**Source:** Researcher's Field Survey Results (2024)

Table 3 showed that the statistics of chi-square were used to test the impact of insurgency on the management of funding in senior secondary schools in Damaturu education Zone Yobe State Nigeria. The result of the analysis showed that 6 of the respondents agreed that there was a very low extent (VLE) of the influence. 86 respondents agreed that there was a Low Extent (LE) of the influence, 87 respondents agreed that there was a High Extent (HE) of the influence. 72 respondents agreed that there was a Very High Extent (VHE) of the influence of insurgency on the funding of secondary schools. Table 3 also showed that the chi-square ( $\chi^2$ ) calculated value of 70.67 was greater than the chi-square ( $\chi^2$ ) tabulated value of 7.81 checked at 0.05 level of significance and at 3 degrees of freedom. The null hypothesis which states that Boko Haram insurgency has no significant impact on funding of secondary schools in Damaturu education zone was rejected. The result implied that Boko Haram insurgency has significant impact on the management of funding in senior secondary schools in Damaturu education zone.

**Hypothesis Two:** Boko Haram Insurgency has no Significant Impact on Management Human Lives in Secondary Schools in Damaturu Education Zone.

The Data collected were analyzed using the inferential statistics of (chi-square) and the summary of the analysis was presented in table 3

**Table 4: Chi-Square Analysis on the Impact of Boko Haram Insurgency on Management of Human Lives in Damaturu Education Zone in Yobe State.**

Response Category	Fo	Fe	$\chi^2$ Cal	$\chi^2$ . Crit	Df	p-value	Remark
Very High Extent	68	63.0					
High Extent	101	63.0	58.64	7.81	3	0.00	Reject $H_{05}$
Low Extent	67	63.0					
Very Low Extent	16	63.0					
<b>TOTAL</b>	<b>252</b>						

**Source:** Researcher Field Survey Results (2024)

Table 4 showed that the statistics of chi-square were used to test the impact of insurgency on the management of human lives in senior secondary schools in Damaturu education Zone Yobe State Nigeria. The result of the analysis showed that 16 of the respondents agreed that there was a very low extent (VLE) of the influence. 67 respondents agreed that there was a Low Extent (LE) of the influence, 101 respondents agreed that there was a High Extent (HE) of the influence. 16 respondents agreed that there was a Very High Extent (VHE) of the influence of insurgency on human lives of senior secondary schools. Table 4 also showed that the chi-square ( $\chi^2$ ) calculated value of 58.64 was greater than the chi-square ( $\chi^2$ ) tabulated value of 7.81 checked at 0.05 level of significance and at 3 degrees of freedom. The null hypothesis which states that Boko Haram insurgency has no significant impact on human lives of senior secondary schools in Damaturu education zone was rejected. The result implied that Boko Haram insurgency has significant impact on human lives of senior secondary schools in Damaturu education zone.

### Discussion

The finding of hypothesis one revealed that Boko Haram insurgency has negative impact on funding of secondary schools in Damaturu education zone. This finding is supported by Ugwumba and Odom (2015) who found out that insurgency discouraged foreign direct investment in education in Nigeria. Investors all over the world are afraid of coming to put their money into the development of Nigeria secondary schools for fear of being destroyed by insurgency. Field experience of the researcher shows that many schools were destroyed leaving staff and students with no relevant structures to carry out their academic activities because there are no funds to construct, renovate or repair the damaged school infrastructural facilities. In addition, field investigation revealed that both federal and state governments are spending colossal amount of money on stopping the insurgency such that they have little or no funds to

construct, renovate or repair the damaged school facilities. Insurgency therefore has negative impact on funding in secondary schools in the North Central States of Nigeria.

The findings of hypothesis two revealed that Boko Haram insurgency has negative impact on human live in Damaturu education zone. This finding is similar to the result of Moji (2014) who discovered that insurgency significantly led to loss of human lives, kidnapping of male and female teachers, maiming of staff and students. Describing the level of loss of human lives through insurgency, Human Rights Watch (2013) reports that attack of Boko Haram insurgency in Jos, Abuja, and Niger states claimed many lives which included students, parents and teachers. Vanguard (2013) reported out that Boko Haram groups carried out several attacks in some parts of the North Central States such as Niger, Plateau, Nasarawa and Abuja FCT which killed or injured many as well as destroyed several structures.

Field investigation also revealed that June 18, 2013 in Yobe State, Boko Haram attacked Government Secondary School Damaturu, shooting sporadically, killing 7 students, 2 teachers and 2 gunmen Headed to the teacher's quarters killing another 2 teachers, 6 students sustained various degrees of injuries. Also, February 25, 2014 in Yobe state, Boko Haram stormed a coeducational, federal government college boarding school in Buni Yadi killing 29 male students, injured 59, and abducted some female students. Also, field survey revealed that February 19, 2018 at 5:30 pm, 110 schoolgirls aged 11–19 years old were kidnapped by the Boko Haram terrorist group from the Government Girls' Science and Technical College (GGSTC) Dapchi in Bursari Local Government area of Yobe State, five schoolgirls died on the same day of their kidnapping; they released everyone else in March 2018, save the one Christian girl Leah Sharibu who refused to convert to Islam. It is perceived that the activities of insurgent have seriously led to the loss of lives of school teachers, non-teachers, students and parents in the study area finally this study is supported by Dachia (2018) study who established that Boko Hararn has attacked schools resulting in the indiscriminate destruction of school's infrastructure and the teaching and learning materials, loss of teachers, killing and kidnapping of school students as well as recruiting students of school going age as suicide bombers and spies . His study finally disclosed that there is a general decline in the school's attendance, poor student's performance and the loss of trained teachers

## Conclusion

Based on the findings of the study, it has been established that insurgency has significant and negative impact on management of funding and human lives of Public Senior Secondary Schools in Damaturu Education Zone in Yobe States, Nigeria.

## Recommendations

1. The federal government should release enough budgetary allocations (funds) to schools faced with insurgency attacks so as to assist them overcome the security challenges in the schools for effective teaching and learning and for other schools to relocate back to their schools;
2. Free bus services manned by security personnel should be available for children and teachers in rural areas to take them to and from schools under tight security to avoid loss of lives in secondary schools

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## PREVIEW OF TEACHERS' PROBLEMS AND ITS NEGATIVE IMPACT ON EDUCATION IN NIGERIA

BY

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### ABSTRACT

*In Nigeria, the teaching force is demoralized with little motivation. Teachers previously benefiting from considerable public respects and reasonable financial rewards, their status is today in exponential decay. The crises in the teaching profession are threatening the ability of Nigeria to reach internationally agreed targets to expand and improve education. To this regard, the study focuses on the situation of teachers in Nigeria today, the myriad problems they are facing and the detrimental effect these problems are having on children's ability to have quality education. The paper argues that the survival of Nigeria as a viable society will depend on the health of her educational institutions, more especially, on how well the teachers that are the backbone of quality education are treated. In an attempt to identify and find solution to the problems, the paper used participatory advocacy research methodology to explore teachers' views of their profession. What actually motivates teachers? What affects their morale? In addition, what will help them perform well? The problems and prospects gathered from the voices of teachers and educationists came out with holistic recommendations on how teachers' motivation and morale could be improved, in order to have a virile and quality education in Nigeria. It is expected that the outcomes of the study may benefit the overall population of Nigerians, with special reference to education policy formulators and implementers. It serves as a media through which teachers' problems and voices will be spread and be heard. It is also hope that an efficient education policy that will address the problems of teachers will have a positive impact on the overall development of socio-economic and political aspects of the entire country.*

**Keywords:** Education, Implications, Problems, Quality, Teachers

### Introduction

Education is generally defined as an aggregate of all the processes by which a child or young adult develops his/her abilities, attitudes and other forms of behavior, which are of value to the society in which he/she lives. It is the conscious training of the young to a life, which is useful to him or her and to the society to which he or she belongs. In other words, education is the fundamental birthright of every child, empowering them for the future, putting opportunity

directly into their hands, best antipoverty strategy, and the best economic development programme. (Ifedili, & Ochuba, 2009 and Berg, 2012)

The roles of education in the development of a society are vastly documented in academic journals, which I do not intend to revisit it here. This study concentrates on the myriad problems of teachers that are major factors for the downfall of education and the need for Nigerian leaders as well as the public at large to pay close attention to the grievances of the teachers, so that the falling standard of education in the nation will be rescued. Because the standard of education of any nation is, depend on how well the teachers that are the backbone of educational advancement are treated.

Nigeria is among the African countries that are endeavor with both human and material resources necessary to redeem her educational enterprise and it has the technical expertise as well as the financial resources to turn around her educational system for the better. However, what Nigeria has always lacked is the moral courage and the political will to make things better. The Nigerian education system has witnessed tremendous growth and expansion since independence in 1960. However, the system has undergone only quantitative improvements in terms of number of institutions and students' enrolment while there has been little development in respect of capacity to maintain standards and efficiency in the process and products of education.

### **Preview of Past Teachers' Status in Nigeria**

In the past, the economy of the country was stable. Education was considered a viable venture worth investing upon, and the enrolment population of the existing schools was manageable. Education used to be a much-revered enterprise. Schools used to be hallowed grounds and ivory towers. From the 1960s and 80s government schools were fairly well funded, and there was competition between government owned schools and those owned by private agencies, especially the missions. (Dike, 2002)

Teachers on their part used to be very well respected among all professional bodies. In the years gone by, more especially in the villages, the teachers constituted the enlightened leaders in the society. They enjoyed similar or more upgraded treatments than other government workers. For instance, once employed car loans were ready for them and teachers were among the highest

paid group in the villages, and so were among the first to be able to buy gramophone records, to sleep on wooden beds, and make use of mosquito nets at night. They served as consultants on a number of issues. For instance, when a child in a village was sick and no herbs could cure him, the teachers were consulted for the right white-man's medicine to resort to, as if the teachers were medical doctors. When a case was pending in a court of law, the teachers were consulted as to the best course of action to take, as if they were lawyers. However, the people respected them, because they considered them to be reservoirs of all knowledge and skill. (Fafunwa, 1974)

Because of the well treatments given to them, they achieved their objectives and imparted knowledge, learning experiences at their disposals and stimulated, guided, directed, and facilitated learners to acquire adequate mastery of the skills being imparted. It is clear that teachers in the past helped the learners often in a school, as well as in a family, religious, and community setting. They are the last post to translate government policies and intentions into practical form. A teacher performs a number of functions in the school system to facilitate effective teaching and process that lead to progress. According to Professor Fafunwa (1964), of law "the Nigerian teacher of yesterday was expected to be among other things 'a good citizen, a community leader, an innovator, a disciplinarian, an enlightened parent, and often a reservoir of all knowledge and skill'. Therefore, teachers are very important factor in the achievement of quality education in any nation. (Fafunwa, 1992)

### **The Major Problems of Teachers**

Inadequate funding of the education sector has been the first major problem facing the Nigerian teachers generally. The Nigerian government, over the years has not been meeting the UNESCO recommendations of 26% of the total budgetary allocation to the education sector. When Nigeria's allocation to education is compared with that of other less affluent societies in Africa, the picture becomes more discouraging. For instance, in the 90s Angola 4.9%; Cote d'ivoiar 5%; Ghana 4.4%; Kenya 6.5%; Malawi 5.4%; Mozambique 4.1%; Nigeria 0.76%; South Africa 7.9%; Tanzania 3.4%; and Uganda 2.6%. In the recent past, the Nigerian allocation to Education in the National Budget for 2003, 2004, and 2005 were 7%, 12%, and 11% respectively. (The Guardian On-line, June 17, 2001).

Relatively speaking, the above disheartening statistics show how insufficient Nigeria's allocation to the education sector has been. As a result, most of these schools are in dilapidating states. The schools lack basic textbooks, library and laboratory equipment and other tools for imparting knowledge. This shows that Nigeria has a weird value system: it is a society where priorities are turned to their heads.

### **Low Salaries and Poor Working Conditions**

In Nigeria teachers' salaries and working conditions are still very poor. Teachers' salaries and other incentives are either woefully inadequate or, because of malfunctioning salary payment systems, are paid late, paid only partially or not paid at all. Comparatively speaking, teachers are the least remunerated workers in the Nigerian economy. For instance, the salaries of the less educated local government counselors are higher than that of even university professors; talk less of primary or secondary school teachers. Non-salary benefits such as subsidized accommodation, travel and health insurance, are not a privilege for teachers to enjoy. As a result, many teachers have to take second jobs (often as private tutors, or by engaging in subsistence farming or other jobs) to make ends meet.

Despite being abused of non-payment of basic salaries and working under poor teaching conditions, the public and the government are blaming them for the falling standard of education in the nation. The shabby treatment of teachers has subjected their families to the ills of poverty. It is obvious that over the years the Nigerian teacher has become notorious for poverty, such that the noble profession no longer attracts first class graduates from our universities and polytechnics. It is unusual today for a young graduate to wish to make a career out of teaching. Many pick up the chalk as a last resort, when all efforts to secure other jobs fail, and they remain in teaching only for as long as they are unable to find better jobs. Actually, the most qualified teachers change their profession. They go and work with NGOs. As soon as, they get other opportunity they shift. (Akhaine, S. 1999 & Darling-Hammond, 2008).

The plight of Nigeria's teachers is pitiful; many of them have died of hunger, diseases, and out of frustration. In fact, the system has turned many of them into beggars and destitute. Many of those who worked all their lives could not boast of a house of their own to retire into as they have joined the ranks of the working poor. Denying the teachers equal access to the nation's

resources is a violation of their human rights. As a result, being a teacher in Nigeria today is increasingly becoming a curse because they are being treated with little or no respect. In fact, in Nigeria some people think that teachers are lesser human beings who do not deserve anything better than the shabby treatments they receive. (Fafunwa 1992)

### **Lack of Teachers' Consultation**

Teachers have many good ideas about the organization of the school, curriculum, planning and extracurricular activities but do not feel that the opportunities exist for them to contribute towards such decisions. Therefore, one of the most disturbing issues for teachers, and one of the biggest blockages to effective policy reform, is actually lack of teachers' voices in decision making about education reforms and the implementation of those reforms. The problem seems to be endemic at all levels of the system, ranging from the school level where teachers' views are often ignored by head teachers, managers and inspectors, all the way up to state or national levels where teachers' representatives are more often than not denied a place at the table by governments and donors alike. Repeatedly throughout the use of participatory advocacy research methodology to explore teachers' views of their profession, while the teachers expressed their joy at being asked for their views, but unfortunately, most of them reported that, they had never before been asked for their opinions nor even to give their contribution during education policy reforms'. (Oral interview with Bukar Adam 2024)

At the school level, there appears to be a widespread lack of involvement of teachers in decision making by school management. Teachers interviewed in the literature feel they are rarely consulted about important decisions and reforms that affect their work. In many cases, communication between managers and teachers is in the form of orders and instructions. (Oral interview with Kachalla Modu, 2025)

### **Lack of Parental Support**

Nothing is more frustrating for a teacher than parents who do not support their efforts to educate their children and not expressing their solidarities during teachers' strikes. Having parental support is invaluable and the lack of parental support can be paralyzing. When parents are not following through with their responsibilities at home, it usually has a negative impact in

the class. Research has proven that children whose parents make education a high priority and stay consistently involved will be more successful academically. (Ejiogu, 1999)

### **Overcrowded Classroom and Over Burdened Task**

Due to demographic increase learners, enrolment into schools became high. If the Pupil–teacher ratios is not balancing classes became overcrowded and unmanageable, where by teaching becomes little more than crowd control. In such situations, moves away from ‘chalk and talk’ rote learning, recommended as long ago as 1966. They go home frustrated because they have been confronted with the impossible task to teach 80 or more children. The use of double or triple shifting (in which the same teachers are expected to teach two or three different shifts of children per day) or multi-grade teaching (whereby teachers are expected to teach differently aged children, at different stages of their studies in the same classroom) is additional problems to teachers and is widespread. The effect on teachers is not only de-motivation, but also exhaustion. (Musa, M. B. 1987 & Ijaiyi, 1999)

### **Lack of Reliable Union Body**

Finally, but not the last, strongly speaking Nigerian teachers with their large number and solidarity can formidably struggle for their rights and the governments must to listen to them, better than any other union bodies. However, the teachers lack strong and reliable union leaders that can stand for them. The union officials ranging from the federal, state down to the local authorities are in most cases loyalists to the governments and as a result, they failed to fight for the rights of the teachers, which others arguing that they use to sell during negotiations. Their primary duty is to collect union dues at the end of every month, which they personalized to enrich themselves. This factor is one of the major areas where teachers are been paralyzed and lost all hopes of solving their problems in the near future.

### **Negative Impact of the Problems on Education**

Generally, the ‘standard or quality of education’ in Nigeria, can literally measure with what the products of education could do in yesteryears to what it can do today. For example, it is a common belief that most things the primary school leavers of yesteryears could do, cannot be effectively done by secondary students of today. The products of primary schools of yesteryears

could easily write letters, whereas secondary school students of today cannot. Teachers without Boarders (2006) reported that the standard of education is how the products of schools can be measured in terms of outcome. That is, a measure of how school leavers contribute to the society in terms of cognitive, affective, and psychomotor. This is in terms of skills, knowledge and right attitude acquired by graduates the country produces. When the standard is low, half-baked graduates are produced. These graduates go into the labor markets with less than knowledge and less skills and often with dubious attitudes. (Hill et al., 2003)

The argument on falling standard of education in Nigeria can be appreciated when one recalled the exceptional performance of the products from the first six Nigerian Universities (University of Ibadan, Ile Ife, Lagos, Benin, Nsukka, and Zaria). In those good days, their products competed favorably with any other University in the world. Their products were offered special admission by University of Harvard, Cambridge, Oxford, and London into their post-graduate courses. The students recorded breaking performances and the best multinational companies and corporate bodies globally employed most of them. However, today none of Nigerian University is among the top 6,000 Universities of the world. (An interview with Tahir Ayuba 2025)

Standard of education may also be seen from either passing or failing of external examinations like WAEC, NECO, NABTEB, and JAMB among others in Nigeria. However, due to high level of examination malpractice because of student's inability to pass exams independently, such evaluation cannot be pushed far. The validity of most certificates of all levels, more especially those of external examination as from the 1980s are questionable in Nigeria. The general feelings among Nigerians suggest that teachers are the main determinants of quality in education. The quality of any education system depended very much on the competence, commitment, and motivation of the teachers. If they are apathetic, uncommitted, uninspired, lazy, unmotivated, immoral, anti-social, the whole nation is doomed. If they are ignorant in their disciplines and impart wrong information, they are not only useless but also dangerous. Therefore, teachers' myriad problems have adverse effects on the Nigerian education sector with dimensional consequences.

Firstly, due to unfavorable condition of service, many have minimal concentration to the profession, because of their involvement in some other assignments outside the teaching job. Some Teachers engage in some private practice in order to fill the vacuum. However, this tendency jeopardizes the progress of the profession and adversely affecting quality education in Nigeria. This problem is rightly observed by UNICEF in its 'state of the world's children' report for 1999' pointed out that about four million Nigerian children have no access to basic education, and that majority of those that are 'lucky' to enter schools are given sub-standard education (Akhaine, 1999).

Secondly, the attrition in the teaching force and dwindling enrolment of teachers kept away-qualified teachers in the education sector. The teachers' conditions of service are not enticing enough to attract and retain the best of brains in the profession. Today, there are holders of professional qualifications in education serving in the banks, customs departments, hotels, immigration, and airways and so on. The continued uncomplimentary public perceived image of teachers may not likely attract the right caliber of people to be retained in the teaching profession.

Thirdly, during teachers' demands the administration, through the Minister of Education, has only succeeded in making high-sounding promises and bogus plans on how to fulfill teachers' demands. When pushed to the wall repeatedly there was no option left for teachers than to take to the streets striking. For months and sometime for years the teachers, has been on strike, most public schools and Universities have been shut down. Despite, the durations of the strikes the academic calendar used to maintain the students' progress of going to the next class. Notwithstanding, students graduated, without compromising the number of weeks, months required for each academic session. This lacuna rendered academic calendars worthless and any sense of time outdated. The period of strikes after strikes led to students remaining in their homes for months and years and this had seriously affected the quality of education in Nigeria.

Therefore, during the periods of teachers strikes the standards of education is dwindling in Nigeria. The UNICEF in its 'state of the world's children' report for 1999' pointed out that about four million Nigerian children have no access to basic education, and that majority of those that are 'lucky' to enter schools are given sub-standard education (Akhaine, 1999).

Fourthly, due to teachers' lack of commitments to their duties they handled the profession with I do not care attitude. As a result, there is no record of late comers to lecture. Where if any, assignment is given, the papers are not marked. The moral character of the students, which include management of time, is not the business of the teacher. In most of the public institutions, even though the students are scheduled to resume in a fixed time, no academic work commences until around the middle of term or semester. Some students fully knowing that teachers are not committed to the principle of discipline and punctuality come in when lectures have ended. The few that reported more often than not remain idle because the teacher was not in class. Generally, there is a general delusion as to the real importance of academic work. At the end of the term or semester, due to improper or poor utilization of academic activities, no appreciable academic work is done. The students knew and the teachers knew that the syllabus has not been covered.

Hence, the teachers and students resorted to printed lecture notes, which they crammed and "reproduce verbatim" on examination day. The results of the situation culminated in general examination malpractice. Examination malpractice has pervaded all the levels of education in Nigeria. Students are the center of examination malpractice; they have masterminded various techniques of examination malpractice. Parents are also helping their children to cheat in examinations. Teachers are also at the center of examination malpractice helping their students to cheat during examinations. These syndromes have adverse effects on the quality of teaching and learning obtained in most schools of Nigeria.

Finally, to narrow the discussion, because of classrooms were overcrowded with an average pupil to teacher ratio of over eighty pupils against one teacher, in lower grades classes often exceeding hundred children, the quality of learning is deeply affected by such ratios. In real terms, it can be estimated that within the past three decades, Nigeria has jeopardized the education of millions of children through admitting more students, while there were no enough teachers to educate them. Likewise, in country like Nigeria where pupil-teacher ratios (PTRs) are already very high, further demands on teachers could be detrimental to teacher capacity and morale and result in diminished learning outcomes among students.' (Ubom, 2002)

## **Conclusion**

The senseless politicization of education at the Federal, State, and Local Government levels, the gross neglect of education in the allocation of funds by successive governments, and the poor treatment of teachers of all cadres, have combined to rob education and the teaching profession of their traditional pride, dignity and honor. It is as if a tragic war has been deliberately waged against the destiny of the Nigerian people through the destruction of education, the very organ in which resides the hope of tomorrow. Lacking any motivation or encouragement, their output in terms of teaching, research and publication, is understandably low. The cumulative results of all are producing graduates of secondary schools, polytechnics, and universities, who cannot compete on equal terms with their counterparts trained elsewhere. However, more painfully, that education is gradually losing its pride of place in the Nigerian society, and that the teaching profession has lost much of its status of honor, and has rather become a despised and derided profession.

Conclusively, too many things have happened within the past years to the structure, the management, the administration, the supervision, and the financing of schools, colleges, and universities in Nigeria, culminating in a serious dislocation of the educational system, whose symptoms are the much-decried fall in academic standards, widespread indiscipline, examination malpractice, frequent riots, and violent cult activities. Perhaps an even greater dislocation has occurred in the psyche of the contemporary Nigerian teachers, whose morale's are now very low. The question now is who is to be blamed over this decay? The study argues that Government can be held to be responsible for the falling standard of education. Government neglected the sector and changed policies concerning education frequently, leaving both teachers and students confused. However, lack of dedications and punctualities to duties by teachers because of unfavorable working conditions hastened the falling standard of education in Nigeria. Therefore, in absence of immediate and adequate actions to save the situation, Nigeria will continue to fall behind economically, socially and politically. Notwithstanding, if the progressive collapse in the educational sector is allowed to continue with wider dimensions, no one shall be spared; not even the children of the rich who are sent overseas, for they would come back to reap the harvest of decay in the Nigerian educational sector.

## **Recommendations**

The leaders and the public that are accusing teachers over the nation's dwindling standards of education failed to find solutions to the problems. For the teachers the solutions are simple and obtainable within the scope of the nation's leaders and economy, if the concern is there. Teachers need functioning and supportive management structures. They need to feel valued and supported by their managers, supervisors and head teachers, as well as by district or local level education officials, in order for them to be motivated and to carry out their teaching responsibilities effectively.

To achieve the above sighted teachers' grievances the first and for most move, is for Nigerian government to revisit her allocation of funds to the education sector. The government has to accept and implement the UNESCO recommendations of 26% of the total budgetary allocation to the education sector. Accordingly, the education sub-sector should be managed by competent and honest professionals (technocrats from within or without) who are inspired by moral purpose to make a difference in the lives of the students and the teachers by properly taking care of the institutions and redistributing the wealth of the nation.

Secondly, because of low pay and little motivation, teaching is not the first choice for many people who are thinking of a career. Both UNESCO and the Global Campaign for Education have argued for some years that there is a strong link between teacher motivation and performance, and education quality. Hence, there will be no quality education unless the basic conditions of teachers are improved. Government has to improve teachers' dignities and welfare packages. Teaching profession should be truly professionalized; public should develop positive perception of teachers. The government should reflect the importance of teachers as well as the responsibilities of all kinds, which fall upon them by comparing favorably with salaries paid in other occupations requiring similar or equivalent qualifications. Teachers' salary levels should be decided nationally in properly organized collective bargaining procedures with teachers' unions, using comparisons with similar professions in the nation. Teacher salaries must be set at a level that makes it possible for teachers to live with dignity on the salary from their work, and not to be forced to take on second or third jobs. (Adedeji, 1998).

Similarly, housing, travel, health and other incentives and benefits should be used as a complement to salary rises, especially in rural or otherwise disadvantaged areas, where 'hardship' allowances can also be applied. Salary and other incentives not only have the potential to motivate existing teachers but also attract more committing teachers to the profession. By so doing, teachers will enjoy a reasonable standard of living for themselves and their families.

Thirdly, to improve the standard of education in Nigeria, the society has to first educate the educators, and motivate them to perform their duties well. Trained and motivated teachers are by far the most crucial ingredient in the provision of quality education for all. Other inputs, such as investments in school buildings, school feeding programmes or ICT (information and communications technology), are doomed to fail if there are not enough educated and motivated teachers in schools for them to be able to teach effectively.

Fourthly, in all tiers of educational systems, teachers play a pivotal role in delivering education reforms. Teachers are both recipients and deliverers of these changes, and are thus better placed and better informed than other custodians of education about what does and does not work in education policies. Therefore, teacher participation in the design, implementation, and evaluation of policy initiatives is essential if reforms are to succeed. 'If teachers themselves are not clear about the changes in education policies, it is almost impossible to achieve the goals, no matter how good the new policies are.' (Akinkugbe, 1994)

Largely, one concept that is often used is school-based evaluation, meaning a process by which teachers discuss their own school as a group of professionals in such a way as to improve the quality of education. The self-evaluation model had an enormous impact in England and Wales. Over 30 local education authorities adopted this approach in their schools as a way of head teachers and teachers gathering information and using it for school improvement'. Whereby the outcome of their decisions needs to be taken to high levels where policy formulators use them as raw materials in further reforms (Nicol, Macfarlane-Dick, 2006).

*Dedication:* I consciously dedicated this study to the suffered and suffering teachers of Nigeria and call on them to withstand and do all what they can afford to educate the youths and wait for their rewards in heaven, because the light is far at the end of the tunnel.

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**ADHERENCE TO COVID - 19 PROTOCOLS IN NIGERIA: ROLE OF ACADEMIC STAFF IN FEDERAL COLLEGE OF EDUCATION, ZARIA ON ENFORCEMENT OF DISCIPLINE ON STUDENTS**

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**ABSTRACT**

*This paper examined adherence to covid - 19 protocols in Nigeria: Role of Academic Staff in Federal College of Education, Zaria on enforcement of discipline on students. Emergence of Covid - 19 virus to Nigeria and the world at large in the year 2019 came unexpectedly. This study has identified amongst others the following problems - failure by lecturers to adhere to important Covid - 19 protocols, poor awareness of both lecturers and students alike and lack of belief of the existence of Covid - 19. Three (3) objectives and research questions each were formulated and tested in this study. Descriptive research design was employed, and questionnaire was used as instrument for data collection. Analysis of research questions was undertaken using descriptive statistics. Findings of this study revealed that lecturers in Federal College of Education, Zaria have partially complied with covid - 19 protocols in their respective classrooms. The study identified that measures put in place by authorities of Federal College of Education, Zaria are same as those of Federal Ministry of Education, Abuja. These include hygiene, physical distancing, use of hand sanitizers etc. Also, large number of lecturers from the institution who are non - indigenes are fully aware of Covid - 19, with few other natives who are aware of the disease especially its potential danger to them and the students in the classrooms. The study has therefore recommended as follows that stringent steps be taken by the College authorities to ensure adequate compliance by both lecturers and students. Committees to this effect can be set up with full powers to discharge their responsibilities. Finally, measures put in place to help guide against the spread of Covid - 19 in Federal College of Education, Zaria and its environs should be reviewed from time to time especially on the attitude of lecturers and students as it may result to its closure.*

**Keywords:** Classrooms, Covid - 19, Enforcement, Lecturers, Students Adherence

**Introduction**

The outbreak of corona virus diseases in the world tagged Covid - 19 has no doubt resulted in the untimely deaths of talents in all spheres of human endeavour especially the educational systems

and as well, its aftermath effects on world economic crisis of one sort or another. As it is always the case with any pandemic, which is never new to any institution or governments all over the world precautions are said to be put in place as soon as possible to avert increases in the number of deaths. This is especially in educational institutions where learners from different backgrounds, tribes, religion or even social strata meet. It has thus become imperative as, any outbreak of diseases here spells doom for other sectors of the economy especially the health sector which are hitherto not prepared or having inadequate facilities or even less trained personnel to help curtail its further spread.

In view of this, the Nigeria Centre for Disease Control (NCDC) which is the agency of government saddled to protect the health of Nigerians through evidence based prevention. Integrated disease surveillance and response activities, using a one health approach have worked in collaboration with others such as the World Health Organizations, National Primary Health Care Development Agency (NPHCDA) and Federal Ministry of Education to produce and release guidelines for safe reopening of schools as interim precautions. This followed months of total shut down of schools and other establishments while researchers work day and night trying to understudy the disease and produce vaccine(s) for its possible prevention.

Notably among the guidelines for safe reopening and operations in schools are: physical distancing in and outside classrooms, use of face masks by teachers if 1m spacing is not feasible, use of thermometer to check body temperature, provision of constant water and regular washing of hands with clean, warm water and soaps and use of hand sanitizers among others. Where any of the above listed protocols are not adhered to, the main implementers of curriculum in schools (that is, the lecturers or teachers as they are been called) would have themselves to blame. As they would not only contract the disease but have other students in their classes to be prepared for isolation alongside their families. Classes may stopped, work load increases, time spent in any class reduced, curriculum contents possibly not covered and students having to do a lot more in reading and preparing for examinations. In all these, the usual practice in our schools including Federal College of Education, Zaria have thus become “new normal” even to the point that classes for certain categories of learners are mounted through radio. Teachers’ are the closest to the students in terms of teaching and guidance in schools. According to Wehmeier (2004), the aspect of teacher’s guidance in school is an act of being in charge and making sure that the

student adheres to instructions accordingly. It is also to ensure that everything done by the student is done correctly and safely especially at a time like this where Covid does not recognize the young or old. For this singular reason, teachers who are placed at the center stage of curriculum implementation would be able to carry on, with their work if and when they enforce adherence to Covid 19 protocols as pre - condition for the reopening of schools. As well as, a connector for continuous teaching and learning to take place in school which had already been opened.

### **Statement of the Problem**

The decline in the quality of education cannot be ignored by anyone who is aware of the significant role of education as an instrument of societal transformation and development (Blumende in Olusola, 2015). Teacher training which should provide support for other educational systems in terms of manpower have no doubt lived upto expectation especially with the increasing enrolment of students on a yearly basis without a corresponding match up with infrastructure. This apparently was the situation in most teacher training colleges before the emergence of Covid - 19 when the index case was first reported on 28<sup>th</sup> February, 2020 in Lagos - Nigeria. Just like Nigeria was caught unaware, same was the case with other countries of the world where institutions, commercial activities and schools were soon locked down. The whole idea was to curtail its spread, making nations of the world put up its national committee for this purpose. These committees as set up by different nations of the world work in collaboration with the World Health Organization (WHO) on a number of guidelines to help protect individuals, groups and nations. Schools, representing the educational system at all levels is one essential sector of the economy which have been mandated to put the guidelines into use, if they are to remain opened and operational. At the centre of all this, are the lecturers who are the intermediary between the school and students. From one end, lecturers receive the guidelines from the school and then enforce while at the other end, students are only expected to comply with these protocols. It is rather saddened from the observations of this writer that lecturers have not played the desired impact expected of them at ensuring students' adherence to Covid - 19 protocols in Federal College of Education, Zaria. Challenges they are posed to include failure by lecturers themselves to adhere to important Covid - 19 protocols, poor awareness of both

lecturers and students alike, lack of belief on the existence of Covid - 19, and unwarranted comparison of the handling of Covid - 19 cases with other sister institution within the vicinity.

### **Purpose of the Study**

The purposes of this study are:

1. Investigate the approach adopted by lecturers in Federal College of Education, Zaria on students' adherence to Covid - 19 protocols in their classes.
2. Find out the reasons why lecturers in Federal College of Education, Zaria are interested on students' adherence to Covid - 19 protocols in their classes.
3. Assess if gender influences lecturers' enforcement of students' adherence to Covid - 19 protocols in Federal College of Education, Zaria.

### **Research Questions**

The following research questions were to be answered in the course of this study.

1. What are the approaches adopted by lecturers in Federal College of Education, Zaria undertaken on students' adherence to Covid - 19 protocols in their classes?
2. What are the reasons lecturers in Federal College of Education, Zaria interested on students' adherence to Covid - 19 protocols in their classes?
3. Do gender influence lecturers enforcement of adherence to Covid - 19 in classes in Federal College of Education, Zaria?

### **Literature Review**

#### **Covid - 19: Origin and its Protocols**

A lot of pandemics have occurred in human history, and affected human life, education system, and economic development in the world at large were not spared. Covid - 19, a virus disease was first reported in December 8, 2019 in Wuhan City, Hubei Province, Central China. On January 7, a novel coronavirus, originally abbreviated as 2019-n CoV by WHO, was identified from the throat swab sample of a patient (Hui, Madani, Nlournmi, Kock, et. al, 2019). This pathogen was

later renamed as severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) by the Coronavirus Study Group (Corbalenya, 2020). Owing to this, the disease was named coronavirus disease 2019 (COVID - 19) by the WHO. As of January 30, 7736 confirmed and 12,167 suspected cases had been reported in China and 82 confirmed cases had been detected in 18 other countries (Burki, 2020).

Covid - 19 is moderately infectious with a relatively high mortality rate, but the information available in public reports and published literature is rapidly increasing. A genomic study has provided evidence that the virus was introduced from another, yet unknown location, into the market where it spread more rapidly, although human - to - human transmission may have occurred earlier (Yu, Tan, Zhangl, Corlect, 2020). Person - to - person transmission is thought to occur among close contacts mainly via respiratory droplets produced when an infected person coughs or sneezes. Fomites may be a large source of transmission, as SARS - CoV has been found to persist on surfaces up to 96h (Kramer, Schwebke, Kampf, 2006) and other coronaviruses for up-to 9 days (Kampf, Todt, Pfaender, Steinmann, 2020).

The index case of Covid - 19 in Nigeria was confirmed in February 27, 2020. Subsequent development led to the closure of all schools and learning facilities in Nigeria in March 2020. Schools are not only places of learning; they also provide social protection, nutrition, health services and emotional support for the most disadvantaged. This development no doubt has serious negative impact on the rights of learners, and poses a very big challenge to the realization of Sustainable Development Goal 4 on inclusive and quality education. Worried by the spread of the pandemic as declared by WHO and out of concern to step in, Presidential Task Force on Covid - 19 was established by President Muhammadu Buhari (GCFR) on March 9, 2020, to coordinate and oversee Nigeria's multi - sectoral inter-governmental efforts to contain the spread and mitigate the impact of the Covid - 19 pandemic in Nigeria.

### **Approaches by Lecturers in Federal College of Education, Zaria on students' adherence to Covid - 19 protocols**

The emergence of Covid - 19 pandemic into nations of the world was another eye opener to teacher education programmes especially in Nigeria. Usually, students' population in public schools in Nigeria is of geometric progression when compared with the available infrastructural facilities. This been the case, brought about a number of questions to be answered. First, the

preparedness of the College on the radio classes been implemented. Secondly, is on how adequate the planning of radio and physical classes would be successfully implemented. Thirdly, the students' attitude to the newly established radio classes. In all these, the collective effort was to guide against overcrowded classes during teaching and learning and how lecturers would manage the situation. To however, ensure smooth lessons delivery in the classroom especially in this Covid era, caution should not be thrown into the winds. So also, the approach(es) adopted by individual lecturers matters. Approaches to teaching can be such that teachers need to develop the interest and attitude of the students with regard to the subject through his/her method of teaching. The teachers as experts should have good exposure and experience in whatsoever course(s) they are teaching. It would be expected that the teacher foster students' adjustment, match curricular offerings to levels of mental development, understand students' basic cognitive and social problems, make curricular specifications relevant, and motivate the students to learn under a prevailing situation which we have found ourselves in (Avwiri, 2011).

Teachers need to use different instructional strategies to ensure students centered method in the classroom for creativity, innovative and critical thinking purpose in students. Classroom teaching is likely to be more effective when it is informed by an understanding of how students learn. It is therefore important that, the major implications of instructional strategies be reflected in classroom practice. In recent times, emerging research findings seem to show that oriented instructional strategies are becoming increasingly popular in the teaching of various subjects in the secondary school level of education in Nigeria (Osakwe, 2009).

### **Gender Influence and Reasons why lecturers in Federal College of Education, Zaria are interested on students' adherence to Covid - 19 protocols**

Lecturers' role in the preparation of students to succeed in life cannot be undermined (Gbore, 2013). Their influences is determined by gender, just as significant noticeable difference in the proportion of male to female lecturer in the nation's tertiary institutions have been observed. According to Kathryn (2013), lecturers' unconscious gender biases can produce stereotypic explanations for students' success and participation in the classroom. They equally view male students' domination of the classroom and their time as typical masculine behaviour. Kathryn (2013) further affirms that gender bias can occur within subject areas and school activities especially in the classroom.

Researchers have discovered that teachers interact differently with students on similar gender than they do with students of opposite gender. John (2005) cited Meece (1987) argued that evidence suggests that male teachers tend to be more authoritative whereas female teachers tend to be more supportive and expressive in the implementation of school policies. Also, John (2005) cited Rodriguez (2002) that male teachers are likely to select a more aggressive disciplinary approach towards boys while teachers of either gender tended to ignore boys' disruptive behaviour than that of girls when the behaviour was not aggressive. Similarly, In the study conducted by John (2005) on student gender and teacher gender: the impact on high stake test scores, the study showed that students of the same gender as their teacher score better on reading and writing and were overall more likely to pass the final examination than students of opposite gender than their teachers. While this may indicate that student benefit from being instructed by teachers of similar gender.

Lecturers in FCE, Zaria as key players in the school system ensures that government educational policy to help promote effective teaching and learning are unhindered. This informs their chose of supporting the government and school at ensuring that students adhere to Covid - 19 protocols. Part of their reasons are that the virus diseases is deadly, can easily be contracted, causes one's untimely death, result to unfulfilled dreams, forces the government to close down schools, confine the victim to isolation among many others. Bearing this in mind, lecturers in this institution would not fold their arms allowing the students to violate the protocols. This is just as the previous lock down has brought about restriction on inter - states movement, market places closed, religious gatherings of more than 10 persons were banned, social activities such as parties, ceremonies and club meetings etc. were placed on hold (Parke, 2020; Burke, 2020). All public and private schools have to shut the doors of their schools following the government directive. The pandemic has unmasked substantial inequities in the education sector. While some private schools in urban areas are engaging their students through online teaching, a large number of students who are less privileged or are in rural areas were left out (UNESCO, 2020a).

### **Methodology**

The study adopted descriptive survey research design. The population for this study comprised of all lecturers from the School of General Education in the College. There are estimated One

Hundred and Sixty (160) lecturers in the school as at August, 2021. Out of this figure, those within the ranks of Lecturer III and Principal Lecturers are projected at One Hundred and Six (106). Since the targeted population is small, same figure was used as sample size. Gay, Mills and Airasian (2006) were in full support that samples should be as large as possible; in general, the larger the sample, the more representative it is likely to be, and the more generalizable the results of the study are likely to be. Questionnaire was the sole instrument used for data collection in the study. Instrument was subjected to face and content validity whereas reliability co-efficient of 0.89 was obtained. The three (3) research questions formulated in this study were analyzed using frequency counts and simple percentages.

## Results

Research Question One: What are the approaches adopted by lecturers in Federal College of Education, Zaria on students' adherence to Covid - 19 protocols in their classes? The analysis for this particular research question can be traced to table 1 below using descriptive statistics. Respondents are at liberty to choose any suitable answer from the Likert 4 point rating scale of Strongly Agreed (SA), Agreed (A), Disagreed (D) and Strongly Disagreed (SD) respectively.

**Table 1: Respondents' opinions on the approaches adopted by lecturers in Federal College of Education, Zaria on students' adherence to Covid - 19 Protocols in Class**

S/N	Item Statement	Response categories				MEAN
		SA	A	D	SD	
1	Lecturers have this carefree attitude to Covid - 19 protocols.	32	35	24	17	2.759
2	All lecturers ensure students comply with Covid - 19 protocols in their classes.	17	18	35	38	2.130
3	Most lecturers comply with Covid - 19 protocols only and do not bother about their students in class.	22	20	24	42	2.815
4	All lecturers have their individual perception of what Covid - 19 is and as such adopt different approaches to it.	41	20	14	33	2.639
5	Small class size is what I allowed in my class as one of the protocols of Covid - 19	16	19	37	36	2.139
6	I split my class into groups because of Covid - 19 protocols for content coverage and judicious time utilization.	17	51	19	21	2.593
7	As much as I put on face mask to my class, all students must do same else they do not come in.	29	29	20	30	2.528
<b>CUMULATIVE MEAN</b>						<b>2.514</b>

**Standard/decision mean = 2.500**

Above analysis in table 1 discusses the opinion of respondents on the approaches adopted by lecturers in Federal College of Education, Zaria on students' adherence to Covid - 19 protocols

in their classes. There are seven (7) question items which have been duly responded to, as depicted by the scores obtained. Mean of 2.815 was obtained in respect of the fact that most lecturers comply with Covid - 19 protocols only and do not bother about their students in class. 42 of the respondents agreed while 66 strongly disagreed. As far as lecturers carefree attitude to Covid - 19 protocols is concerned, 57 of the respondents agreed while 41 disagreed. On the issue of splitting the class into smaller sizes as one of the protocols of Covid - 19, 73 of the respondents agreed to this question item while another 35 disagreed. This was the least mean score obtained for this particular research question. In summary, cumulative mean response of 2.514 is higher than the 2.500 standard/decision mean. It therefore showed that lecturers' approach on students' adherence to Covid - 19 protocols is worthwhile (commendable).

Research Question Two: What are the reasons lecturers in Federal College of Education, Zaria interested on students' adherence to Covid - 19 protocols in their classes? The analysis for this particular research question can be traced to table 2 below using descriptive statistics. Respondents are at liberty to choose any suitable answer from the Likert 4 point rating scale of Strongly Agreed (SA), Agreed (A), Disagreed (D) and Strongly Disagreed (SD) respectively.

**Table 2: Respondents' opinions on the reasons why lecturers in Federal College of Education, Zaria are interested on students' adherence to Covid - 19 Protocols in Classes**

S/N	Item Statement	Response categories				MEAN
		SA	A	D	SD	
1	Covid - 19 is deadly with no symptoms in some cases.	32	35	24	17	2.759
2	It easily spread through the air and by touching of surfaces.	17	18	35	38	2.130
3	It can keep me out of job for as long as possible and even College closure.	42	24	22	20	2.815
4	Can easily be contacted by any member of my family and expensive to treat.	41	20	14	33	2.639
5	Poor belief system by students of its existence who have come from different places and are meeting new faces daily.	16	19	37	36	2.139
6	Because of the need to ensure safety of others who may eventually be victims when they associate with the carriers.	17	51	19	21	2.593
7	To carry out instruction of their bosses as employee under them.	29	29	20	30	2.528
<b>CUMULATIVE MEAN</b>						<b>2.514</b>

*Standard/decision mean = 2.500*

In table 2 above, analysis on the reasons why lecturers in Federal College of Education, Zaria are interested on students' adherence to Covid - 19 Protocols in Classes was presented. Analysis in the above table indicated that cumulative mean response of 2.514 is higher than the 2.500

standard/decision mean. An indication that a lot of reasons could be responsible for why lecturers are highly interested on students' adherence to Covid - 19 protocols in their classes. The highest mean score (2.815) of respondents attest to the fact that once contracted Covid - 19 can keep one out of his/her job and even the closure of the College in general. This would come with serious implication on the people, businesses and social interaction. About 35 of the respondents still believed that it can spread through the air and by touching surfaces while 72 others disagreed. This has proven that a lot of public campaign is still been required here. The second highest mean score (2.759) obtained was from respondents who believed Covid - 19 is deadly with no symptoms. 67 agreed to this while another 41 of the respondents disagreed to this question item.

Research Question Three: Do gender influence lecturers enforcement of adherence to Covid - 19 in classes in Federal College of Education, Zaria? The analysis for this particular research question can be traced to table 3 below using descriptive statistics. Respondents are at liberty to choose any suitable answer from the Likert 4 point rating scale of Strongly Agreed (SA), Agreed (A), Disagreed (D) and Strongly Disagreed (SD) respectively.

**Table 3: Respondents' opinions on how gender of lecturers in Federal College of Education, Zaria influences students' adherence to Covid - 19 Protocols in Class**

S/N	Item Statement	Response categories				MEAN
		SA	A	D	SD	
1	Individual lecturers play their roles according to their knowledge of Covid - 19 in terms of its existence and effects in human lives.	32	35	24	17	2.759
2	Female lecturers enforce Covid - 19 protocols more than their counterparts in classrooms.	17	18	35	38	2.130
3	Only few male lecturers influenced students' adherence to Covid - 19 protocols	22	20	42	24	2.815
4	Experienced female lecturers make more influence on students' adherence to the use of face mask in their classes due to their health.	41	20	14	33	2.639
5	Younger lecturers show carefree attitude to social distancing in their classes.	16	19	37	36	2.139
6	My religious belief as a lecturer does not allow me to belief Covid - 19 exist and therefore making me to be careful in who I associate with.	17	51	19	21	2.593
7	The cultural practice with female lecturers has given the opportunity to distance ourselves from some things even before Covid - 19 and therefore easy to enforce in our classes.	29	29	20	30	2.528
<b>CUMULATIVE MEAN</b>						<b>2.514</b>

**Standard/decision mean = 2.500**

Table 3 analysis indicated that gender of lecturers in the study area greatly influences students' adherence to Covid - 19 in their classes. This is because the cumulative mean response of 2.514 is higher than the 2.500 standard/decision mean. Information from the above table showed that the highest mean score (2.815) obtained was in respect of question item 3. 42 of the respondents agreed on this particular item while 66 disagreed. The least mean score (2.130) obtained was for question item 2 of the table. Respondents of about 35 agreed to the fact that female lecturers enforce Covid - 19 protocols more than their counterparts. 73 others however, disagreed to this question item.

### **Summary of the Findings**

1. The study revealed that lecturers in Federal College of Education, Zaria have fully complied with covid - 19 protocols in their respective classrooms through the approaches they adopt.
2. The study identified that part of the measures put in place by the authorities of Federal College of Education, Zaria are same as provided by the Federal Ministry of Education, Abuja. These include hygiene, physical distancing, use of hand sanitizers etc
3. The larger percentage of lecturers of Federal College of Education, Zaria who are non - indigenes are fully aware of Covid - 19, whereas a fewer number from the natives can be said to be aware especially on its potential danger to them and the students in the classrooms.
4. The specific ways to help ensure compliance of the Covid 19 differs from one lecturer to another as envisaged by the study respondents. It is however, not too different from what the government have suggested, just that with strict enforcement by lecturers.

### **Conclusion**

Covid - 19 seems to have come to stay just like any other diseases. It is therefore important that the disease should be identified with and all necessary caution be observed in other not to be a victim or die early. Everyone is expected to play their roles as far as this disease is concerned. This is to ensure we keep it out of our homes, schools and business area. The fact that few

concerned citizens are more careful than others should not be taken for granted as the long term effect can be detrimental to our homes, societies and nation's economy at large.

### **Recommendations**

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

1. The study recommends that stringent steps be taken by the College authorities to ensure adequate compliance by both lecturers and students. Committees to this effect can be set up with full powers to discharge their responsibilities.
2. Measures collectively put in place by Federal Government, Kaduna State Government and the College management to help guide against the spread of Covid - 19 in Federal College of Education, Zaria and its environs should be reviewed from time to time especially on the attitude of lecturers and students as it may result to its temporary closure.
3. That the College should organize awareness campaign on Covid - 19 for both staff (lecturers as a major target) and students on regular basis pending when the pandemic would have become history.
4. International best practices should be fully supported by all as a replacement for face - to - face teaching even at this level. Although, the idea of radio lecture as alternative way of lesson delivery should be totally embraced. This will equally help to reduce challenges confronted in teaching and learning process

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**ANALYSIS OF TEACHERS' CLASSROOM MANAGEMENT STRATEGIES IN  
SECONDARY SCHOOLS IN KADUNA STATE  
BY**

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***ABSTRACT***

*This study analyzed the classroom management strategies employed by secondary school teachers in Kaduna State, Nigeria, and evaluated their effectiveness and the challenges they faced. Using a descriptive survey design, data were collected from 300 teachers across 20 urban and rural schools through a structured questionnaire. The data were analyzed using frequency and percentage. The findings revealed that preventive strategies, such as establishing clear rules and fostering positive relationships, were commonly used, with 72% of respondents reporting them as effective in minimizing disruptions. However, 65% of teachers identified overcrowded classrooms and inadequate resources as significant challenges, particularly in rural schools where resource deficits were more severe compared to urban schools. The study recommended regular professional development programmes to enhance teachers' skills, improved resource allocation to address infrastructural deficits, and the integration of technology in classroom management. Additionally, the study highlighted the need for policy reforms and tailored interventions for rural and urban schools to bridge contextual disparities. These measures if properly put in place would help to create a more conducive learning environment, reduce behavioural issues, and improve academic outcomes in Kaduna State's secondary schools.*

**Introduction**

Classroom management remains a cornerstone of effective teaching, influencing students' academic performance, behavior, and overall school experience. In secondary schools, particularly in Kaduna State, Nigeria, the role of teachers in managing classrooms effectively is pivotal to achieving educational objectives amidst challenges like overcrowded classrooms, diverse student needs, and limited resources. Effective classroom management involves creating a conducive learning environment that encourages active participation, minimizes disruptions,

and fosters positive teacher-student relationships. Recent studies (Yusuf and Adigun, 2019) highlight that effective classroom management directly correlates with improved academic outcomes and reduced behavioural issues. For instance, Adetigba and Izuagie (2017) research demonstrated that proactive strategies, such as involving students in decision-making and setting clear expectations, significantly enhance academic achievement and classroom harmony. The teacher's ability to manage time, resources, and student behaviour while delivering instruction in a structured and engaging manner is essential. In Kaduna State's secondary schools, the need for tailored strategies is heightened by systemic challenges such as resource shortages, large class sizes, and cultural diversity among students.

Emerging research emphasizes that effective classroom management extends beyond maintaining order; it encompasses strategies such as proactive planning, fostering positive student-teacher interactions, and employing differentiated instructional techniques. Studies by Korpershoek et al. (2016) indicate that effective classroom management decreases disruptive behaviours and enhances academic achievement across various educational contexts. Similarly, Soheili et al. (2015) stress the importance of creating a classroom environment that balances structure and support, enabling students to thrive academically and socially.

In Kaduna State, however, evidence suggests that many teachers lack sufficient training in advanced classroom management techniques. This deficit impacts their ability to address behavioural challenges effectively and sustain student engagement. For example, Arogundade and Bolarinwa (2011) identified factors such as inadequate teacher preparation, lack of instructional variety, and poor classroom infrastructure as significant barriers to effective classroom management in Nigerian schools. It is based on the foregoing that the researchers prompted to analyzed the classroom management strategies employed by secondary school teachers in Kaduna State, Nigeria.

### **Objectives of the Study**

The objectives of the study include:

1. Identifying the prevalent classroom management strategies used by urban and rural secondary school teachers in Kaduna State.
2. Exploring the challenges faced by teachers in implementing effective classroom management in secondary schools in Kaduna State.
3. Assessing the relationship between classroom management practices and students' academic performance in secondary schools in Kaduna State.

### **Research Questions**

1. What are the classroom management strategies commonly employed by urban and rural secondary school teachers in Kaduna State?
2. What challenges do teachers face in implementing effective classroom management practices in urban and rural secondary schools Kaduna State?
3. What is the relationship between classroom management practices and students' academic performance in secondary schools in Kaduna State?

### **Literature Review**

Classroom management refers to the methods and strategies used by teachers to maintain an environment conducive to learning. It involves establishing rules, setting expectations, monitoring student behavior, and intervening when necessary to address disruptions. According to Marzano and Marzano (2003), effective classroom management is a predictor of student success, as it creates a structured and orderly environment that facilitates learning.

This study draws on two key theoretical perspectives: the Behaviourist Theory (Skinner, 1953) and the Socio-Cultural Theory (Vygotsky, 1978). The behaviorist approach emphasizes reinforcement and punishment as tools for shaping behavior. Positive reinforcement, such as rewards, encourages desired behaviors, while negative reinforcement or punishment discourages undesirable ones. This theory underpins many traditional classroom management strategies, including the use of rules, routines, rewarding and punishing the learner as well as the consequences attached to classroom interaction. Vygotsky's theory highlights the role of social interactions and cultural contexts in shaping learning and behaviour. From this perspective,

classroom management extends beyond discipline to include fostering collaborative learning environments and respecting cultural differences. This approach is particularly relevant in multicultural settings like Kaduna State, where teachers must navigate diverse socio-cultural dynamics.

Research has identified a variety of strategies for effective classroom management, including:

- **Preventive Strategies:** Setting clear expectations, establishing routines, and fostering positive relationships with students (Emmer & Evertson, 2009).
- **Interventionist Strategies:** Using consequences, both positive and negative, to address behaviour issues.
- **Engagement Strategies:** Promoting active learning through interactive teaching methods and collaborative activities.

Studies in sub-Saharan Africa, including Nigeria, highlight several challenges faced by teachers in managing classrooms effectively. Large class sizes, limited access to teaching aids, and inadequate professional development are among the most frequently cited issues (Ogunyemi & Fadele, 2019). Additionally, cultural factors often influence the acceptability of certain strategies, such as the continued use of corporal punishment in some regions despite its adverse effects on students' emotional well-being.

In Nigeria, classroom management practices are often shaped by traditional disciplinary methods. Research by Yusuf and Adigun (2019) found that many teachers rely on punitive measures such as corporal punishment and suspension to maintain order, particularly in rural schools. However, there is a growing shift toward student-centered approaches, driven by increased awareness of their benefits for academic performance and student engagement. While several studies have explored classroom management in Nigeria, few have focused specifically on Kaduna State, a region characterized by its socio-cultural diversity and urban-rural disparities. Furthermore, existing research often overlooks the perspectives of teachers in resource-constrained environments and the contextual factors that influence their practices. This study aims to fill these gaps by providing a comprehensive analysis of the classroom management strategies employed by secondary school teachers in Kaduna State, evaluating their effectiveness

and identifying areas for improvement. The findings will inform policymakers, educators, and stakeholders on best practices and innovative solutions to enhance teaching and learning in secondary schools.

## **Methodology**

This study adopted a descriptive survey research design to investigate the classroom management strategies employed by secondary school teachers in Kaduna State and their impact on academic performance. Descriptive survey design was selected as it allows for the systematic collection, analysis, and interpretation of data to understand patterns and relationships within the population. The study population comprised all secondary school teachers in Kaduna State, estimated at approximately 10,000, spread across urban and rural areas. A stratified random sampling technique was employed to ensure representation of both urban and rural schools, with a total sample size of 300 teachers selected across 20 schools. This sampling strategy ensured that the findings reflected the diverse teaching contexts and challenges in the state. Data were collected using a structured questionnaire, the questionnaire items were developed based on validated instruments from existing literature and tailored to the local educational context of Kaduna State. A pilot study was conducted with 30 teachers to ensure the reliability and validity of the instrument, yielding a Cronbach's alpha of 0.87, indicating high internal consistency. Data were analyzed using descriptive statistics, including frequencies, percentages, means, and standard deviations. Qualitative data from open-ended questionnaire responses were analyzed thematically to provide deeper insights into the challenges faced by teachers and the contextual factors influencing their classroom management practices.

## **Results**

Quantitative data were analyzed using descriptive statistics, while qualitative data were subjected to thematic analysis.

**Research Question One:** What are the classroom management strategies commonly employed by urban and rural secondary school teachers in Kaduna State?

**Table 1: Prevalence of Classroom Management Strategies by Urban and Rural Schools**

Classroom Management Strategy	Urban Schools (%)	Rural Schools (%)	Overall (%)
Establishing Classroom Rules	85	75	80
Verbal Warnings	70	65	67.5
Interactive Teaching/Engagement Techniques	60	35	47.5
Group Work/Collaborative Learning	55	30	42.5
Use of Corporal Punishment	10	40	25

The data in table 1 revealed notable differences in the strategies employed by teachers in urban versus rural schools. Urban teachers reported higher utilization of interactive teaching methods (60%) and group work (55%) compared to their rural counterparts (35% and 30%, respectively). This disparity can be attributed to better resource availability, such as teaching aids and smaller class sizes in urban areas. Conversely, rural teachers exhibit a higher reliance on corporal punishment (40%) compared to urban teachers (10%), highlighting the persistence of traditional disciplinary methods in resource-constrained settings. These findings suggest a need for targeted interventions to promote modern, non-punitive strategies, particularly in rural schools. The qualitative result further revealed that, teachers commonly use rules, routines, and verbal warnings to maintain order. Strategies like group work and interactive teaching were more common in urban schools. Corporal punishment and suspension are still practiced in some schools, despite official prohibitions. Urban schools had better access to resources, enabling the use of interactive and technology-assisted strategies. Rural schools relied more on traditional methods, often due to larger class sizes and limited resources.

**Research Question Two:** What challenges do teachers face in implementing effective classroom management practices in urban and rural secondary schools Kaduna State?

**Table 2: Challenges Faced by Teachers in Classroom Management**

Challenge	Urban Schools (%)	Rural Schools (%)	Overall (%)
Large Class Sizes	50	75	62.5
Limited Access to Teaching Aids	40	85	62.5
Cultural Sensitivities	30	65	47.5
Lack of Professional Development	45	70	57.5
Resistance to Modern Methods	20	55	37.5

Table 2 shows a clear urban-rural divide in the challenges faced by teachers in classroom management. Rural schools report significantly higher struggles with limited access to teaching aids (85%) and large class sizes (75%), compared to urban schools (40% and 50%, respectively). Cultural sensitivities were also more pronounced in rural areas (65%) due to diverse cultural norms that may conflict with standardized disciplinary methods. While urban schools are relatively better equipped, a notable 45% of urban teachers still cite inadequate professional development as a challenge. These findings underscore the importance of improving infrastructure in rural schools and increasing access to training programmes across the board. Also, the qualitative result showed that, overcrowded classrooms in both urban and rural settings hinder effective management. Teachers in rural areas reported difficulties in addressing culturally sensitive behaviours. A lack of training in modern classroom management techniques was evident.

**Research Question Three:** What is the relationship between classroom management practices and students’ academic performance in secondary schools in Kaduna State?

**Table 3: Relationship Between Classroom Management Strategies and Academic Performance**

Classroom Management Strategy	Average Academic Performance in Urban Schools (%)	Average Academic Performance in Rural Schools (%)	Overall Average (%)
Behavioral Control Strategies	70	60	65
Interactive Teaching/Engagement	85	70	77.5

Classroom Management Strategy	Average Academic Performance in Urban Schools (%)	Average Academic Performance in Rural Schools (%)	Overall Average (%)
Techniques			
Group Work/Collaborative Learning	80	65	72.5
Use of Corporal Punishment	50	45	47.5

The data in Table 3 indicate a strong correlation between the use of interactive and engagement-focused strategies and improved academic performance. For example, schools employing engagement techniques recorded an average academic performance of 77.5%, compared to 47.5% for those using corporal punishment. The difference is more pronounced in urban schools, where interactive teaching resulted in an 85% performance rate, compared to 70% in rural schools. This highlights the efficacy of modern classroom management strategies in fostering academic excellence. However, the lower performance rates in rural schools using the same strategies suggest that factors like resource availability and class size also play critical roles in academic outcomes. The findings also revealed that classrooms managed with positive reinforcement and students' engagement techniques showed better academic outcomes compared to those relying on punitive measures.

## Conclusion

The study on classroom management strategies in secondary schools in Kaduna State reveals key insights into the practices, challenges, and outcomes associated with managing classrooms in the State. It was evident that while many teachers employ preventive strategies, such as establishing clear rules and fostering positive relationships, challenges related to overcrowded classrooms, and inadequate resources significantly hinder the effectiveness of these strategies. Notably, the disparity between urban and rural schools in terms of resources and infrastructure further compounds the difficulties faced by teachers, with rural schools reporting greater deficits.

Despite these challenges, the study underscores the importance of adopting comprehensive, proactive approaches to classroom management. Teachers who used a variety of instructional techniques, maintained consistent communication with students, and actively engaged with them

reported fewer disruptions and better academic outcomes. This finding aligns with previous studies by Korpershoek et al. (2016) and Soheili et al. (2015), which emphasize the positive effects of proactive classroom management on student behaviour and academic achievement.

The recommendations presented such as enhancing professional development, improving resource allocation, integrating technology, and addressing the unique needs of both urban and rural schools are critical for creating a more effective and equitable educational environment in Kaduna State. Policymakers must prioritize these interventions to address the systemic challenges that impede effective classroom management and, by extension, student success. The study advocates for tailored solutions that consider local contexts and teacher capacities, ultimately striving to enhance the quality of education in Kaduna State. By addressing these gaps and fostering a supportive learning environment, Kaduna State can achieve improved academic performance, reduced behavioural issues, and a more conducive atmosphere for both teaching and learning.

### **Recommendations**

Based on the findings of the study, the following recommendations were made to improve classroom management strategies in secondary schools in Kaduna State:

1. **Continuous Professional Development Teacher Support Systems:** teachers should undergo regular training on effective classroom management strategies, focusing on proactive and student-centered approaches. Workshops and seminars could cover areas such as behaviour management, engaging instructional techniques, and managing diverse classrooms effectively. This will enhance their capacity to address both behavioural and academic challenges. Teacher training institutions should embed comprehensive classroom management courses into their curriculum. This would prepare prospective teachers with the knowledge and skills required to handle real-world classroom challenges effectively. Teachers should be trained in culturally responsive pedagogy to address the diverse needs of students in Kaduna State. This includes being sensitive to cultural differences and fostering an inclusive environment where every student feels valued, relevant, accepted and with all sense of belonging. Establishing mentorship

programmes where experienced teachers guide new or struggling teachers can help improve classroom management practices. Additionally, providing access to counseling and peer support networks can address teacher burnout and promote collaborative problem-solving.

2. **Adequate Resources and Infrastructure:** the government and school administrators should prioritize improving classroom conditions, including reducing overcrowding, providing sufficient furniture, and ensuring that learning environments are conducive. Access to teaching aids, such as multimedia tools and textbooks, can also enhance engagement and minimize disruptions. Leveraging technology to monitor student attendance, behaviour, and performance can streamline classroom management. Interactive tools like smart boards and learning management systems can engage students more effectively and reduce off-task behaviour. Schools should establish systems for monitoring and evaluating the effectiveness of classroom management practices. Feedback from students and teachers can be used to identify gaps and implement necessary improvements.
3. **Policy Implementation:** education policymakers should develop and enforce guidelines on classroom management practices that align with contemporary educational standards. These policies should discourage punitive measures such as corporal punishment while promoting positive reinforcement strategies. Recognizing the disparities between urban and rural schools, interventions should be context-specific. Rural schools may require more foundational support, such as teacher recruitment and infrastructural development, while urban schools may focus on integrating advanced management techniques and technology. Schools should foster strong relationships with parents by organizing regular parent-teacher meetings and workshops. Engaging parents in the educational process can help address behavioural issues stemming from home environments and create a more supportive learning atmosphere.

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