

INVESTIGATING THE LEVEL OF SCIENCE AND MATHEMATICS TEACHERS' EMPLOYMENT OF ARTIFICIAL INTELLIGENCE APPLICATIONS IN THE EDUCATIONAL PROCESS

BY

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ABSTRACT

This study investigated the level of science and mathematics teachers' employment of artificial intelligence applications in the educational process in Abuja Municipal Area Council (AMAC), Federal Capital Territory, Abuja. The study employed the descriptive survey research design approach to achieve the objectives of the study. A questionnaire consisting of 22 items was designed, and the study population comprised of all the mathematics teachers and science teachers in government secondary schools in Abuja Municipal Area Council (AMAC), while sample size consisted of 358 male and female teachers. Data collected were analyzed using descriptive statistics of means and standard deviations to proffer answers to research questions asked. The results revealed that the level of science and mathematics teachers' employment of artificial intelligence applications in the educational process was moderate. It also revealed that there are statistically significant differences between genders in favour of female teachers at the level of employing artificial intelligence applications; there were no differences due to specialization. The study recommended among others that; shedding light on new services and applications provided by artificial intelligence in teaching and learning, publishing them, and introducing teachers to them through teaching methods and educational activities; there is a need for science and mathematics teachers, especially males, to pay attention to the use of artificial intelligence applications in teaching and learning because of its importance in developing teaching methods; teachers should be made aware of the need to exploit artificial intelligence techniques according to the STEM approach.

Keywords: Artificial intelligence, Applications of artificial intelligence; Mathematics teachers; Science teachers

Introduction

Artificial intelligence, with its various uses and applications, as an applied science, has become the backbone of daily life, affecting the human race in its present and future. It has become an indispensable reality in light of the tremendous technical development which the world is witnessing. Rather, it is a tangible reality today and what this development can represent in terms of complete dependence in the life of humanity on the computer in the smallest details of daily life through the information revolution and technical trends. In addition, it is an implicit reference to cultural communication and technical communication between people in various parts of the world. Artificial intelligence has an important role in many fields, such as the modern educational and educational process, and it represents an urgent necessity whose applications cannot be dispensed with (Karsenti, 2019). There has

been increased interest in researching the possibility of harnessing artificial intelligence to support the educational process, enhance learning environments, and work on developing, teaching methods and transforming them from indoctrination to creativity (Farzaneh et al., 2019). Artificial intelligence and its applications have a role in improving and developing all areas of life, through the development of computer systems to operate with superior efficiency similar to the competence of an expert human being (Mahmoud, 2020). Artificial intelligence can also contribute to the development of science and mathematics curricula by continuously updating lessons and presenting them to students in a manner commensurate with their needs and abilities through artificial intelligence (Al-Qutaish, 2022).

The most important characteristics of artificial intelligence applications in science and mathematics are great speed, high accuracy, and long working periods. It is also characterized by high efficiency in data management, the ability to extrapolate, extrapolate and deduce, deal with conflicting data, and symbolically represent information. In addition, it can learn, acquire knowledge, and apply it procedurally (Topal et al., 2021). Artificial intelligence applications can make the learning environment a smart environment by helping to analyze students' learning behavior and provide them with appropriate support. They allow students to participate and interact and provide them with an ideal learning environment. They also provide analysis and support to help teachers improve their teaching methods and real-time assessment of the impact of learning activities on student engagement and academic outcomes (Zarrouki & Falata, 2020). Al-Atl and Al-Anzi (2021) added that the use of artificial intelligence applications in education helps to improve the students' leadership level by teaching them. Students can follow the interactive and educational steps explaining the scientific material, practicing tests, and knowing the correct answers. This, in turn, leads to assessing himself and knowing his level and increasing the creative and imaginative ability of the student, using graphic and photographic programs in highlighting the scientific material.

In the similar context, robots have been employed in STEM education (meaning the integration of science, mathematics, engineering, and technology). Countries, including Jordan, have begun to adopt this education, which includes technology, and part of it is the applications of artificial intelligence and robotics (Al-Kanaan, 2021). This interest shows the need to employ artificial intelligence applications in teaching science and mathematics. In this context, many studies have emphasized the employment of artificial intelligence applications in education in general and the teaching of science and mathematics in

particular, such as Mahmoud's (2020) study, which emphasized the need to employ artificial intelligence applications in educational institutions, raise awareness of the positive effects of artificial intelligence, and train teachers on it. Murphy (2019) also confirmed the interest of teachers in employing applications that take advantage of the capabilities of artificial intelligence in education.

Artificial intelligence offers us many capabilities that we need to employ with the digital generation that is indispensable to technology. Preparing for the future requires employing artificial intelligence applications in teaching scientific subjects (Aldosari, 2020). It is time to get our teachers ready for it; science and mathematics are among the subjects that have their place in the educational system and are of particular importance among other subjects. It is imperative to diversify the methods of presenting them to suit the learner. Hence, there is a dear need to carry out this study to investigate the level of science and mathematics teachers' employment of artificial intelligence applications in the educational process from their point of view.

Several studies related to this present study have been reviewed. Al-Roumi and Al-Qahtani (2023) carried out a study aimed at determining the skills of employing artificial intelligence applications in improving learning outcomes for secondary school students in Saudi Arabia. The study used the descriptive approach, and a questionnaire was applied to a sample of 414 male and female managers. It concluded that the high role of the skills of employing artificial intelligence applications in improving student learning outcomes and the weakness of applied reality in secondary schools. Man (2021) also examined the opportunities and challenges faced by educational leadership based on artificial intelligence in the field of education in China by classifying the advanced global progress of artificial intelligence in education and analyzing the latest theoretical and practical results of artificial intelligence in education. The results showed that the opportunities brought by artificial intelligence in education are greater than the challenges. The study found that this significantly affects the direction and pace of global education reform. Thus, education should follow the trend of updating educational goals and implications promptly. Al-Atl and Al-Anzi (2021) identified the importance of artificial intelligence technology in the educational process and the challenges facing its use in education in the State of Kuwait. The descriptive approach was used, and the study sample consisted of 229 male and female students, to whom a questionnaire was applied. The results showed that artificial intelligence technology has importance in the educational process. It

allows students to learn at anytime and anywhere in the world and provides flexibility in presenting scientific material to suit students' abilities and students and teachers with feedback. It also concluded some challenges, including the lack of specialists and experts in artificial intelligence technology and its employment in the educational process.

Tyson and Sauers (2021) examined the experiences of school leaders in adopting and implementing artificial intelligence systems in their schools in the US state of Georgia. To achieve this goal, the study adopted the qualitative case study methodology by interviewing seven individuals who have adopted artificial intelligence programs in their schools. The results showed that the prevalence of Artificial intelligence applications among school leaders depends on the clarity of the adoption and implementation of artificial intelligence applications. The results also indicated that school leaders actively participated in the training related to the adoption and implementation of artificial intelligence. Al-Kanaan's (2021) study explored the level of awareness of employing artificial intelligence applications in science education among female science teachers before serving in Saudi Arabia. The descriptive survey method was used, and a questionnaire was applied to a sample of (43) female teachers. The study revealed a low level of pre-service science teachers' awareness of employing artificial intelligence applications in science education as a whole. Al-Awfi and Al-Rahili (2021) aimed to identify the possibility of employing artificial intelligence applications in developing innovative abilities in teaching mathematics among secondary school students in Saudi Arabia. To collect data, a questionnaire was prepared and applied to (150) female teachers. The study concluded that mathematics teachers have a medium level of knowledge of artificial intelligence applications in developing innovative capabilities. The results also showed that there was no difference due to the variable of educational qualification and years of experience.

Al-Ghamdi and Al-Frani (2021) revealed the reality of special education teachers' use of educational applications of artificial intelligence and the trend towards them from the teachers' point of view at Al-Noor Institute in Jeddah Governorate. The descriptive approach was used, and a questionnaire was applied to (27) female teachers. The results showed that the domain of the importance of using educational applications of artificial intelligence received a strongly agreed degree. Murphy (2019) showed three types of applications based on artificial intelligence: intelligent teaching systems that provide adaptive and personalized

learning for students, automatic correction of essay exams, and early warning systems for students academically.

Artificial intelligence applications in education contribute to planning, evaluation, training, education, and acquiring skills in various fields, which contributes to learners achieving academic excellence (Incerti, 2020).. In view of this point, the researcher investigated the level of science and mathematics teachers' employment of artificial intelligence applications in the educational process in Abuja Municipal Area Council (AMAC), Federal Capital Territory, Abuja in particular.

Objectives of the Study

The objective of the study was to investigate the level of science and mathematics teachers' employment of artificial intelligence applications in the educational process in Abuja Municipal Area Council (AMAC), Federal Capital Territory, Abuja. Particularly, the study sought to:

1. find out the degree of science and mathematics teachers' employment of artificial intelligence applications in the educational process from their point of view; and
2. determine whether there are statistically significant differences between the means of the study sample's responses of the level of science and mathematics teachers' employment of artificial intelligence applications in the educational process due to the variables of gender and specialization.

Research Questions

The following research questions were asked and answered in the course of study:

1. What is the degree of science and mathematics teachers' employment of artificial intelligence applications in the educational process from their point of view?
2. Are there statistically significant difference between the means of the study sample's responses of the level of science and mathematics teachers' employment of artificial intelligence applications in the educational process due to the variables of gender and specialization?

Methodology

This study employed descriptive survey design as it suits the nature and objectives of this present study. The population of the study comprised of all the mathematics teachers and science teachers in Abuja Municipal Area Council (AMAC), Federal Capital Territory, Abuja in Government secondary schools, numbered (341) mathematics teachers and (286) science

teachers in the academic year 2025/2026. A random sample was selected, consisting of (187) male and female mathematics teachers and (171) science teachers. Table 1 indicates the distribution of the study sample according to their demographic variables.

Table 1. Description of the Study Sample according to Variables

Variable	Group	Freq.	%	Total
Gender	Male	167	%46.6	358
	Female	192	%53.4	
Specialization	Mathematics	187	%52.2	358
	Science	171	%47.8	

Source: Field Survey, 2025

Researchers designed an instrument called questionnaire according to a five-point Likert scale, and it consisted in its initial form of (24) items after reviewing the relevant theoretical literature and previous studies. The study instrument was presented to 3 specialists and experts in artificial intelligence and educational technology. They were asked to express their opinions and observations about the correctness of the paragraphs of the instrument. Based on their observations and opinions, some items were amended and deleted so that the final form consisted of (22) items to suit the present study.

To ensure the reliability of the instrument, the test-retest method was employed by applying the study instrument and re-applying it after two weeks to a group outside the study sample consisting of (36) male and female teachers. Then, the reliability coefficient was calculated using the internal consistency method according to the Cronbach alpha equation. It scored (0.91), which is a high index and indicates the questionnaire's reliability.

For data analysis, descriptive statistics of means and standard deviations and two-way analysis of variance (ANOVA), and Cronbach alpha coefficient were used. To judge the means of the respondents' responses to the items, a five-point Likert scale was adopted in the correction, and the mean values were determined as follows: less than (2.33) low, (2.34-3.67) medium, (3.68-5) high.

Results and Discussions

The analysis of data and discussion were done according to the research questions:

Research Question One: What is the degree of science and mathematics teachers' employment of artificial intelligence applications in the educational process from their point of view? To answer this question, the means and standard deviations were extracted for each item of the study instrument, as shown in Table 2.

Table 2: Means and Standard Deviations for Items of the Level of Science and Mathematics Teachers' Employment of Artificial Intelligence Applications in the Educational Process, arranged in Descending Order

Rank	No.	Item	Mean(X)	Standard deviation	Level
1	14	I develop the skills of some types of thinking using artificial intelligence techniques, such as critical, creative, reflective, and imaginative thinking.	4.09	0.96	High
2	1	I use written, image, and voice search engines that work with artificial intelligence technology.	3.99	0.94	High
3	10	I use artificial intelligence translation apps like Google Translate.	3.97	0.97	High
4	2	I motivate students by designing interactive activities with specific goals, such as games and simulations.	3.89	0.912	High
5	11	I use the Internet of Things technology to help me complete my scientific tasks faster.	3.85	0.97	High
6	5	I add a kind of vitality and attractiveness when presenting the educational material by employing artificial intelligence applications.	3.81	1.05	High
7	20	I interact with Chabot.	3.74	1.03	High
8	16	I use artificial intelligence applications to determine the subjects that students prefer.	3.66	0.95	Medium
9	19	I employ virtual reality applications in education.	3.65	0.990	Medium
10	7	I generate questions according to students' levels using expert systems.	3.63	0.96	Medium
11	18	I analyze exam results using artificial intelligence applications to choose the best type of evaluation.	3.62	1.12	Medium
12	15	I create a system that allows students to interact with the academic content.	3.60	1.03	Medium
13	17	I use artificial intelligence applications to determine the most effective methods in the learning process.	3.51	0.95	Medium
14	13	I develop students' scientific research skills by adopting artificial intelligence techniques.	3.50	1.11	Medium
15	12	I employ personal assistants in the mobile phone to search for information such as Siri and Bixby.	3.36	1.32	Medium
16	6	I provide feedback to students using artificial intelligence applications.	3.13	0.84	Medium
17	21	I create lessons with smart digital content using artificial intelligence.	3.08	0.95	Medium
18	4	I encourage interaction between me and the students, and the students themselves using collaborative learning frameworks suitable for Artificial intelligence applications.	3.03	0.93	Medium

19	3	I provide realistic examples of the content of the lesson by employing augmented reality technology.	3.01	0.86	Medium
20	9	I prepare educational activities using artificial intelligence technology that take into account individual differences among students.	2.97	0.99	Medium
21	22	I spread the culture of artificial intelligence among students.	2.88	1.02	Medium
22	8	I enrich the programs to students using artificial intelligence techniques based on a STEM approach.	2.8	1.05	Medium
Total			3.49	0.79	High

The results in Table 2 show that the average level of science and mathematics teachers' employment of artificial intelligence applications in the educational process at the macro level came to a moderate degree with a mean of (3.49) and a standard deviation (0.79). Item (14) "I develop the skills of some types of thinking using artificial intelligence techniques, such as critical, creative, reflective and imaginative thinking" ranked first with a mean of (4.09), a standard deviation of (0.96), and a high degree. The rest of the most employed items of artificial intelligence applications in the educational process that came with a high degree talk about the use of written, image, and audio search engines and translation applications that work with artificial intelligence technology. They also included motivating students to design interactive activities with specific goals, such as games and simulations using the Internet of Things technology that added attraction when presenting the educational material by employing artificial intelligence applications and interacting with interactive Chabot. This result may be due to the respondents realizing that artificial intelligence techniques are among the tools that stimulate creativity, imagination, and thinking in particular. Also, these technologies depend in their design, implementation, and applications on creative, innovative, and reflective thinking. In addition, by following up on the experiences of others in using these technologies, the respondents formed a desire to use them, especially with the consequent success stories that the respondents would like to write for the benefit of individuals and society.

Moreover, the study sample believes that the impact of artificial intelligence techniques is direct and clear in developing students' thinking skills, due to the correlation of the performance of these technologies with mathematics, algorithms, and the like. Item (8) "I enrich the programs to students using artificial intelligence techniques according to the STEM approach" ranked last, with a mean of (2.81), a standard deviation of (1.05), and a

moderate degree. The least employed items of artificial intelligence applications in the educational process were moderate. They included spreading the culture of artificial intelligence among students and preparing educational activities using artificial intelligence technology that takes into account individual differences among students while providing realistic examples using augmented reality technology. Also, they included encouragement for interaction between the teacher and students and students themselves, preparing lessons with smart digital content using artificial intelligence, providing feedback to students using artificial intelligence applications, and employing personal assistants on mobile phones to search for information. This result may be attributed to the fact that the STEM approach is still new to them in the educational field. Especially, since this approach requires a lot of financial resources, in addition to the lack of capabilities through which this approach can be applied due to its many requirements and the relative newness of these technologies in the educational field. In addition, the result may be due to the lack of technical and qualified cadres who are aware of the implications of these technologies. In addition, the simplicity of their information and knowledge of these technologies in a way does not help them to overcome and solve any problem that may arise in these technologies and their uses, which requires reviewing successive developments in this field, whether courses, conferences, or seminars. Artificial intelligence applications may not be available at present, and it can also be said that it is due to the absence of a department specialized in artificial intelligence in the ministry, and the scarcity of sources in Arabic that dealt with this subject and on which it can be relied upon. This result is consistent with that of Al-Awfi and Al-Rehaili (2021), who showed that female mathematics teachers have an average level of knowledge of artificial intelligence applications. Additionally, Al-Atl and Al-Anzi (2021) showed that artificial intelligence technology is important in the educational process, as it allows learning for students at anytime and anywhere in the world and provides flexibility in presenting scientific material in a way that suits students' capabilities and students and teachers alike with feedback. However, the result is inconsistent with that of Al-Roumi and Al-Qahtani (2023), who showed the weakness of the reality of employing artificial intelligence applications in secondary schools, and that of Al-Kanaan (2021), who revealed the low level

of pre-service science teachers' awareness of employing artificial intelligence applications in science education as a whole. Moreover, Al-Ghamdi and Al-Frani (2021) showed that the domain of the importance of using educational applications for artificial intelligence obtained a strongly agreed degree.

Research Question Two: Are there statistically significant differences between the means of the study sample's responses of the level of science and mathematics teachers' employment of artificial intelligence applications in the educational process due to the variables of gender and specialization? To answer this question, the means and standard deviations of the level of science and mathematics teachers' employment of artificial intelligence applications in the educational process were extracted according to the variables of gender and specialization.

Table 3: Means and Standard Deviations of the Level of Science and Mathematics Teachers' Employment of Artificial Intelligence Applications in the Educational Process according to the Variables of Gender and Specialization

Variable	Group	Mean (X)	Standard deviation
Gender	Male	3.42	0.95
	Female	3.69	0.88
Specialization	Mathematics	3.58	0.82
	Science	3.63	0.86

Table 3 showed apparent differences between the means of the level of science and mathematics teachers' employment of artificial intelligence applications in the educational process according to the variables of gender and specialization. To find out if these differences were statistically significant, two-way analysis of variance (ANOVA) was used. Table 4 displays the results.

Table 4: Two-way Analysis of Variance (ANOVA)

Source	Sum of squares	df	Mean of squares	f	Sig.
Gender	4.308	1	4.308	6.267	0.013*
Specialization	1.589	1	1.589	1.156	0.316
Error	244,572	356	687		
Total	1858.127	358			

*Statistically significant ($\alpha \leq 0.05$)

Table 4 shows that there were statistically significant differences at the significance level ($\alpha \leq 0.05$) between the means of the study sample's responses of the level of science and mathematics teachers' employment of artificial intelligence applications in the educational process, due to the

gender variable. The f-value was 6.267, and the significance level was (0.013). The differences came in favor of female teachers. This result may be because female mathematics and science teachers, in light of the contemporary changes and the information and technology revolution, have become passionate about learning and searching for technical applications. They benefit from those technological tools based on artificial intelligence in acquiring skills and knowledge in a variety of ways according to their needs in a manner consistent with the digital age in which we live. They also have positive attitudes toward employing artificial intelligence applications in education. This result means that teachers realize the importance and usefulness of these applications in the educational process. It is also evident from Table 4 that there were no statistically significant differences at the significance level of ($\alpha \leq 0.05$) between the means of the study sample's responses of the level of science and mathematics teachers' employment of artificial intelligence applications in the educational process due to the variable of specialization. The value of f was (1.156), and the significance level scored (0.316). This result may be due to the novelty of artificial intelligence and the lack of its applications that can be employed in science and mathematics education. Also, the applications of artificial intelligence were not addressed in the program for preparing new teachers for both majors. Likewise, pre-service science and mathematics teachers during university studies did not see faculty members employing artificial intelligence applications in their lectures.

Recommendations

In light of the results of this study, the following recommendations were given:

1. Shedding light on the new services and applications provided by artificial intelligence in the field of teaching and learning, publishing them, and introducing them to teachers through teaching methods and educational activities.
2. There is a need for science and mathematics teachers, especially males, to pay attention to the use of artificial intelligence applications in teaching and learning because of its importance in developing teaching methods.
3. Teachers should be made aware of the need to exploit artificial intelligence techniques according to the STEM approach.

4. There should be inclusion of artificial intelligence and its applications in teaching science and mathematics in the program for preparing new teachers.
5. Conduct a research to detect the effectiveness of a training program for developing the performance of mathematics or science teachers using artificial intelligence applications.

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INFLUENCE OF CYBER AND EMOTIONAL BULLYING ON ACADEMIC ACHIEVEMENT OF UNIVERSITY STUDENTS IN NIGER STATE OF NIGERIA

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ABSTRACT

The study investigated the influence of cyber and emotional bullying on academic achievement of university students in Niger State of Nigeria. Descriptive survey research design was adopted for the study. The population comprised 875 (300 level) Biology students from universities in Niger State. A sample of 265 (300 level) Biology students was adopted using Krejcie and Morgan (1970) population table for the study as respondents. Multi stage sample procedure (stratify, simple random sampling technique and proportionate sampling technique) was used to select the sample size. Two instruments were used for data collection which is Perceived Influenced Bullying Questionnaire (PIBQ) and Score Proforma (SP) Form. The instrument PIBQ yielded a validity index of 0.79 and 0.88 and a reliability coefficient index of 0.80 respectively. Descriptive statistic of mean and standard deviation was used to answer research questions while t-test was used to test the hypotheses at 0.05 level of significance. Findings of the study revealed no significant influence of cyber bullying on the academic achievement of university students in Niger State, Nigeria. It also revealed that there is a significant influence of emotional bullying on academic achievement of university students in Niger State, Nigeria. The study concludes that there is significant influence of cyber and emotional bullying on academic achievement of university students in Niger State, Nigeria. It thus recommended that there is need in the drive towards technological advancement and ICT usage. Professionals, Educational Psychologist and Counsellors should be employed in universities in order to teach and guide the students on the negative effect of Cyber bullying on academic achievement and social life of students. There is need for Parents and School administrators to work hand-in-hand in other to control emotional bullying among Students and to further help they modify the behavior of bullied students.

Introduction

Academic achievement is the extent to which a student's, teacher or institution has attained their short or long-term educational goals. Completion of educational benchmarks such as Diploma Certificate, NCE and Bachelor's degree represent academic achievement. It is commonly measured through examinations or continuous assessment, but there is no general agreement on how and where is best done or evaluated. The achievement of school is measured by the academic achievement index (Mushtaq & Khan, 2020). Academic achievement refers to how

well a student accomplishes his or her task and studies. It is the level of knowledge shown in an area or course compared to the norm and it is generally measured using the grade point average. Grades are certainly the most well-known indicator of academic achievement. Grade is the student's score from a particular course or subject that a test or exams is given. Grade is most often an average of assignment or test or exam scores of the students (Willcox, 2020).

Academic achievement is the knowledge gained which is assessed by marks by a Teacher and/or educational goals set by students and teachers to be achieved over a specific period of time. These goals are measured by using continuous assessment or examination results (Mulu, Tadesse & Yeshaneh, 2022). Academic achievement means being a successful student who does well in school and engages in extra-curricular activities. It is the benchmark by which student school curriculum and teacher competence is measured and almost every student undergoes some type of formal academic testing in addition to regular class or lecture quizzes, tests, and examinations. Formal testing refers to the use of norm – referenced instruments with standardized procedures for administration and scoring (Avosch, 2021). Academic achievement is the assessment or measurement of student and teacher ability to achieve the stated objectives and goals of a given institution or training center. .

Academic achievement is a multidimensional construct composed of the skills, attitudes and behaviors of the students that contribute to academic success in the classroom. Majority of students who withdraw from school are as a result of their poor academic achievement. However, the poor academic achievement of students came as a result of factors that influence learning or learner in the school or outside the school environment.

Since academic achievement is assessment of the student, teacher and institution ability to achieve the stated goals and objective. However, academic achievement can be influenced by some factors depending on individual and location. Factors that influence academic achievement and productivity include; Person's background, mental health, financial status of parents, constant migration, classroom environment, school environments and bullying among others. In terms of school environment, the student may encounter bullying and discrimination which can interrupt and affect the learning process of the student and it will affect the students' academic achievement if it is not managed. Kapar (2018) stated that, attitude of the students, school resources, leadership aspect, skills and abilities of the teachers, classroom environment, role of

parents, social circle, psychological and health related factors, home environment, teaching and learning methods, visual and hearing impairment and bullying are factors that influence academic achievement of students. Therefore, bullying is the act of repeated aggressive behavior intended to hurt another individual or students, physically, mentally or emotionally. Abdulsalam, Aidohani and Francis (2017) described bullying as a subcategory of interpersonal aggression characterized by intentionality, repetition and an imbalance of power, with abuse of the power being the primary distinction between bullying and other forms of aggression.

Cyber bullying- which is also called cyber harassment, is a form of bullying or harassment by using electronic means, it is also known as online bullying. It has become increasingly common, especially among students at tertiary institutions in Nigeria as a result of the digital sphere and technological advancement. Cyber bullying is a situation where a bully harasses a student (bullied) using the internet and other digital space, particularly on social media sites. When it happens, a student (bullied) will feel as if he or she is being attacked openly inside his or her own home, and it can seem like there is nowhere to escape. The effects of this bullying can last for a long time and can affect students' wellbeing, mentally, academically, emotionally and physically (Yetunde, 2019). Cyber bullying can occur through text messages, and applications, or online in social media forums, or posting messages where people can view, participate in or share content. Cyber bullying includes; messages sending, posting, sharing harmful messages, false, or mean content about someone negatively. It can also include sharing personal or private information about someone else causing embarrassment or humiliation (Plan, 2016). The most common place where cyber bullying occurs are social media; such as Facebook, Instagram, Snap chat, whatsapp, TikTok, text messaging, and email among others. This means of bullying is more common among the students of higher institutions. It can lead to school related problems like poor school engagement and skipping of classes. Therefore cyber bullying can affect student's academic achievement in the school (Avosh, 2021).

Sexual bullying is a behavior, physical or non-physical, where sexuality or gender is used as a weapon against another. Sexual harassment is unwanted behavior of a sexual nature which violates a student dignity, makes him or her feel intimidated, degraded or humiliated and create a hostile or offensive environment. This behavior can happen inside and outside school, in social

group and online. It is a serious form of hate crime and should be treated as such by parents, teachers and society in general (Gordon, 2021).

Sexual bullying is a form of bullying that occurs when an individual or a group of individuals harass others through comments or actions that is sexual in nature. It is a harmful behavior that has adverse consequences on mental health, well-being and academic achievement of students, and it doesn't just happen in school yards or playgrounds anymore, rather it happens within school, hostel, and outside the school environment. Being sexually bullied can be equally detrimental and distressing. Students who engage in sexual bullying or harassment can cause a great deal of harm to others (Mushta and Khan, 2020). Sexual bullying above all is a manifestation of power related and verbal harassment of student sex. Female students are much more likely to be victims of sexual harassment or rape, because they are more often less powerful than men, more vulnerable and insecure, lack of self-confidence, and have been socialized to suffer in silence (Tidy, 2021).

Sexual bullying includes; staring, unwelcome touching, suggestive comments or jokes, unwanted invitation to go out on dates or request for sex, intrusive quest about a person's private life or body, communicating content that is sexual in nature through social media or text messages and displaying images of a sexual nature around the schools. This kind of harassment and rape happen in schools, especially in high institutions, it happens on a daily base and most consequences are on female students which can affect their attendance and academic achievement in schools. Infact, sometimes it can lead to voluntary withdrawal from school as a result of fear and even unwanted pregnancy (Aragone, 2016).

Emotional (social) bullying is also known as covert or relational bullying, it's designed to humiliate and damage someone's social reputation. We humans are social being and relationships are vital to our health. It is often harder to know about this bullying and can be carried out behind the bullied person's back. It is a designed to harm someone's social reputation and/or cause humiliation. Social bullying can include lying and spreading rumors, negative facial or physical gesture, menacing or contemptuous looks, mimicking unkindly, encouraging others to social exclude someone, playing nasty jokes to embarrass and humiliate or damage a student social reputation or social acceptance which can affect the student mode to learn and may also result to his or her poor academic achievement in the school (Ponill, 2021). Emotional or Social

bullying is a type of bullying that happens when someone tries to harm a person's relationship or reputations. It can happen online or verbally or even physically. This type of harms can target a person's mental health because it affects their sense of belonging which is part of human nature or desire to feel accepted as a member of a group or society. Social bullying can have several consequences on the targeted victims. The goal of social bullying is to isolate a targeted person from others. That means the person will feel lonely and believe he has no one to turn to for support (Mbah, 2021). Emotional (social) bullying can have lifelong effects on a student. Being a target of the bully can harm mental health, relationships, academic achievement and physical health of the student. It can also increase the risk for depression, anxiety, sleep difficulties, lower academic achievement, and dropping out from school.

Students can experience bullying for a variety of reasons, but when it comes to prejudicial bullying, it focuses on factors like the color of the students skin, their religious practices, and their sexual orientation. Prejudicial bullying is based on stereotypes, is the fears people have toward others who are different from them in color, religion, tribe etc. It rises from a misguided or learned belief that certain groups of people deserve to be treated differently or with less respect. When prejudicial bullying occurs, the bullies students will be targeting others students who are different from them in times of religion, tribe, or color and singling them out for humiliation (Mba, 2021). Anytime a student is bull because of race, religion or sexual orientation it should be reported. Do not ignore this bullying or hope it will end. The three types of prejudicial bullying include, Racist, sexual orientation and religious bullying. The effect of this prejudicial bullying on students is that it destroys the dignity of an individual and confidence, it causes stress, anxiety disorder, panic attacks, mental illness and sometimes even suicide and self-harm. This type of bullying occurs frequently in Schools and students can be bullied for not fitting into a stereotype. This type of bullying can have many effects on the students' victims which include; depression and isolation, which can led to self-harm and poor academic achievements, and also they may not want to go to school because they are afraid of being bullied (UNESCO, 2017). Prejudicial bullying has to do with gender identity, sexism, Nationalism, classism, sexual discrimination, racism, religious discrimination and language discrimination which sometimes are learned from Parents, Lecturers, or experience from

someone or a group the student belongs to. Therefore, prejudicial bullying can negatively influence student's academic achievement.

Statement of the Problem

Academic achievement of students remains an issue of great concern to Educationists and Researchers. It is a means of assessing the extent to which learning has taken place in the students with the aim of intending to improve the student's life. Academic achievement is commonly measured by semester examinations or tests or continuous assessment in the school. The prevalent poor academic achievement of university students in Niger state today can be as a result of some factors, among which are cyber and emotional bullying. Cyber and emotional bullying are bad behavior among the university students in Niger state in recent times which need urgent attention. It occurs among the students through passing foul statements on others, harassment, tormenting others, passing derogatory statements, spreading malicious rumors, isolating members from groups, provoking others, damaging others reputations, playing school pranks, and teasing others.

Cyber and emotional bullying are problems that can affect all students, either the student that bullied, the victims (bullied), and those who witness the act. The bullying act is a maladaptive behavior, encountered regularly by University Students in Schools and outside the school environment. It is complex social problems that have many negative consequences for both bullies and victims especially as cyber and emotional bullying have the effect of causing both physical and psychological harm to the victims. Students affected by cyber and emotional bullying can be at higher risk of developing depression, anxiety, low self-esteem, loneliness, mistrust, poor academic achievement and poor mental health as compared to others that are not. The behavior among university students can lead to carry over syndrome which can occur as a result of poor academic achievement. Therefore, it is against this background that this study is investigating the influence of cyber and Emotional bullying on academic achievement of university students in Niger, Nigeria.

Research Questions

This study was guided by the following research questions;

1. To what extent is the influence of cyberbullying on academic achievement of university Students in Niger State, Nigeria?

2. To what extent is the influence of emotional bullying on academic achievement of university Students at Tertiary in Niger State, Nigeria?

Objectives of the Study

The specific objectives of the study are:

1. To examine the influence of cyberbullying on academic achievement of university Students in Niger State, Nigeria.
2. To ascertain the influence of emotional bullying on academic achievement of university Students in Niger State, Nigeria.

Hypotheses

The study was guided by the following hypotheses:

- Ho₁: There is no significant influence of cyberbullying on academic achievement of university Students in Niger State, Nigeria.
- Ho₂: There is no significant influence of emotional bullying on academic achievement of university Students in Niger State, Nigeria.

Methodology

Descriptive survey research design was adopted for the study. The method involves sampling from the population of the study and generalizing the findings obtained from the analysis of the sampled data for the entire population. The population of the study is 875 (300 level) physics Science students from two universities in Niger state of Nigeria which comprise a state and federal university. A sample size of 265 students was selected using Krejcie and Morgan (1970) population Table for the study as Respondents. Multi stage sampling procedure was adopted for the study, stratify, simple random sampling, and proportionate sampling techniques were used to select the sample size for the study.

Two instruments were used for data collection. The first instrument was developed by the researcher and the questionnaire was titled: Influence of Bullying Questionnaire (IBQ) with 52 items. The responses to the items on the questionnaire were on five Rating – scales of: Many Times (more than 10 times) (MT) (5), Several Times (6 to 10 times) (ST) (4), Few Times (3 to 5 times) (FT) (3), Once or Twice (OT) (2), Never (N) (1). The second instrument is proforma and was used to extract or harvest the scores (CGPA) of second semester results of 300 level Biology Science students from the selected Universities. Construct and face validity check of the items on

the instruments was conducted by experts and yielded validity indices of 0.79 and 0.88 respectively. The instruments were pilot – tested on a small portion of the target population which are not part of the sampled size. Cronbach’s Alpha statistical method was used to determine the internal consistency and reliability of the instrument which yielded a reliability coefficient index of 0.80. Descriptive statistical method of mean and standard deviation was used to answer the research questions with an average mean of 3.00 and above indicating high influence while below the average mean indicates low perceived influence. t-test was used to test the null hypothesis at 0.05 level of significance. All analyses were subjected to Statistical Package for Social Science (SPSS), version 23.

Results

Research Questions 1: To what extent is the influence of cyber bullying on academic achievement of university students in Niger state, Nigeria?

Table 1: Descriptive Statistics on the influence of CyberBullying on Academic Achievement of university students in Niger State, Nigeria

Cyber Bullying:	MT	ST	FT	OT	NV	\bar{X}	Std.D
Students pretended to be someone else so that the fellow students could say and do bad things on the Internet.	43	56	59	29	78	2.84	1.46
Students used their cell phone number on the Internet and said bad and false things about others.	38	25	78	33	91	2.87	1.41
Students used their phone and send photos, videos, and mean messages to others to get them into trouble.	37	38	67	40	83	2.95	1.41
Students eliminated and blocked fellow students from facebook groups or any social media to leave them without any friends.	38	25	79	22	101	2.54	1.44
Average Mean	2.88						

MT = Many Times, ST = Several Times, FT = A Few Times, OT = Once or Twice, NV = Never

Table 1 shows the mean rating on the influence of cyber bullying on academic achievement of university students in Niger State, Nigeria. With an average mean of 2.88 the result shows that

there is low influence of cyber bullying academic achievement of university students in Niger State, Nigeria.

Research Questions 2: To what extend is the influence of Emotional bullying on academic achievement of university students in Niger State, Nigeria?

Table 2: Descriptive Statistics on the influence of Emotional bullying on academic achievement of university students in Niger State, Nigeria

Emotional Bullying:	MT	ST	FT	OT	NV	\bar{X}	Std.D
Students leave the table when the fellow student sits down.	45	41	40	23	116	3.53	1.56
Students use prank to mock at fellow student.	37	51	60	36	81	2.72	1.42
Students gossip about fellow students when they are not there.	47	41	51	42	84	3.72	1.49
Students encouraged fellow students to fight without them knowing the cause	44	52	64	32	73	2.86	1.44
Average Mean	3.31						

MT = Many Times, ST = Several Times, FT = A Few Times, OT = Once or Twice, NV = Never

Table 2 shows the rating mean on the influence of emotional bullying on academic achievement of university students in Niger State, Nigeria. With an average mean of 3.31 the result indicated that there is high influence of emotional bullying on academic achievement of university students in Niger State, Nigeria.

Test of the Hypotheses

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

H₀₁: There is no significant influence of cyber bullying on academic achievement of university students in Niger State, Nigeria.

Table 3: T-test on the influence of Cyber bullying on Academic Achievement of university students in Niger State of Nigeria

Variables	N	\bar{X}	Std.D	Df	t	Sig.(2tailed)	Decision
Cyber Bullying	265	28.89	4.486	264	-50.092	0.253	Accept H ₀₄
Academic Ach.	265	58.80	8.257				

t-test is not significant since $p > 0.05$ level of significance

Table 3 revealed no significant influence of cyber bullying on the academic achievement of university students in Niger State, Nigeria. The result which is given as: $t_{(264)} = -50.092$; (p-value = 0.253), implies that there is no significant influence of cyber bullying on academic achievement of university students in Niger State, Nigeria. The formulated hypothesis was therefore accepted since the p – value is greater than 0.05 significance level.

H₀₂: There is no significant influence of emotional bullying on academic achievement of university students in Niger state, Nigeria.

Table 4: T-test on the influence of Emotional bullying on the Academic Achievement of university students at Tertiary in Niger State, Nigeria

Variables	N	\bar{X}	Std.D	Df	T	Sig.(2tailed)	Decision
Emotional Bullying	265	28.66	6.017	264	-46.377	0.000	Reject H ₀₅
Academic Ach.	265	58.80	8.257				

t-test is significant since $p < 0.05$ level of significance

Table 4 revealed that there is a significant negative influence of Emotional bullying on the academic achievement of university students in Niger State, Nigeria. The result is given as: $t_{(264)} = -46.377$; p-value = 0.000), which implies that Emotional bullying has a significant influence on academic achievement of university students in Niger State, Nigeria. The formulated hypothesis was therefore rejected since the p – value is less than 0.05 significance level.

Discussion of Findings

Findings of the study on hypothesis one, revealed no significant negative influence of cyberbullying on the achievement of University students in Niger State, Nigeria. This finding is corroborated by Dugasa and Babu (2022) whose study revealed a negative effect of cyber bullying on students' academic achievement. Jamabo and Idimele (2021) showed that there is no significant difference on the high extends of which cyber bullying behavior influence academic performance among junior secondary school students in River state. Mbah (2020) study revealed that there is significant influence between cyber bullying and academic performance of students in Cameroon.

The result of the study on hypothesis two, revealed a significant negative influence of Emotional (Social) bullying on the academic achievement of university students in Niger State, Nigeria.

This finding is in agreement with Shoukat and Muzdalfa (2023) which showed a negative relationship between emotion bullying and academic achievement on both victim and bully. Muluk, et al., (2021) found out that emotional bullying affect students' academic achievement. Jamabo and Idimele (2021) study concluded that emotional bullying behaviours have significant influence on academic performance of students in River state. Garcia (2019) study concluded that there was significant relationship between emotional bullying and students' academic performance.

Conclusion

This study examined the influence of cyber and emotional bullying on the academic achievement of university students in Niger State, Nigeria. Using a descriptive survey design and a carefully selected sample of 265 Biology students, the findings revealed a complex relationship between bullying and academic outcomes. Specifically, while cyber bullying did not significantly influence academic achievement, emotional bullying showed a significant negative impact. These findings underscore the critical role that emotional well-being plays in students' academic success.

Recommendations

The following recommendations were made:

1. With the drive towards technological advancement and ICT usage, Professionals, Educational Psychologist and Counsellors should be employed in universities in order to teach and guide the students on the negative effect of Cyber bullying on academic achievement and social life of students.
2. There is need for Parents and School administrators to work hand-in-hand to control emotional bullying among students and to further help them modify the behavior of bullied students.

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RELEVANCE OF EDUCATIONAL PSYCHOLOGISTS IN DESIGNING AND IMPLEMENTING INDIVIDUALIZED EDUCATION PLANS (IEPs) FOR STUDENTS WITH LEARNING DISABILITIES IN SCHOOLS

BY

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ABSTRACT

The relevance of educational psychologists in designing and implementing Individualized Education Plans (IEPs) for students with learning disabilities in Nigerian schools is crucial in fostering inclusive education and addressing the unique academic needs of students with learning disabilities. This paper explores the relevance of educational psychologists in identifying learning disabilities through psychological assessments and their collaboration with teachers, parents, and specialists to create personalized learning interventions. It examines the components of effective IEPs and the challenges associated with their implementation in Nigeria, such as inadequate resources, lack of trained personnel, and societal stigma. The paper highlights the need for stronger policy frameworks and professional training to support educational psychologists in their role, ultimately improving academic outcomes for students with learning disabilities. Recommendations include advocating for greater government support, enhancing teacher training, and integrating mental health services within schools, and also Policies that promote inclusive education and allocate resources for students with special needs should be prioritized and regular meetings and open communication channels should be established to discuss the student's progress and make necessary adjustments to the IEP. This collaborative approach ensures that all stakeholders are actively involved in supporting the student. Through a comprehensive review of current practices, this paper underscores the importance of educational psychologists in ensuring that students with learning disabilities receive the customized support necessary to succeed in their academic journey.

Keywords: Educational Psychologists, Designing, Implementing, Individualized Education Plans (IEPs) and Learning Disabilities.

Introduction

The importance of inclusive education for students with learning disabilities has gained global recognition. In Nigeria, educational reforms have begun to focus on inclusive practices that cater to diverse learning needs. Individualized Education Plans (IEPs) serve as vital tools in ensuring that students with learning disabilities receive specialized support modified to their unique challenges (Adewale & Alabi, 2021). Educational psychologists play a pivotal role in both the design and implementation of IEPs, ensuring that students with learning disabilities have equitable access to quality education. This article discusses the relevance of educational

psychologists in the Nigerian context, highlighting the strategies they employ to meet the diverse needs of learners, as well as the challenges that hinder effective IEP implementation.

An Individualized Education Plan (IEP) is a formal plan designed for children with special educational needs, typically in primary and secondary schools. It outlines a personalized approach to ensure the child receives the necessary support and services to thrive academically, socially, and emotionally. The plan includes specific, measurable goals customized to the student's unique needs, strengths, and challenges. It also provides a summary of the child's current academic and functional performance, often based on evaluations conducted by teachers, psychologists, or other specialists. Taylor (2023) Individualized Education Plans (IEP) specifies the special services, accommodations, and modifications the child will receive, such as speech therapy, resource support, or adaptive technologies. Developed collaboratively, the plan involves a team comprising the child's parents, teachers, school psychologists, special education experts, and sometimes the student. In many countries, such as the United States, IEPs are governed by laws like the Individuals with Disabilities Education Act (IDEA, originally enacted in 1975 and last reauthorized in 2004), which ensures the child's right to free and appropriate public education. IEPs are reviewed and updated periodically—usually annually—to monitor the child's progress and adjust goals and services as needed (Wang, & Sheikh-Khalil, 2022).

Educational psychology is a branch of psychology focused on understanding how people learn and the factors that influence learning processes. It integrates psychological principles, theories, and practices to enhance teaching and learning experiences. Educational psychologists study a variety of topics, including cognitive development, motivation, learning styles, teaching methods, classroom management, and the design of educational materials and environments. Educational psychology examines how individuals acquire knowledge and skills, including an understanding of cognitive processes such as attention, memory, reasoning, and problem-solving. For example, Piaget's theory of cognitive development highlights how children's thinking evolves in stages, influencing how they learn at different ages (Santrock, 2022). Motivation is critical for effective learning. Educational psychologists explore intrinsic and extrinsic motivation and how these factors influence student engagement and performance. Theories like Maslow's hierarchy of needs emphasize the importance of meeting physiological and emotional needs for optimal learning outcomes (Ormrod, 2020). Educational psychology also considers

age-related and developmental changes in students. For instance, Erikson's psychosocial theory identifies stages of development that highlight the interplay between a child's social environment and personal growth, which is crucial for educational planning (Eggen & Kauchak, 2021). Understanding individual differences in learning abilities, styles, and needs is a central focus of educational psychology. Educational psychologists develop strategies to accommodate diverse learners, including those with special educational needs or learning disabilities (Alnahdi, 2022). Moreover, educational psychologists create and utilize various tools to measure learning progress, intelligence, and emotional well-being. These assessments help in designing personalized interventions to support struggling students (Snowman & McCown, 2022). Educational psychology further informs the development of effective teaching strategies and curricula tailored to diverse learning environments. It emphasizes active learning, scaffolding, and cooperative approaches to foster better academic outcomes. By helping teachers, administrators, and policymakers design effective educational practices, educational psychology supports students' holistic development. It also promotes inclusive education by addressing the needs of marginalized or differently-abled learners.

According to Lerner (2020), learning disabilities encompass a range of disorders that impair key academic abilities, such as listening, speaking, reading, writing, reasoning, or math skills. These disorders can make it difficult for affected individuals to process information in a way that supports academic success. In the context of Nigerian secondary schools, students with learning disabilities often struggle to keep up with the standard curriculum because it is typically designed for neurotypical learners and does not address the unique needs of students with learning disabilities. Mainstream education in Nigeria tends to adopt a "one-size-fits-all" approach, which limits the opportunities for students with learning disabilities to fully engage and excel (Stevenson, 2023). Research has shown that without tailored interventions—such as individualized education plans (IEPs), differentiated instruction, or specialized learning strategies—these students may experience academic failure and low self-esteem (Abdullahi, Ibrahim & Yusuf, 2023). Including these students requires a collaborative effort that involves not only curriculum modification but also the provision of appropriate learning materials and assistive technologies to support diverse learning styles (Oyetunde, Nuhu, & Bala, 2022). Educational psychologists and special education professionals play a critical role in designing

interventions that accommodate the needs of students with learning disabilities within the Nigerian education system.

Individualized Education Plan (IEP) is a modified document designed to address the specific educational needs of students with disabilities. Developed collaboratively by the school district, the student's parent or guardian, and, where appropriate, the student, the IEP identifies the student's unique disability, sets individualized educational goals, and outlines the support services required to achieve those goals (Obi, Amadi, & Uche, 2023). Serving as a roadmap, the IEP guides teachers and specialists in tracking the student's progress toward these personalized learning objectives. Teachers play a central role in monitoring and updating the IEP in partnership with the student's parents, ensuring the plan evolves as the student progresses. In cases where multiple educators are involved, such as subject-specific teachers or co-teachers, collaboration is essential to ensure the IEP is comprehensive and consistently implemented (Olawale & Shobowale, 2022). This cooperative approach ensures that all aspects of the student's educational experience align with the outlined goals and support services.

Beyond academic adjustments, the IEP facilitates a holistic approach to a child's development, integrating educational, rehabilitative, and social interventions. This ensures that the student not only achieves educational goals but also gains autonomy and confidence in social settings (Adewale & Alabi, 2021). By providing a structured plan that involves all key stakeholders, including parents and educators, the IEP helps students with learning disabilities thrive within the conventional education system, ensuring they receive the necessary accommodations and modifications for success. Educational psychologists are essential in identifying and assessing learning disabilities. Their expertise in psychological and educational assessments allows them to pinpoint the specific learning challenges faced by students, which is the foundation for designing effective IEPs (Obi, Amadi & Uche, 2023).

Relevance of Educational Psychologists in Designing and Implementing IEPs

According to Bateman and Linden (2021), Educational psychologists play a role in diagnosing students with learning disabilities and providing personalized interventions through IEPs:

1-Initial Assessment and Identification of Needs: The first step in creating an IEP is the comprehensive assessment of the student. Educational psychologists use various diagnostic tools and assessments to identify the nature and extent of a student's learning disability. This

evaluation provides a foundation for understanding the student's strengths and challenges, which guides the formulation of appropriate learning objectives (Alnahdi, 2020).

2-Setting SMART Goals: Individualized Education Plans (IEPs) are designed to address the specific needs of each student. Educational psychologists collaborate with teachers, parents, and other stakeholders to set SMART (Specific, Measurable, Achievable, Relevant, Time-bound) goals that cater to the student's unique learning requirements. These goals focus on both academic and social development, ensuring holistic support for the student (Mitchell, 2021).

3-Designing personalized Instructional Strategies: Based on the assessment and goals, educational psychologists recommend instructional strategies that cater to the student's learning style. These may include differentiated instruction, assistive technologies, and specific teaching methods that align with the student's strengths. For instance, a student with dyslexia may benefit from visual learning aids or text-to-speech software (Anderson & Putman, 2022)

4. Collaboration with Teachers: For successful implementation of IEPs, educational psychologists work closely with teachers to ensure that the instructional strategies are effectively integrated into the classroom. They provide ongoing professional development to teachers on understanding learning disabilities, adapting lesson plans, and using assistive technologies. This ensures that teachers are equipped with the skills to support students with disabilities (Sanches-Ferreira, Silveira-Maia & Alves, 2020).

5. Monitoring and Evaluation: Continuous monitoring and evaluation are crucial components of IEP implementation. Educational psychologists regularly assess the progress of students with learning disabilities to ensure that the IEP objectives are being met. They make adjustments to the plan as needed based on the student's progress, ensuring that the interventions remain relevant and effective (Stecker & Fuchs, 2021).

6. Parental Involvement: Parents play a significant role in the success of IEPs. Educational psychologists engage parents in the process, ensuring they understand the learning goals and the strategies being employed. Parental involvement is vital for reinforcing learning strategies at home and providing emotional support to students (Fish, 2020).

7. Personalized Learning Goals: IEPs are designed to set specific, measurable, and attainable learning goals based on the student's strengths and challenges. This allows for targeted intervention, ensuring that the student can progress at their pace (Rix, Hall & Nind, 2021).

8. Customized Teaching Methods: IEPs enable educators to implement specialized teaching methods or tools, such as assistive technology, multisensory learning strategies, or alternative assessments that align with the student's learning style (Dell'Anna, & Pellegrini, 2023).

9. Focused Support Services: Through an IEP, students with learning disabilities can receive additional services such as speech therapy, occupational therapy, or counseling, which support their overall development and academic performance (Lindsay, & Dockrell, 2020).

Challenges in Implementing IEPs for Students with Learning Disabilities

According to Anderson and Putman (2022) implementing Individualized Education Plans (IEPs) in Nigerian schools presents several challenges for educational psychologists. These challenges can be categorized into systemic, societal, institutional, and professional factors, as outlined below:

1. Lack of Awareness and Understanding of Learning Disabilities: One of the major challenges in implementing IEPs in Nigeria is the limited awareness and understanding of learning disabilities. Many teachers and school administrators lack the necessary training to identify and support students with learning disabilities. This results in delays in diagnosis and inadequate support for affected students (Brown & Clark, 2023).

2. Insufficient Resources: Nigerian schools, particularly in rural areas, often face resource constraints, including a lack of specialized staff, assistive technologies, and learning materials. These limitations hinder the effective design and implementation of IEPs, as schools may not have the necessary tools to cater to students with special needs (Abdullahi, Ibrahim & Yusuf, 2023).

3. Cultural Perceptions: Cultural perceptions of disability in Nigeria can also impede the implementation of IEPs. In some communities, learning disabilities are misunderstood or stigmatized, which may lead to reluctance to seek help for affected students. Educational psychologists must work to raise awareness and advocate for inclusive education practices that destigmatize learning disabilities (Bateman & Linden, 2021).

4. Shortage of Skilled Professionals: The implementation of IEPs is hindered by the lack of adequately trained educational psychologists. Many psychologists lack specialized training in IEP development and implementation, and opportunities for professional development are limited. Furthermore, there is an insufficient number of qualified educational psychologists to

meet the needs of the large student population requiring IEPs, especially in rural areas (Olawale, & Shobowale, 2022).

5. Overcrowded Classrooms: Overcrowded classrooms pose a significant barrier to the effective implementation of IEPs. Teachers and psychologists struggle to provide the individualized attention that IEPs demand. Additionally, most teachers in Nigerian schools are not trained to address diverse learning needs or adapt their teaching methods to accommodate students with disabilities (Stevenson, 2023).

6. Policy and Legislative Gaps: Despite the existence of policies on inclusive education, weak enforcement and the absence of clear guidelines often leave IEP implementation neglected. Government commitment to inclusive education varies significantly across regions, resulting in inconsistent application of IEP-related policies (Shogren, 2023).

7. Time Constraints: Developing and implementing IEPs is a time-intensive process that requires regular monitoring and updates. Educational psychologists often find it challenging to balance these demands with their other responsibilities, especially in schools with limited staff and resources (Oyetunde, Nuhu & Bala, 2022).

8. Lack of Collaboration: Effective IEP implementation is undermined by weak coordination among teachers, parents, and psychologists. Communication gaps often lead to inconsistencies in designing, implementing, and evaluating IEPs. Resistance from teachers and administrators, who may prefer traditional teaching methods, further hampers progress (Brown & Clark, 2023).

9. Inconsistent Assessment Tools: Many schools lack standardized assessment tools necessary for accurately diagnosing students' needs and developing effective IEPs. The absence of proper tools often results in subjective evaluations, reducing the overall effectiveness of the IEP process (Hernandez, 2021).

10. Political and Economic Instability: Government instability and competing budgetary priorities frequently result in the deprioritization of special education programs. Schools in rural and conflict-affected areas face heightened challenges due to poor infrastructure, inadequate funding, and limited access to trained professionals (Ogunleye & Akinyemi, 2021).

Common Learning Disabilities in Nigerian Schools

1-Dyslexia: is a specific learning disability that primarily affects an individual's ability to read, write, and spell. It is a neurological condition that stems from difficulties in phonological

processing, meaning individuals with dyslexia struggle with recognizing and manipulating the sounds that make up language. Dyslexia is not linked to general intelligence, vision, or hearing problems but is a persistent condition that can affect individuals throughout their lives (Adams & Smith, 2022). Dyslexia significantly affects academic performance, especially in school settings where reading and writing are core skills. Children with dyslexia may start to experience academic difficulties early in their schooling, leading to frustration, lower self-esteem, and a reduced desire to engage in reading and writing tasks. Without proper intervention, these difficulties can persist into adolescence and adulthood, impacting job performance, higher education, and everyday activities (Johnson & Peters, 2023).

2-Dyscalculia: a specific learning disability that affects an individual's ability to understand and work with numbers and mathematical concepts. Often referred to as "math dyslexia," dyscalculia impairs a person's capacity to perform basic arithmetic and comprehend mathematical operations. Like dyslexia, dyscalculia is unrelated to intelligence or overall cognitive ability, and it affects individuals across different levels of schooling and into adulthood (Butterworth & Laurillard, 2021). Dyscalculia has a profound effect on academic achievement, especially in subjects that require mathematical reasoning. Early signs of dyscalculia may be noticed in primary school when children fail to grasp counting, sequencing, or basic arithmetic. If left unaddressed, it can lead to anxiety, frustration, and reduced self-confidence, as these individuals frequently struggle to keep up with math curricula. Beyond the classroom, dyscalculia can also affect everyday life. People with dyscalculia may find it difficult to manage finances, calculate tips or discounts, keep track of time, or even navigate distances (Wilson & Dehaene, 2022).

3-Dysgraphia: is a neurological learning disability that primarily affects a person's ability to write. It can manifest in various ways, including poor handwriting, difficulty spelling, trouble organizing thoughts on paper, and issues with the physical act of writing. Dysgraphia is not related to intelligence but stems from difficulties in the motor skills and cognitive processes necessary for writing. It can significantly impact academic performance and day-to-day activities, particularly in school-age children, but it can persist into adulthood (Kandel & Tremblay, 2022). In school, dysgraphia can significantly hinder academic progress, particularly in subjects that rely on written communication. For example, students may struggle with taking notes, completing written assignments, or performing on timed written exams. This can lead to

frustration, lower self-esteem, and avoidance of academic tasks that require writing. Beyond academics, dysgraphia can also affect daily life. Adults with dysgraphia may find it difficult to fill out forms, write emails, or keep written records. The motor challenges and slow writing speed often associated with dysgraphia can affect workplace performance and social interactions (Peeverly & Graham, 2023).

Benefits of Individualized Education Plans for Students with Learning Disabilities

According to Pierce (2022), an Individualized Education Plan (IEP) is a crucial tool designed to support students with special educational needs by tailoring their educational experience to meet their specific requirements. The benefits of an IEP are significant for the students, their families, and the broader educational community:

1. Enables educational advancement: IEP provides greater opportunities for educational advancement. This is because teachers are highly equipped to understand their students' progress, if they are excelling or failing, and the adjustments that need to be made.
2. Has a reliable structure: Parents or guardians can also remain at peace with an IEP, as the program enables everyone involved to know what to expect every day, how they are going to be taught, and what goals they should aim for. With a clear, individualized plan, parents can also be at ease knowing that the educators undertake a proven route to educational success for their students.
3. Delivers quality education: IEP clarifies what everyone should expect. It provides the benefit of quality, knowing that it is required to meet education standards and must be implemented or carried out by trained professionals. For students, they can count on their teachers as they profoundly understand their special needs and are committed to ensuring their educational success.
4. Is holistic and strength-based: IEPs are holistic and strength-based in nature. As part of the eligibility assessment processes, children are assessed based on how they do, as well as their areas of strength. During the actual learning phase, students are also taught through different, holistic approaches - ones that work well with them. The program is also unique, as it does not only focus on a child's academic growth. Social-emotional goals, like building empathy skills, acknowledging or regulating emotions, and building peer relationships are all equally important. These also usually accompany academic goals for guaranteed holistic learning.

5. Ensures individual student care: Another important benefit of IEP is individualized student care. With individualized care, more focused performance assessments, and one-on-one time between students and teachers, the needs of students with learning disabilities can be met and meticulously addressed, one by one. When these students also have concerns, teachers can recognize and recommend effective action plans to resolve them efficiently.

Strategies and Solutions for Supporting Students with Learning Disabilities

Learning disabilities represent a diverse range of challenges that can extensively impact a student's educational journey. Addressing learning disabilities within the students is not just a matter of legal compliance but a commitment to nurturing every student's potential. This article will explore effective strategies to support students with learning disabilities, ensuring they have equal opportunities to succeed.

1. Recognizing Signs and Symptoms: Early detection and intervention are crucial. Educators and parents must be vigilant in recognizing signs such as difficulty with reading comprehension, problems with math operations, poor handwriting, or inattention. These symptoms can vary widely but are often the first indicators of a learning disability (Peeverly & Graham, 2023).

2. Positive Reinforcement: Positive reinforcement involves recognizing and rewarding desired behaviours. This strategy encourages students to stay motivated and engaged. Praising efforts, providing immediate feedback, and celebrating achievements, no matter how small, can boost confidence and foster a positive learning experience (Anderson & Putman, 2022).

3. Collaboration with Specialists: Collaboration with specialists such as special education teachers, speech therapists, and occupational therapists is essential. These professionals can offer additional support and implement specialized strategies that address specific needs. Regular communication between educators, specialists, and parents ensures a cohesive approach to the student's education (Johnson & Peters, 2023).

4. Parental Involvement: Parents play a crucial role in supporting their children with learning disabilities. Staying informed about their child's progress, participating in IEP meetings, and advocating for necessary accommodations are vital. Creating a supportive home environment with designated study times and spaces also contributes to the child's success in schools (Brown & Clark, 2023).

5. Peer Support: Encouraging peer support can foster a sense of inclusion and belonging. Group activities, peer tutoring, and collaborative projects help students with learning disabilities develop social skills and learn from their classmates. Peer support can also reduce feelings of isolation and boost self-esteem among disabilities (Dell'Anna, & Pellegrini, 2023).

6. Continuous Professional Development for Educators: Educators should engage in continuous professional development to stay updated on the latest research and effective strategies for learning disabilities. Workshops, seminars, and courses provide valuable insights and practical tools for creating an inclusive classroom environment (Stevenson, 2023).

7. Individualized Education Plans (IEPs): An Individualized Education Plan (IEP) is a customized educational plan designed to meet the unique needs of a student with a learning disability. It involves setting realistic goals, outlining specific strategies, and providing accommodations. Regular reviews and adjustments ensure that the plan remains effective as the student progresses (Lindsay & Dockrell, 2020).

8. Multi-Sensory Instruction: Multi-sensory instruction involves using multiple senses to help students learn. For example, combining visual, auditory, and kinesthetic learning techniques can enhance understanding and retention. This approach is particularly effective for students with dyslexia and other reading-related disabilities (Stecker, & Fuchs, 2021).

9. Assistive Technology: Technology can be a powerful tool in supporting students with learning disabilities. Tools such as speech-to-text software, audiobooks, and educational apps can provide alternative ways to access and process information. These tools help level the playing field and allow students to demonstrate their knowledge without being hindered by their disabilities (Fish, 2020).

10. Structured Learning Environment: Creating a structured and predictable learning environment can significantly benefit students with learning disabilities. Clear routines, organized materials, and a clutter-free workspace help minimize distractions and reduce anxiety. Consistency and structure provide a sense of security, allowing students to focus better on their tasks (Alnahdi, 2020).

Conclusion

Educational psychologists play an essential role in designing and implementing Individualized Education Plans (IEPs) for students with learning disabilities in Nigerian secondary schools.

Their expertise in assessment, goal-setting, instructional strategy development, and continuous monitoring ensures that students with learning disabilities receive the support they need to succeed academically and socially. However, challenges such as limited awareness, resource constraints, and cultural perceptions must be addressed to realize the potential of IEPs fully. With proper support, training, and collaboration among stakeholders, educational psychologists can help create an inclusive academic environment that caters to the diverse needs of all students, ensuring equitable access to quality education among students with disabilities in secondary schools.

Recommendations

1. Continuous professional development for teachers is crucial. Educational psychologists should facilitate training sessions focusing on the identification of learning disabilities, the adoption of inclusive teaching methods, and the effective implementation of Individualized Education Plans (IEPs) in classrooms.
2. Policies promoting inclusive education must be supported and adequately resourced to meet the needs of students with special needs. Educational psychologists should advocate for these policy changes, ensuring schools are well-equipped to provide inclusive education.
3. Governments should collaborate with parents, teachers, and community members to raise awareness of the importance of IEPs while addressing and combating the stigma surrounding special needs education.
4. Regular capacity-building programs should be encouraged for both educational psychologists and teachers. These programs should focus on enhancing their skills and knowledge in the design and effective implementation of IEPs.

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EFFECTS OF MASTERY LEARNING STRATEGY ON SENIOR SECONDARY SCHOOL CHEMISTRY STUDENTS' MOTIVATION AND ACADEMIC PERFORMANCE IN KARAYE EDUCATION ZONE, KANO STATE, NIGERIA
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ABSTRACT

The study investigated the Effects of Mastery Learning Strategy on Senior Secondary School Chemistry Students Motivation and Academic Performance in Karaye Education Zone, Kano State, Nigeria. Four (4) objectives and four null hypotheses guided the conduct of this study. A pretest was administered before the treatment to establish group similarity in their ability. The design of the study was quasi- experimental, the pretest, posttest design. The population of the study comprised of 3,590 SSII chemistry students out of which, a sample of one Hundred and Sixty one (161) chemistry students from four single sex schools were used for the study, Stratified Random sampling was used for the study, the sample was categorised in to two groups; the experimental group (89) students and control group (72) students.. The sample in the experimental group, were exposed to mastery learning strategy instruction for a period of six weeks. The instruments used for data collection were Chemistry Student Performance Test (CSPT) and Student Motivation Questionnaire (SMQ) with reliability coefficient $r = 0.73$ and 0.76 respectively. t -test and Mann-Whitney statistics were used to test the hypotheses at $p \leq 0.05$ using Statistical Package for Social Sciences (SPSS) and Microsoft excel computer. The results shows that mastery learning is effective in enhancing students' performance and motivation in chemistry. However, in the experimental group the treatment favour male students more compare to their counterpart female students. From these findings, recommendations were made among others that; teachers should be encourage to adopt mastery learning instructional-strategy for teaching chemistry concepts, in order to enhance students' academic performance and motivation.

Key Words: *Mastery Learning Strategy, Motivation and Academic Performance*

Introduction

Chemistry has become one of the most important disciplines in the school curriculum; its importance in the general education has gained world-wide recognition. Chemistry as a branch of science is a rational and mathematical discipline where certain measured and controlled inputs lead to certain predictable outputs (Learning Things 2014). The role of chemistry in our daily and national life as well as in the industry is undaunted. Many of our day-to-day activities revolve around chemistry. The benefit of learning and advancing in science and technology can be extrinsic and intrinsic, and such has been identified with chemistry. Teaching and learning of science have significant roles towards technological development in a developing nation since chemistry is embedded in our life and society, economical, ecological and societal influences (Hofstein & Bybee, 2014).

Efforts made through research to discover the causes of the persistent failure in chemistry revealed among others, that secondary school chemistry teachers mainly adopt the lecture method and lack of motivation in the teaching and learning of chemistry (Udoh, 2013). Lovat (2014), observed that “teaching is not an incidental craft to follow naturally from mastery of subject content, but a highly complex blend of theoretical understanding and practical skill”. Mastering of chemistry concept by students enhance them to a meaningful learning, Meaningful learning occurs when learners comprehend chemistry concepts and are able to connect them with prior knowledge (Ausubel, 2000 & Omolade, 2014).

When students learn chemistry meaningfully, their ability to reflect on their own learning and make adjustments accordingly fosters deeper learning. Deeper learning is the key strategy through which students find meaning and understanding from course material and experiences (Warburton, 2013). This in turn may result to competence of knowledge transfer to other domains and how to apply the knowledge in answering questions and resolving problems (Pellegrine & Hilton 2012). However, record of analysis of students’ results in senior secondary school Chemistry and other science subjects such as Physics and Biology for a number of years has revealed dismal failure, with Chemistry being the least (WAEC Chief Examiner’s Report, 2018). Research has shown that students do not enter the classroom as a “blank state” (Pinker, 2013). Learners construct knowledge by making connections between new information and their existing conceptual network. Efe, (2015) noted that “learning is an active process of knowledge

construction, the making of connections between existing network of knowledge”. According to Bybee (2009), students’ prior conceptions, ideas and experiences which they carry to the classroom influence the way they learn new concepts and skills. Hence, it is important that they are actively engaged in the learning process and that they are challenged to reflect on their own learning besides being able to link their prior knowledge to new knowledge.

In Nigeria studies, like that of (Eze, 2002; Egbo, 2005; Ameh & Dantani, 2012; Opara & Waswa, 2013 & Muhammad 2014), suggest that teachers are in a hurry and tend to rush through the scheme of work to enable them cover the topics in the curriculum within the given period without proper mastery of the topics covered. Feedback on students learning outcome in Senior Secondary School chemistry in Nigeria is not encouraging. Studies have shown that a number of factors are responsible for this. However, most of the emphasis is on the teacher, his teaching methods, motivation and materials. Studies on underachievement of students in secondary school subjects found inefficient teaching methods by school teachers as a major factor for the underachievement of science students, (Pepple, 2010, Usman & Memeh, 2007, Nwagbo, 2001,). Table 1, indicates the students’ performance in senior secondary school examination result from 2010-2015.

Table 1: WAEC May/June Chemistry Results from 2010-2015 in Nigeria

<u>Year</u>	<u>No. Of Candidate That Sat For WAEC</u>	<u>No. of Candidate Sat for Chemistry</u>	<u>% of Pass in Chemistry</u>	<u>% of Failure in Chemistry</u>
2010	1,351,557	31,102	13.93	86.07
2011	1,540,250	128,034	6.43	93.57
2012	1,529,425	659,132	31.18	68.82
2013	1,308,217	86,612	29.17	70.83
2014	1,692,435	791,227	31.28	68.72
2015,	1,605,248	758,849	38.68	61.32

Source: From WAEC Result, January, (2018)

According to Herrera(2014), to improve the performance of learners in chemistry, the role of the teacher becomes crucial in the teaching and learning process. The teachers should not only teach content knowledge of chemistry but should be able to initiate strategies that are required by the

content to make learning meaningful, integrated and transferable. With this deplorable state of chemistry, mastery learning strategy is the solution, and that is what interested the researcher to investigate the effect of mastery learning strategy.

The West African Examination Council Chief Examiner's Report (2014) indicated poor method of teaching, motivation and lack of mathematical skills are some of the major reasons for the poor performance of students in chemistry. This agrees with Krammer (2012), who found that students without motivation, poor mathematics knowledge and use of inappropriate method of teaching could not master some chemistry concepts.

However, the method a teacher adopts in teaching, lack of motivation and poor mathematical skills of the students are some of the major reasons for the poor performance of students in chemistry, Bloom (1968) developed an instructional-strategy that could help students to overcome learning difficulties. Bloom's theory of school learning asserts that virtually all students can learn what they are taught (that is 'A' standard), if given the appropriate and prior conditions. Bloom, argued that if students were normally distributed with respect to aptitude and are given uniform opportunity to learn and quality of instruction, only few students would achieve mastery in their learning since the aptitude of each student will determine the degree of learning. Based on this, Bloom (1968) developed a mastery learning model called Learning For Mastery (LFM).

Bloom's learning for mastery was derived from Carroll's, group-based mastery learning model which was only conceptual and theoretical. Bloom expanded and transformed Carroll's model into an instructional and practical system for classroom learning in 1968. Mastery learning is a theory that suggests that virtually all students can attain a high degree of learning if given the needed time and appropriate learning conditions and that if teachers could provide these appropriate conditions, virtually all students could reach a high level of achievement and the differences in their levels of achievement would vanish (Georgina & Lessi 2015). Bloom, 1974 in (Georgina, et al. 2015), stated that the precondition to the development of mastery learning is to define what mastery is, specify the objectives and content of instruction and to set the criteria accepted as mastery so that the teacher will be able to know if a student has attained mastery of concept taught or not. Therefore, there is a need for a change in the teaching and learning of chemistry concepts among students in schools.

Mastery learning strategy is an instructional method of teaching, using the sequencing of materials to be learnt into units and sub-units with well defined behavioural objectives which would be achieved at the end of every unit with test to measure the performance of the students. Sliva (2003) defined mastery learning as teaching a skill to the level of automaticity, ability to deduce the general from particular case to form a concept.

Motivation is a theoretical construct used to explain behavior. It presents the reasons for people's actions, desires and needs. Motivation can also be defined as one's direction to behavior and vice versa, (Deci & Ryan 2016). However, mastery instructional-strategy enhances students' motivation for science learning, both in terms of intrinsic motivation (relevance, meaningfulness, as assessed by the students) and extrinsic motivation (teacher encouragement and reinforcement) and attempts to make school science content more meaningful (Devetak, Vogric & Glazer, Bolte, Streller, 2011, Bolte & Holbrook, 2011). The mastery learning instructional-strategy focus on students motivation to learn science as there is a strong research evidence that influences cognitive and meta-cognitive processes amongst students and thus stimulates higher forms of thinking and determines the individual's attitude and approach to learning and to activities that lead to (creative) learning achievements (Deci & Ryan, 2016; Rheinberg, Vollmeyer & Rollett 2000, Jurisevic, Devetek & Vogric 2012; Schunk & Zimmerman 2008).

Moreover, from this point of view the mastery learning instructional strategy enhances both extrinsic motivational orientation (example; extrinsic rewards most by means of teacher's motivational feedback) as well as intrinsic motivational orientation (example; interest in science, meaningfulness of learning, academic self-concept) are important, but the later is highlighted (Devetak et al 2011; Bolt. & Holbrook, 2011). Motivation to learn develops in the process of differentiation during the student's learning development, from the very beginning of the educational process and it's a part of the wider student's life and is contextually dependent (Schunk & Zimmerman 2008; Jurisevic et al 2012). It is good to determine methods for their capacity to enhance inspiration self-efficacy and motivation for active participation in learning. Motivation enhances concrete learning as well as mastery of learning context which help students to gradually develop their own social-participatory learning role depending on their own perception of individual features of the existing learning context.

Gender, according to Olaruwaju (2019), is the social or cultural characteristics, roles or behaviour which males and females are known for by society. Onyegegebu (2008) referred to gender as the sum total of cultural values, attitudes, roles practices and characteristics based on sex. Onyegegebu further described sex as the innate biological differences between women and men. So both women and men differ by their physiology. Okeke (2010) described the men as bold, tactful, intelligent, aggressive etc and the women as dull, passive, submissive, talkative etc. These attributes affect their achievement in chemistry, because factors such as sex-role stereotyping, female socialization process, masculine images in chemistry textbooks exhaust could contribute to the observed differences in achievement of boys and girls. The difference could also be attributed to what Nnaka (2013) reported that girls do not get encouragement in science classes from the teachers, rather they make negative comments to girls about kind of work/course girls should undertake. Similarly, Salami (2013) stated that what differentiates men and women are their ethical and behavioural approaches to their academic pursuits, social environment and traditional gender ideology. Alao and Abubakar (2010) opined that gender roles affect familiarity with academic content, career aspirations, attitude towards subjects, teacher's expectation and preferred approaches and these in turn affect academic performance. Considering all the above mentioned factors, it will be necessary to look at different teaching methodology to be able to identify which of the teaching approaches will enhance gender equality in achievement and create high motivation in both sexes.

Finally, motivation and gender are also strongly associated regarding students' academic performance. Carpusa and Lepperb (2017) did two studies on how gender and age moderates students' motivation levels regarding the stimulies or praise. They found that process praised enhanced motivation for girls but there were few effects of praise on boy's motivation improvement. So there is a need to include gender into part of my study and try to explore whether there are many significant differences regarding male and female students about their mastery of concept, self-efficacy, motivation performance, confidence and content of learning in their chemistry achievement

Statement of the Problem

Chemistry as an academic discipline in Nigeria Secondary School is plagued with the problem of poor performance as a result of ineffective approaches use by chemistry teachers and lack of

motivating students to learn chemistry by chemistry teachers. The failure in the chemistry is mostly in quantitative and qualitative aspect which poses problems. Nigerian secondary school student performance in chemistry has been poor and been unimpressive over the years (WAEC Chief Examiners Report 2014).

According to Olorukooba (2007) and Jegede (2007), students consider chemistry to be a difficult field of study. Students' inability to comprehend and remember what has been learned is mostly caused by the teacher-centered approach that makes learners passive listeners. The persistent use of traditional teaching method where chemistry teachers transmit knowledge to the students who most of the times are inactive in the classroom has not been promoting effective learning. Lack of motivation has been identified as one of the causes of poor performance in science. Glynn, Taasobshirazi, and Brickman (2009) and Glynn, Taasobshirazi, and Brickman (2007) concluded that motivation to learn science positively related to secondary schools science performance

This poses a problem for senior secondary schools science teaching, because, if meaningful learning does not occur, students may not truly understand the material and ultimately make necessary connections for learning chemistry (Cavallo, Potter & Rozman, 2004). The absence of meaningful learning may be due to the manner in which material is presented or to the lack of awareness of actual skills needed to reach meaningful learning levels (Gambari, 2013). Traditional instructional methods have given insufficient opportunities for students to construct their own learning. Eliciting students' individual capabilities, intelligence and creative thinking can only be achieved through student centered instructional methods (Adepoju, 2014).

Mastery learning instructional-strategy challenges the assumption that individual differences in school achievement are inevitable. Mastery learning is design to ensure that nearly all students reach the same level of performance by repetitive applications of simple formula: plan-teach-test-re teach and retest. Thus, mastery learning is a group-based instructions followed by remedial techniques. The literature indicates positive effects of mastery learning on students, especially in the areas of motivation, performance, interests towards learning and retention of chemistry contents. Wachanga et al (2010) and Guskey,(2010) have brought out effectiveness of mastery learning strategy at all levels of education and in such different subjects as Arithmetics, philosophy, Physics, Geography and Mathematics.

However, what to find out in this study is how is mastery learning affects motivation, to learn chemistry by gender. Therefore, there is need to explored effects of mastery learning instructional-strategy on motivation and academic performance by gender among secondary school students in some selected schools in Karaye Education Zone Kano State.

Objectives of the Study

This study was guided by the following objectives:

1. Find out the effect of mastery learning instructional-strategy on the academic performance of senior secondary school chemistry students in Karaye Education Zone Kano State.
2. find out the effect of mastery learning instructional-strategy on male and female students academic performance of senior secondary school chemistry students in Karaye Education Zone Kano State.
3. determined the effect of mastery learning strategy on mean motivation scores of students taught chemistry in Karaye Education Zone Kano State.
4. determined whether male and female students motivation is affected when they are taught chemistry through mastery learning instructional-strategy in Karaye Education Zone Kano State.

Null Hypotheses

The hypotheses formulated were tested at 0.05 alpha level of significance:

H0₁: There is no significant difference between the performance mean scores of students taught chemistry using mastery learning instructional-strategy and those taught the same concepts using lecture method in Karaye Education Zone Kano State.

H0₂: There is no significant difference between the performance mean scores of male and female students taught chemistry using mastery learning instructional-strategy in Karaye Education Zone Kano State.

H0₃: There is no significant difference between the mean motivation scores of students' taught chemistry concepts using mastery learning instructional-strategy and those taught using lecture method in Karaye Education Zone Kano State.

H04: There is no significant difference between the mean motivation scores of males and females student who were exposed to mastery learning instructional-strategy in Karaye Education Zone Kano State.

Methodology

This study adopted pretest, posttest quasi experimental control group design. The target population for this study covered all public senior secondary schools (SS II) students with population of 3,590 Senior Secondary II Chemistry students in the study area. From this figure 2,741 were males while 849 were females with average chronological age of 16 years. The sample was consisted of four schools with a total number of one hundred and sixty one students (161). The instruments used for this study were Chemistry Students' Performance Test (CSPT), and Students Motivation Questionnaire (SMQ). The CSPT was set of 40 multiple choice questions adapted from WAEC and NECO by the researcher based on the topics taught. To analyze the data collected t-test and Mann-Whitney statistics were used to test the hypotheses at $p \leq 0.05$ using Statistical Package for Social Sciences (SPSS) and Microsoft excel computer

Null Hypothesis One: There is no significant difference between the performance mean scores of students taught chemistry using mastery learning instructional-strategy and those taught the same concepts using lecture method in Karaye Education Zone Kano State.

This null hypothesis was tested using independent samples t-test. The result of the analysis is presented in Table 1.

Table 1 Summary of Independent t-test Analysis of Mean performance Scores of Chemistry in Experimental and Control Groups

Group	N	Mean	SD	Std. Error Mean	T	Df	p-value	R
Experimental	89	33.90	3.681	.390				
Control	72	25.13	2.355	.278	17.526	159	0.00	Sig
Total	161							

$P \leq 0.05$

Table 1 shows the performance mean scores in Chemistry for experimental and control groups. The mean performance scores for the experimental group ($M=33.90$, $SD=3.681$) was higher than that of control group ($M=25.13$, $SD=2.355$). The mean difference between the two groups was 8.774 in favor of the experimental group. Since the obtained p-value of 0.00 is less than 0.05

level of significance, the null hypothesis that stated no significant difference is rejected. This indicated that there was a significant difference between the performance mean scores of students taught chemistry using mastery learning and those taught using lecture method in favour of experimental group.

Null Hypothesis Two: There is no significant difference between the performance mean scores of male and female students taught chemistry using mastery learning instructional-strategy in Karaye Education Zone Kano State.

This null hypothesis was tested using independent samples t-test. The result of the analysis is presented in Table 2.

Table 2 Summary of Independent t-test Analysis of Mean Performance Scores of Chemistry Students for Males and Females in Experimental Group

Sex	N	Mean	SD	Std. Error	Mean	t	Df	p-value	R
				Mean	Difference				
Male	45	37.07	1.970	.294					
Female	44	30.66	1.584	.239	6.408	16.886	87	.000	Sig
Total	89								

$P \leq 0.05$

Table 2, shows the performance mean scores in Chemistry for male and female students in the experimental group. The mean performance scores for the male ($M=37.07$, $SD=1.970$) was higher than that of female ($M=30.66$, $SD=1.584$). The mean difference between male and female was 6.408 in favor of the male students. Since the obtained p-value is less than 0.05 level of significance, the null hypothesis that stated no significant difference was rejected. This indicated that there was a significant difference between the performance mean scores of male and female students taught chemistry using mastery learning method in favour of male students.

Null Hypothesis Three: There is no significant difference between the motivation mean scores of students taught chemistry concepts using mastery learning instructional-strategy and those taught using lecture method.

This null hypothesis was tested using non-parametric statistic of Mann-Whiney U test. The result of the analysis is presented in Table 3.

Table 3 Summary of Mann-Whiney U test of Rank Mean Score of Motivation in Experimental and Control Groups

Group	N	Mean Rank	Sum of Ranks	Mann-Whitney	Z	p-value
Experimental	89	116.04	10327.50	85.500	-10.619	0.00
Control	72	37.69	2713.50			
Total	161					

$P \leq 0.05$

Table 3, shows the mean ranks on motivation score for experimental and control groups. The mean rank on motivation for experimental group was ($M=116.04$) and that of control group was ($M=37.69$). The mean rank difference was 78.65 in favor of the experimental group. As the obtained p-value is less than 0.05 level of significance, the null hypothesis that of no significant difference was rejected. This showed that there was a significant difference between the mean ranks scores on motivation of students taught chemistry using mastery learning and those taught using the lecture method.

Null Hypothesis Four: There is no significant difference between the motivation mean scores of male and female students who are exposed to mastery learning instructional-strategy.

This null hypothesis was tested using non-parametric statistic of Mann-Whiney U test. The result of the analysis is presented in Table 4.

Table 4 Summary of Mann-Whiney U test on Motivation Scores in Chemistry for Males and Females in Experimental Group

Sex	N	Mean Rank	Sum of Ranks	Mann-Whitney	Z	p-value
Male	45	51.87	2334.00	681.000	-2.552	0.011
Female	44	37.98	1671.00			
Total	89					

$P \leq 0.05$

Table 4, shows the mean ranks on motivation score for male and female students in the experimental group was 51.87 and 37.98 respectively. The mean rank difference was 13.87 in favour of the male students. As the p-value obtained is less than 0.05 level of significance, the null hypothesis that expected a no significant difference in the mean rank score was rejected.

This showed that there was a significant difference between the mean rank scores on motivation of male students taught chemistry using mastery learning and female students taught using the same concept.

Discussion of the Findings

The result in table 3 revealed that the use of mastery learning significantly enhanced the academic performance of students who were exposed to it. Their performance was significantly higher than that of the students exposed to lecture method. The result obtained in this study could be due to the unique characteristics of mastery learning strategy of giving the learners the opportunity to interact with one another and share ideas freely and correct one another which promote meaningful learning, motivation and achievement. The findings of this study agrees with that of Wachanga et al (2010), who also discovered that students in mastery learning class performed significantly better than those taught using lecture method.

This is in line with position of Bot (2004) who found mastery learning instructions is the best in teaching and learning mathematics, in normal classroom. He formed groups of students which are taught by the mastery learning instructions and conventional approach and found that the group taught by mastery learning instructions performed significantly better than their counterpart. In the first instruction given to the students, it was observed that students spent more time to achieve mastery, but on subsequent instructions, they spent lesser time. This could be attributed to the fact that the first lesson was prerequisite to the next lesson.

The result of this finding also is consistent with Olopade (2012), Patricia and Johnson (2013), Kazu, Kazu and Ozedemi (2015) and Pepple (2014) in their separate researches on the effects of mastery learning strategy, revealed that mastery learning enhances students academic achievement more than the lecture method. This is because mastery learning, accounted for the high student academic performance of the students in experimental group.

The results from table 4 revealed that there was a significantly difference in students academic achievement. From the result obtained it was observed that male students had higher mean performance scores than their female counter parts when both were exposed to mastery learning strategy. This is because male students are known for their unique characteristics of possessing higher order thinking skills, love discussion and love learning more difficult task as identified by Olorundare (2015). This indicates that males performed better than females, this is in line with

Oconnor (2014) and Bot (2016), they both found in their studies that, mastery learning strategy favour males students' better than their females students' counterparts in mathematics. Joyce (2006), also pointed out that local customs and values powerfully discourage women from going into science and those that do it, do not strive for achievement.

Similarly, Amusat and Awoyemi (2014) on the influence of gender on students' level of achievement in chemistry concluded that gender difference has influence on students' level of achievement at secondary school level. According to them, there are many factors causing gender differences in performance in science in Nigerian schools. Many of these factors are man-made and can be avoided if the country is ready to pay the price. Different communities have different view of formal education, some belief female education is not important. Some communities belief women should be restricted to their traditional role of full time housewife, as mother and house keeper, permissible vocations for women include teaching or nursing. Such communities do not encourage women into science and technical courses such as engineering.

This study also agrees ,with Nwagbo and Obiekwe (2010) and Nwagbo and Okoro (2012), that male students performed significantly higher than their female counterpart using different strategies. However, this result was also inconsistent with Wachanga et al (2010), Olorundare (2015) and Pepple (2014) that reported that no significant different exists in the performance means scores of students due to gender. The inconsistencies in this findings of studies reviewed are indication that gender factor in achievement remain an issue requiring diversified attention.

From the results in Table 5, there was a significant different between the mean motivation scores of experimental and control groups, which is in conformity with Wachanga et al (2010), John (2014) and Olorundare (2015) which shows that mastery learning instructional strategy improve the students performance and motivation. The reason for this was that pre-requisite steps of activities in teaching mole concepts and its application were followed. This has stimulated student's motivation, attention that led to good performance in the concept. Furthermore this finding was also consistent with findings of other researchers, studies by Signh, Granville and Dike (2013), Nelson, (2014) and Geary and Hamson (2017) who indicated that, motivation has a very strong influence on student's achievement in science. The motivational effect found which is a relatively large, show that the treatment raised the experimental students scores above the control group.

The result in table 6, revealed significant difference in the effect of mastery learning strategy on motivation of male and female students exposed to it in the study. This null hypothesis of no significant different was therefore rejected. The finding here implies that males student enjoy more learning difficult task in the study more than the female counterparts when they are exposed to mastery learning strategy. The result obtained of here may be due to the encouragement and support from single sex educational settings in the study area. This encouragement and single sex educational settings maybe as one of the sources of motivation responsible for the gender differences between the male and female students. This finding is in line with research carried out by Simpkins – Kean and Eccles (2006) that males hold higher motivation of science ability and science value than females. The high motivation scores found between the male and female students may have resulted from conducive learning environment and opportunity for motivation created by single sex educational programme. This finding also agreed, with findings of Hutchison and Smithoman (2012), They both found males and females benefits from motivation in single sex educational programme.

Conclusion

This study has established that mastery learning strategy is an effective instructional strategy that can be used to improve students' performance and motivation in chemistry at secondary school level. Mastery learning strategy bridged the performance and motivation gap of students in learning chemistry. Although, the result showed significant difference between male and female when the strategy was used.

Recommendations

Based on the findings from this study the following recommendations were made;

1. Chemistry teachers should take advantage of the mastery learning instructional strategy in teaching mole concept and other related concepts in chemistry
2. The Federal and State Ministries of Education and other educational bodies like Nigerian Educational Research and Development Council (NERDC) and Science Teachers Association of Nigeria (STAN) should organize training/workshop for teachers so as to update their knowledge on the use of mastery learning instructional strategy to improve teaching and learning in Nigerian schools.

3. Curriculum developers in their effort to improve the effectiveness of chemistry teachers should encourage the use of mastery learning instructional strategy.
4. Teacher training programmes should also make the use of mastery learning strategy as part of their teacher education curriculum.
5. Teachers should motivate and encourage students to work hard in order to achieve their goals by using motivational strategies such as the mastery learning instructional strategy.

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**INFLUENCE OF ADMINISTRATORS' MANAGERIAL COMPETENCE ON
ACADEMIC STAFF JOB PERFORMANCE IN FEDERAL UNIVERSITIES NORTH-
EAST ZONE, NIGERIA**

BY

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ABSTRACT

This study examined the influence of administrators' managerial competence on academic staff job performance in Federal Universities in North-East Zone, Nigeria. The study was guided by six Research objectives, questions and hypotheses. A descriptive survey research design was employed, with a population of 5,504 academic staff, from which a proportionate sample of 382 drawn. Data were collected using a self-developed instrument titled "Administrators' Managerial Competence on Academic Staff Job Performance Questionnaire" (AMCAJPQ), which consisted of 30 items grouped into six clusters and utilized a four-point modified Likert scale. The instrument was reviewed and validated by professionals, while a pilot test was conducted at the University of Maiduguri which yielded a reliability coefficient of 0.754 obtained. The data were analyzed using frequency counts and simple percentages for the research questions, and hypotheses were tested using the Multiple Regression Analysis at a 0.05 level of significance. The findings revealed that administrators' managerial competence, including staff control, orientation, communication, training, motivation, and conflict management strategies, significantly influenced academic staff job performance in the Federal Universities in North-East Zone, Nigeria. The study highlights the importance of administrators' managerial competence in enhancing academic staff job performance. The study recommended that, Universities should implement fair and supportive control mechanisms and regular review to enhance academic staff job performance.

Keywords: *Administrators', Managerial Competence, Academic Staff, Job Performance.*

Introduction

Managerial Competence in the current era of globalization in our higher institutions of learning especially in the universities require experienced, qualified and prudent Administrator's

managerial competence especially in the area of Staff Control, Staff orientation and Communication Skills which is the best practice world over like in the USA, Asia, Africa, especially Nigeria and Northern Nigerian Universities in particular North-East zone universities required for the socio-political development of any nation. For informed Administrators to achieve the vision and mission of their respective universities, the knowledge of administrative competence is paramount. Universities are unrelenting in their continuous effort to improve on employees' skills and managerial competence. Managerial competence is a vital tool for ensuring university productivity and high performance. Employees of universities and institutions of higher learning are established primarily to impart knowledge. This act of imparting knowledge can be done through teaching, research and community services. Universities are also expected to serve as centers of technological and scientific advancements, skills development, production of quality entrepreneur graduates, strategic researches and development as well as production of intellectual minds. The responsibilities of universities in Nigeria today are quite enormous. According to Nazari (2017), many researchers believed that leadership's new approaches can have a big impact on followers' attitudes and can increase the satisfaction and commitment of the employees. To accomplish their vision and mission, Universities administrators are required to have management skills or competence as essential to them. They are obligatory as a part or element for efficiency and effectiveness in management.

Statement of Problem

Administrators of the universities in Nigeria appear to be grappling with management of staff and material resources. The problem being faced in universities by management include the desire for a peaceful academic session where there will be a harmonious relationship between staff and students as well as peaceful coexistence between the academic and non-academic staff, and to a large extent between staff and management of the universities. Administrators Managerial competence especially in the areas of staff control, orientation and communication skills needs of academic staff of universities are very essential to the actualization of the universities educational objectives; and lack of the aforementioned knowledge, universities objectives may result in the failure in the actualization of their missions of producing intellectuals for the socio – economic development of the nation.

Objectives of the Study

The objectives of the study are to determine the administrators' influence of

1. Staff Control competence on academic staff job performance, among Federal Universities in North- East Zone, Nigeria;
2. Staff orientation competence on academic staff job performance among Federal Universities in North East Nigeria; and
3. Communication skill competence on academic staff job performance among Federal Universities in North - East Zone, Nigeria.

Research Questions

The following research questions were answered:

1. To what extent do administrators' managerial Control competence influence academic staff job performance among Federal Universities in North- East Zone, Nigeria?;
2. To what extent do administrators' managerial staff orientation competencies influence academic Staff job performance among Federal Universities of North-East Zone, Nigeria?;
3. To what extent do administrators' managerial staffs Communication skills influence academic staff job performance among federal Universities, North- East Zone, Nigeria?

Research Hypotheses

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

- H₀₁** Staff control does not significantly influence academic staff job performance in Federal Universities in the North-East Zone, Nigeria;
- H₀₂** Staff orientation does not significantly influence academic staff job performance in Federal Universities in the North-East Zone, Nigeria; and
- H₀₃** Communication skill does not significantly influence academic staff job performance in Federal Universities in the North- East Zone, Nigeria.

Conceptual Framework

Important concepts used in the recent studies such as administrators, management, managerial competence, staff control competence, staff orientation competence communication skills competence and academic staff job performance. Administrators are top management staff

university employees who are responsible for the maintenance and supervision of the institution and separate from academic staff, although some personnel may have joint responsibilities.

Management is a social process that involves planning, organizing, leading, directing, controlling and coordinating the efforts of people towards the achievement of the organizational goals and objectives. Agbanifo, Agbadudu and Iyayi (2005) see management as a set of activities which includes planning, organizing, leading, controlling and directing an organizational human, financial, and physical resources with the aim of achieving the goals in an efficient and effective manner.

Competencies are experiences, knowledge, skills, values and attitudes acquired by, administrators to enable them perform job effectively. Olaitan (2003) explained that to be competent, the administrators must have acquired the knowledge, skills, attitudes and judgment that is required in order to perform successfully, at a specified proficiency level in any given work. In the same manner Hornby (2003) defined competencies as the skills an individual need in a particular job or tasks.

Managerial competencies are the skills, motives and attitudes necessary for performing a job. It includes communication skills, supervision, conflict management, motivation, discipline and many more, problem solving ability, customer focus and the ability to work with a team. Skills and knowledge are manager's competencies that can be measured easily while intangible assets like effective communication and teamwork are harder to pin down and evaluated.

Slocum and Hellriegel (2010) identified self-motivated workers as high achievers. They like to set their own goals and always try to accomplish great something. Self-motivated workers seek the challenge of making tough decisions and exercise self-control over their behavior especially in the selected goal. These brands of workers try to take advice or help from experts who can provide needed knowledge or skills. High achievers prefer to be responsible for attaining their goals and take the credit if they win as well as the blame if they lose.

The communication link between human resource managers and the academic staff appears to be poor, which may result in poor disseminating of information in the work place. The communication gap may also be a factor that can determine the academic staff job performance. Communication has been stated as an important tool in academic staff job performance.

Dunu (2023) also investigated the managerial competencies of principals as predictors of teachers' job performance in public secondary school in Anambra state. The researcher adopted correlational design for the study while the population comprise of 263 Principals of public secondary schools in Anambra state, the principal were all used for the study due to relatively manageable size of the population.

Akinfolarin and Ehinola (2014), Conducted a research on Motivation and Effective Performance of Academic Staff in Higher Education (Case study of Adekunle Ajasin University, Ondo State, Nigeria). The purpose of this study therefore, was to investigate the motivation and effective performance of academic staff in higher education. Yusuf and Yahaya (2019) conducted a study to investigate the administrators' effectiveness on conflict management strategies in tertiary institutions within Sokoto metropolis, Sokoto state. The study adopted correlational survey design while the populations of the study comprise all the eight tertiary institutions within the area of study. A sample of 168 was selected across 4 tertiary institutions using simple random sampling technique and researcher developed questionnaires titled "Conflict Management Strategies Questionnaire" (CMSQ) and "Administrators' Effective Scale" (AES) were used as instruments of data collection with a reliability indices' of 0.82 and 0.85 respectively.

Theoretical Framework

Chester Bernard theory of efficiency and effectiveness (1938)

The theoretical framework of this study was anchored on the Theory of Efficiency and Effectiveness of Chester Bernard (1938). The theory was propounded by Chester Bernard in the year (1938) and according to the theory; the function of the chief executive of an organization is to ensure efficiency and effectiveness in the organization, efficiency being employee centered, the theory also emphasizing the importance of communication, organizational culture and leadership in influencing performance.

Boyatzis R E Theory of performance on competency (1982)

The theory of Performance on competency was propounded by Boyatzis in 1982. The assumption of the theory states that maximum performance occur when the person's capability or talent is consistent with the situation, (person's talent is described by his or her values, vision, personal philosophy, knowledge, competencies, career stage and interests), Job demands can be described by the roles or responsibilities and tasks needed to be performed, organizational

environment that are predicted to have important impact on the demonstration of competencies or the design of the jobs and roles include: culture and climate, structure and systems, maturity of the industry, strategic position within it and aspects of the economic, political, social, environmental, and religious milieu surrounding the organization.

Methodology

The research design used for this study was Descriptive Survey as suggested by Emaikwu (2011) stated that Descriptive Survey research design is a design in which the researcher can sample the opinion of the population and latter generalized. The research design is aimed at discovering possible influence of administrators' managerial competencies on academic staff job performance in federal universities in North-Eastern Nigeria. The descriptive survey design is considered relevant to current study because it allows the researcher to sample the opinion of respondents and generalize the findings regarding the possible influence of administrators' managerial competencies on academic staff job performance in federal universities North-East. The population of the study comprised all the academic staff in the nine (9) Federal Universities in the North-East Zone, Nigeria, except National Open University of Nigeria (NOUN) which is not a traditional brick and –mortar institution. Eight hundred and thirteen (813) academic staff of Modibbo Adama University, Yola, Adamawa State (MAU), four hundred and thirty nine (439) academic staff of Federal University Gashua, Yobe State (FUGA), five hundred and fifty (550) academic staff of Federal University, Wukari, Taraba State (FUW), eight hundred and twenty four (824) academic staff of Federal University Kashere, Gombe State (FUK), eight hundred and eighty two (882) academic staff of Abubakar Tafawa Balewa University, Bauchi State (ATBU), one thousand six hundred and eighty three (1683) academic staff of University of Maiduguri (UNIMAID), one hundred and two (102) academic staff of Federal University of Health Science, Azare, one hundred and twenty five (125) academic staff of Nigerian Army University, Biu, and eighty six (86) academic staff of Federal University of Agriculture, Mubi. Therefore, according to data collected from the office of the registrars in the federal universities, the total population for this study was five thousand five hundred and four (5504) academic staff in nine federal universities North East Zone, Nigeria.

The sample of the study was ten percent of the population of each federal university given a total of three hundred and eighty-two academic staff across the nine federal universities in the North

East-Zone, Nigeria. The sampling technique used for the study is proportionate sampling technique in drawing ten percent (10%) of the population which is three hundred and eighty two (382) academic staff across the nine federal universities in the North-East Zone, Nigeria. According to Asim, Idaka and Eni (2017) who maintains that the proportionate sampling, using any percentage either 10%, or 20%, or 30% and so on, will help the researcher ensuring representativeness. The researcher selected ten percent of each university under study purposively.

A comprehensive list of the academic staff in the federal universities in the North East Zone, Nigeria was collected from the offices of the Registrars and then the researcher used the total number of three hundred and eighty-two (382) participants as a sample size for the study. The researcher constructed a self-developed instrument titled “Administrators’ Managerial Competencies on Academic Staff Job Performance Questionnaire” (AMCAJPQ) to collate data from the respondents in Federal Universities in the North-East Zone, Nigeria

Results

The findings of the study are as follows:

Research Question One: To what extent do administrators’ managerial Control competences influence academic staff job performance among Federal Universities in North-East Zone, Nigeria?

Table 1: Extent of administrators’ managerial competences on control of academic staff job performance in Federal University in North-East Zone, Nigeria

S/N	STATEMENT	RESPONSES				Mean	Decision
		VHE	HE	SE	AE		
1	Our administrators in the university always ensure that academic staff attend their lectures properly	284 (29.25%)	278 (28.63%)	129 (13.29%)	280 (28.84%)	3.55	VHE
2	In our university the administrators often provide adequate office accommodations for academic staff	198 (20.39%)	292 (30.07%)	318 (32.75%)	163 (16.79%)	3.32	HE
3	In our university the administrators often provide adequate security for academic staff	206 (21.22%)	427 (43.98%)	152 (15.65%)	186 (19.16%)	3.08	HE

4	In our university, there is always power supply for 24 hours to enable academic staff carryout their work effectively	100 (10.30%)	219 (22.55%)	342 (35.22%)	310 (31.93%)	2.80	HE
5	Administrators in my university allocate courses to academic staff based on their area of specialization	297 (30.59%)	355 (36.56%)	178 (18.33%)	141 (14.52%)	2.70	HE
Grand Mean						3.09	HE

Tables 1: highlight the extent of administrators' managerial competencies in controlling academic staff job performance in Federal Universities, North-East Nigeria. For ensuring academic staff attend lectures properly, 284 (29.25%) respondents agreed to very high extent, 278 (28.63%) agreed to high extent, 129 (13.29%) some extent, and 280 (28.84%) to low extent with a mean score of 2.58 indicating general agreement. Similarly, in providing adequate office accommodations, 198 respondents (20.39%) agreed to very high extent, 292 (30.07%) to high extent, 318 (32.75%) some extent, and 163 (16.79%) to low extent. The mean value of 2.54 suggested that, majority of the respondents agreed with the statement. Administrators were rated positively for providing adequate security, as 206 (21.22%) respondents responded to very high extent, 427 (43.98%) high extent, 152 (15.65%) some extent while 186 (19.16%) to very low extent. The mean value of 2.67 suggested that, majority of the respondents supported the statement.

Research Question Two: To what extent do administrators' managerial staff orientation competences influence academic Staff job performance among Federal Universities of North-East Zone, Nigeria?

Table 2: The administrators' managerial competences on orientation of academic staff job performance of federal universities in the North-Eastern Zone, Nigeria

S/N	STATEMENT	RESPONSES				Mean	Decision
		VHE	HE	SE	AE		
6	In our university, newly appointed academic staff were exposed to nature of the university environment	256 (26.36%)	341 (35.12%)	187 (19.26%)	187 (19.26%)	2.43	SE
7	Also, both the old academic staff are often given orientation to expose them to new ideas	209 (21.52%)	258 (26.57%)	225 (23.17%)	279 (28.73%)	2.13	SE
8	Newly appointed academic staff	270	353	170	178	3.24	HE

	are introduced to university host community	(27.81%)	(36.35%)	(17.51%)	(18.33%)		
9	Both old and new academic in my university were introduced to the norms and culture of the host university community	267	187	285	232	2.26	SE
		(27.50%)	(19.26%)	(29.35%)	(23.89%)		
10	In my university, academic staff are oriented on how to observed the rules and regulations of the university system	149	162	349	311	2.10	SE
		(15.35%)	(16.68%)	(35.94%)	(32.03%)		
Grand Mean						2.43	SE

The analysis explores the extent to which administrators' managerial orientation competences influence academic staff job performance in Federal Universities of North-East Nigeria. A total of 256 respondents (26.36%) rated the exposure of newly appointed academic staff to the nature of the university environment at a very high extent, while 341 (35.12%) rated it at a high extent. Additionally, 187 respondents (19.26%) each rated it at some extent and a low extent, respectively. The mean score of 2.69 indicates that administrators are largely effective in familiarizing new academic staff with the university environment.

A total of 209 respondents (21.52%) rated orientation of both old and new staff as very high extent, 258 (26.57%), high extent, and 225 (23.17%) at some extent. However, 279 respondents (28.73%) rated it at a low extent. The mean score of 2.41 suggests that efforts in this area are insufficient and need improvement to better support academic staff with emerging ideas and innovations. Introducing newly appointed academic staff to the university host community was rated highly by 270 respondents (27.81%) at a very high extent and 353 (36.35%) at a high extent. Meanwhile, 170 respondents (17.51%) rated it at some extent and 178 (18.33%) at a low extent. The mean score of 2.74 reflects strong agreement that administrators are effective in integrating new staff with the host community.

With regard to familiarizing both old and new staff with the norms and culture of the host university community showed varied responses, a total of 267 respondents (27.50%) rated this at a very high extent, 187 (19.26%) at a high extent, 285 (29.35%) at some extent, and 232 (23.89%) at a low extent. The mean score of 2.50 indicated that, majority of the respondents are in favour of the statement. Orientation on how to observe university rules and regulations was rated at a very high extent by 149 respondents (15.35%), a high extent by 162 (16.68%), and at

some extent by 349 (35.94%). Additionally, 311 respondents (32.03%) rated it at a low extent. The mean score of 2.15 highlights a significant shortfall in this area, suggesting that orientation on rules and regulations is not adequately emphasized by administrators. The mean value of 2.53 indicated that, majority of the respondents agreed that, administrators' managerial competence on orientation has influence on academic staff job performance in Federal Universities in North-East Zone, Nigeria.

Research Question Three: To what extent do administrators' managerial communication competences influence academic staff Job performance among Federal University of North-East Zone, Nigeria.

Table 3: The extent of administrators' managerial competences on communication skill of academic staff job performance of federal universities in the North-Eastern Zone, Nigeria

S/N	STATEMENT	RESPONSES				Mean	Decision
		VHE	HE	SE	AE		
11	In our university, vice chancellor gives information directly to academic staff	132 (13.59%)	153 (15.76%)	382 (39.34%)	304 (31.31%)	2.63	HE
12	Vice chancellor gives very clear information about academic staff job performance in our university	156 (16.07%)	148 (15.24%)	373 (38.41%)	294 (30.28%)	2.57	HE
13	In our university, circulars are given before action are taken on academic staff	369 (38.00%)	403 (41.50%)	162 (16.68%)	37 (3.81%)	2.67	HE
14	In our university, there are written information on sign posts to give direction of our school programme	281 (28.94%)	367 (37.80%)	160 (16.48%)	163 (16.79%)	2.65	HE
15	In our university, lecturers are provided with communication system for their lecturers	254 (26.16%)	178 (18.33%)	306 (31.51%)	233 (24.00%)	1.96	SE
Grand Mean						2.49	SE

The analysis focuses on the extent to which administrators' managerial communication competences influence academic staff job performance in Federal Universities of North-East Nigeria. Regarding the direct communication of information by the Vice Chancellor to academic staff, 132 respondents (13.59%) rated this at a very high extent, 153 (15.76%) at a high extent, 382 (39.34%) at some extent, and 304 (31.31%) at a low extent. With a mean score of 2.12, this suggests that direct communication from the Vice Chancellor is perceived as insufficient by the majority of respondents. In terms of the clarity of information given by the Vice Chancellor

about academic staff job performance, 156 respondents (16.07%) rated this at a very high extent, 148 (15.24%) at a high extent, 373 (38.41%) at some extent, and 294 (30.28%) at a low extent. The mean score of 2.17 reflects a similar trend, indicating that clear communication from the Vice Chancellor is also lacking.

Hypothesis 1: Staff Control does not significantly influence academic staff job performance in Federal Universities, North-East Zone, Nigeria.

Table 4: Summary of Regression Analysis of Influence of Staff Control on Academic Staff Job Performance in Federal Universities in the North-East Zone, Nigeria

Model	Sum of Squares	Df	Mean Square	F	p-value	Remark
Regression	825.895	1	825.895	57.654	0.000	Reject H_{01}
Residual	5445.468	380	14.325			
Total	6269.364	381				

The results in Table 4 indicated that F-statistic of 57.654 and a p-value of 0.000 which is less than the level of significant ($\alpha = 0.05$). This indicated that, the model as a whole is statistically significant. Therefore, the null hypothesis one was rejected. This implies that staff control significantly influenced academic staff job performance in Federal Universities in North East Zone, Nigeria.

Hypothesis 2: Staff orientation does not significantly influence academic staff job performance in federal universities in the North-East Zone, Nigeria.

Table 5: Summary of Regression Analysis of Influence of Staff Orientation on Academic Staff Job Performance in Federal Universities in the North-East Zone, Nigeria

Model	Sum of Squares	Df	Mean Square	F	p-value	Remark
Regression	1943.169	1	1943.169	170.68	0.000	Reject H_{01}
Residual	4326.195	380	11.385			
Total	6269.364	381				

Table 5 revealed F-statistic of 170.68 and a p-value of 0.000 which is less than the level of significance ($P < 0.05$). Therefore, the null hypothesis which stated that staff orientation does not significantly influence academic staff job performance in federal universities in the North-East Zone, Nigeria was rejected. This means that staff orientation significantly influenced academic staff job performance in federal universities in the North-East Zone, Nigeria. This indicated that,

administrators' managerial competence in staff orientation had significant on academic staff job performance in Federal Universities in North East Zone, Nigeria.

Hypothesis 3: Communication skill does not significantly influence academic staff job performance in federal universities in the North- East Zone, Nigeria.

Table 6: Summary of Regression Analysis of Influence of Communication Skill on Academic Staff Job Performance in Federal Universities, North-East Zone, Nigeria

Model	Sum of Squares	df	Mean Square	F	p-value	Remark
Regression	2487.895	1	2487.895	250.01	0.000	Reject H03
Residual	3781.469	380	9.951			
Total	6269.364	381				

Table 6 revealed F-statistic of 250.01 and a p-value of 0.000 which is less than the level of significance ($P < 0.05$). Hence, the null hypothesis which stated that communication skill does not significantly influence academic staff job performance in federal universities in the North- East Zone, Nigeria was out rightly rejected. This signifies that communication skill significantly influenced academic staff job performance in federal universities in the North- East Zone, Nigeria. Administrators' managerial staff controls have significant influence on academic staff job performance in Federal Universities, North-East Zone, Nigeria. Administrators' managerial competence on staff orientation has significant Influence on academic staff job performance in Federal Universities, North-East Zone, Nigeria. Administrators' managerial competence on communication has significant Influence on academic staff job performance in Federal Universities, North- East Zone, Nigeria. Administrators' managerial competence on academic staff training has significant influence on academic staff job performance in Federal Universities, North-East Zone, Nigeria.

Discussions

The findings revealed that all the null hypotheses one to three are rejected meaning there managerial competence of control, orientation and communication skills of administrators have significance influence on academic staff job performance in Federal Universities in the North – East, zone of Nigeria.

Conclusion

Based on the findings of this study, the study concluded that, Staff control influenced academic staff job performance in federal universities in the North-East Zone, Nigeria; Staff orientation influenced academic staff job performance in federal universities in the North-East Zone, Nigeria; Communication skill influenced academic staff job performance in federal universities in the North-East Zone, Nigeria.

Recommendations

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

1. Universities should implement fair and supportive staff control mechanisms and regular review to enhance academic staff job performance.
2. Universities should implement comprehensive staff orientation programs for new and existing staff, providing introductions to the university, fostering community, offering professional development, and clarifying rules and regulations.
3. University administrators should prioritize clear, consistent, and open communication through various channels, ensuring transparent information dissemination and providing communication skills training for administrators.

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COMPARATIVE ANALYSIS OF SCHOOL VARIABLES AND STUDENTS' ACADEMIC PERFORMANCE IN ACCOUNTING AND MATHEMATICS IN SENIOR SECONDARY SCHOOLS IN UYO LOCAL GOVERNMENT AREA, AKWA IBOM STATE – NIGERIA
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ABSTRACT

The research seeks to investigate the relationship between selected school-related variables such as teachers' qualification and class size on the academic performance of students in two subjects (Accounting and Mathematics). Two research questions and two corresponding hypotheses were drawn from the purpose of the study. The study adopted a correlational research design with a sample of twenty (20) secondary school teachers drawn from ten (10) sampled public secondary schools in Uyo Local Government Area, Akwa Ibom State using the stratified sampling technique. The study used two researchers made instruments titled: School Variables Correlates Questionnaire (SVCQ) and Accounting/Mathematics performance test (AMPT). The reliability coefficient of 0.82 was obtained using Cronbach Alpha for both instruments. Data collected was analyzed using the mean, standard deviation and Pearson product moment correlation analysis (PPMC) to take decisions at 0.05 level of significance in accordance with the research questions and hypothesis of the study. The result obtained showed that teachers' qualification and class size related significantly with the academic performance of students in accounting and mathematics. It was therefore recommended amongst others that teachers should adopt innovative classroom management strategies to effectively handle large class sizes while maintaining instructional quality. And that school administrators and heads should address gaps in internal management by prioritizing the recruitment of qualified teachers as well as encouraging continuous professional development among staff.

Keywords: School variable, teachers' qualification, class size, academic performance, accounting and mathematics

Introduction

The Nigerian National Policy on Education as stated in the policy guidelines (Federal Republic of Nigeria, 2004) aims at producing literate and numerate citizens who can think logically and scientifically for themselves. Education is universally acknowledged as an important instrument

for personal, societal, and national development. Education facilitates the transmission of knowledge, values, and culture but also empowers individuals to contribute meaningfully to the economic and social progress of their societies. In Nigeria, secondary education plays a critical role in preparing students for higher education and the labor market. The effectiveness of this educational level is often measured by students' academic performance, especially in foundational and career-oriented subjects such as Accounting and Mathematics. American accounting association (2016) defined accounting as the process of identifying, measuring and communicating economic information to permit informed judgments and decisions by users of the information. Mathematics involves solving everyday problems and using imagination, instinct, and reasoning to derive new concepts and solve complex problems (Engzell et al., 2021). According to Komba, Hizza and Jonathan (2013), Academic performance refers to the accomplishment of a given task that is measured against predetermined standards of accuracy, completeness, cost and speed. It also refers to the act of academics in which students are engaged in their studies and how well they meet the standards set out by the authorities responsible (Esuong & Edoho, 2018).

The accounting and mathematics curriculum in the secondary schools is carefully designed to suit the needs of the students and other interested learners. These subjects are not only critical for individual career advancement but also vital for national economic development. Despite the importance of these subjects, numerous studies have indicated persistently low performance among Nigerian secondary school students (Adeyemi, 2019; Uche & Omoike, 2021).

Several factors contribute to this underperformance, including socio-economic conditions, school environment, teacher effectiveness, and administrative practices. Among the school-related factors such as class size and teacher qualification and have emerged as particularly significant variables influencing students' academic performance (Esuong, Owan, Edoho, and Eni 2023). Despite the recognition of these factors, there is shortage of localized studies focusing on their combined effect on students' academic performance in Accounting and Mathematics within Uyo Local Government Area. Given the unique socio-economic and educational dynamics of the region, it is imperative to investigate how these school variables interact to influence student academic performance. This study aims to fill this gap by conducting a comparative analysis of

class size and teacher qualifications and their collective impact on the academic performance of senior secondary school students in Accounting and Mathematics in Uyo LGA.

Class Size and Academic Performance

Class size has long been debated in educational research as a determinant of learning outcomes. According to Adeyemo (2020), smaller class sizes allow for more individualized instruction, increased student engagement, and better classroom control, all of which can enhance academic performance. Conversely, large class sizes often result in reduced teacher attention, poor student participation, and overburdened classroom management strategies (Okonkwo, 2022).

In the context of Nigerian secondary schools, overcrowded classrooms are common, especially in public schools. This overcrowding limit the teacher's ability to monitor student progress and give personalized feedback, which are critical for complex subjects like Accounting and Mathematics. Recent empirical findings by Chinedu and Bassey (2023) indicate that students in schools with class sizes below 30 perform significantly better in quantitative subjects than those in classes exceeding 50 students.

Teacher Qualification and Instructional Quality

The qualifications of teachers are crucial in determining the quality of education delivered in schools. According to Afolabi and Ajayi (2021), teachers with higher educational qualifications and professional certifications demonstrate superior pedagogical skills, better content mastery, and improved classroom management. These attributes are essential in delivering abstract and technical subjects like Accounting and Mathematics.

Nwachukwu and Akpan (2022) emphasize that professionally trained teachers are more likely to employ innovative instructional strategies that foster deeper understanding among students. The lack of adequately trained and certified teachers, especially in public schools, contributes significantly to poor student outcomes. A study conducted by Eze and Ekanem (2023) found a strong correlation between teacher qualification and students' performance in mathematics-based subjects in Akwa Ibom State.

Statement of Problem

There has been growing concern over the years regarding students' performance in both internal and external examinations. Various researchers have identified several factors responsible for the persistent decline in students' academic achievement in Accounting and Mathematics at the

senior school certificate level. Although numerous strategies have been suggested by scholars and experts to address this issue, the poor performance of students in these subjects remains a consistent challenge in both school-based and standardized assessments. However, some school variables can have a significant influence on students' academic performance. This study aims to fill this gap by conducting a Comparative analysis of school variables and students' academic performance in accounting and mathematics in senior secondary school in Uyo LGA.

Objectives of the Study

This study aims to conduct a Comparative analysis of school variables and students' academic performance in accounting and mathematics in senior secondary school in Uyo LGA. This study seeks to

1. Determine the relationship between teachers' qualification and students' academic performance in accounting and mathematics in senior secondary school in Uyo L.G.A.
2. Determine the relationship between class size and students' academic performance in accounting and mathematics in senior secondary school in Uyo L.G.A.

Research Questions

1. What is the relationship between teachers' qualification and students' academic performance in Accounting and Mathematics in senior secondary school in Uyo L.G.A.
2. What is the relationship between class size and students' academic performance in Accounting and Mathematics in senior secondary school in Uyo L.G.A.

Research Hypotheses

1. There is no significant relationship between teachers' qualification and students' academic performance in Accounting and Mathematics in senior secondary school in Uyo L.G.A.
2. There is no significant relationship between class size and students' academic performance in Accounting and Mathematics in senior secondary school in Uyo L.G.A.

Methodology

The study adopted survey research design. This was considered appropriate since the study sought to examine the Comparative analysis of school variables and students academic performance in accounting and mathematics in senior secondary school in Uyo LGA. The population of the study comprises all the 96 accounting and mathematics teachers in Uyo Local government Area Akwa Ibom State, specifically secondary schools accounting and mathematics teachers. A Simple random sampling technique was used to obtain sample for the study. The total sample size consists of twenty (20) accounting and mathematics teachers drawn from Ten (10) selected secondary schools in the research area. The researcher made two instruments titled: “School Variables Correlates Questionnaire (SVCQ) and Accounting and Mathematics performance test (AMPT) was used to generate data for the study. The School Variables Correlates Questionnaire (SVCQ) was used to obtain data on the independent variable teacher’s qualification and class size. The SVCQ had two sections which was used for measuring the independent variables. The Accounting/ Mathematics Performance Test (AMPT) on the other hand was used for measuring the dependent variable of the study. The reliability coefficient of 0.826 was obtained using Cronbach Alpha. This the instrument was adjudged to be valid and reliable. Data collected was analyzed using the Statistical Package for the Social Science (SPSS) using the mean and standard deviation to take decisions based on the criterion mean and Pearson product moment correlation analysis (PPMC) to take decisions at 0.05 level of significance in accordance with the research questions and hypothesis of the study

Results:

Research Question One: What is the relationship between teachers’ qualification and students’ academic performance in Accounting and Mathematics in senior secondary school in Uyo L.G.A.

Table 1: shows the mean and standard deviation of teachers' qualifications on academic performance of senior Secondary School students in accounting and mathematics

Variables	N	\bar{X}	SD
NCE	1	09.85	2.03
B.Sc(Ed)	10	10.17	1.89
M.Ed	9	18.30	1.46
Ph.D	0	00.00	0.00

The result presented in Table 1 showed mean and standard deviation of number of teachers and their qualification on students' academic performance of senior secondary school in accounting and mathematics in uyo local government area. As shown in the Table, the number of NCE teachers is 1 with mean of 09.85, B.Sc(Ed) with 10 teachers and a mean of 10.17, M.Ed with 09 teachers with mean 18.30 and PhD 00.00 respectively. The responses on M.Ed and B.Sc have the highest mean compared to NCE. Thus, implying that there is a relationship of teachers' qualification on students' academic performance of senior secondary school in accounting and mathematics.

Research Question 2: What is the relationship between class size and students' academic performance in Accounting and Mathematics in senior secondary school in Uyo L.G.A.

Table 2: Mean summary of relationship between class size and academic performance of senior Secondary School Students in accounting and mathematics

Variables	N	Mean	Pooled Mean
Class Size	20	6.32	2.68
Academic performance	20	7.60	

In Table 2, the mean for all the respondents under class size is 6.32 and academic performance is 7.60. The pooled mean of items 2.68 is greater than the criterion means of 2.50 of the decision rules. This implies that there is strong relationship between class size and academic performance of senior Secondary School Students in accounting and mathematics.

Hypothesis One

There is no significant relationship between teachers' qualification and students' academic performance in Accounting and Mathematics in senior secondary school in Uyo L.G.A. The independent variable in this hypothesis is teachers' qualifications while the dependent variable was the academic performance of senior Secondary School Students in accounting and mathematics. A pearson product moment correlational analysis was conducted to compare the relationship that exist between teachers' qualifications and academic performance. The hypothesis was tested at .05 level of significance, with the results of the analysis presented in Table below.

Table 3: Pearson's Product Moment Correlation (r) between teachers' qualifications and academic performance of Junior Secondary School Students in accounting and mathematics.

		Teachers' qualification	Academic performance
Teachers' Qualification	Pearson correlation	1	.785**
	Sig. (2-tailed)		
	N		.000
Academic Performance		20	20
	Pearson correlation	.785**	1
	Sig. (2-tailed)		
	N	.000	
		20	20

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

Table shows a pearson product moment correlation was run to the relationship that exist between teachers' qualifications and academic performance of senior Secondary School Students in accounting and mathematics in Uyo Local Government Area. The result using Pearson product moment correlation shows a strong positive correlation between teachers' qualifications and academic performance, which was statistically significant. ($r = .785$, $n = 20$, $p = .000$, $P < 0.05$). The model is however significant at 5% alpha level such that the sig. value is 0.000^{**} hence, the null hypothesis is rejected and the alternative upheld. It is therefore concluded that there is a significant relationship that exist between teachers' qualifications and academic performance of

senior Secondary School Students in accounting and mathematics in Uyo Local Government Area.

Hypothesis Two

There is no significant relationship between class size and students' academic performance in Accounting and Mathematics in senior secondary school in Uyo L.G.A. The independent variable in this hypothesis is Class size while the dependent variable was the academic performance of senior Secondary School Students in Accounting and mathematics. A pearson product moment correlational analysis was conducted to find the relationship between Class size and academic performance of senior Secondary School Students in accounting and mathematics among public secondary school students. The hypothesis was tested at .05 level of significance, with the results of the analysis presented in Table below.

Table 4: Pearson Product Moment Correlation (r) between class size and academic performance in accounting and mathematics.

		Class size	Academic performance
Class size	Pearson correlation	1	.701**
	Sig. (2-tailed)		
	N		.000
Academic performance		20	20
	Pearson correlation	.701**	1
	Sig. (2-tailed)		
	N	.000	
		20	20

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

Table shows a pearson product moment correlation was run to determine the relationship between class size and academic performance. There was a strong positive correlation between class size and academic performance, which was statistically significant. ($r = .701$, $n = 20$, $p = .000$)

Discussion of Findings

Teachers' qualifications and academic performance.

The result presented in Table 1 showed teachers' qualification and academic performance of Junior Secondary School students in accounting and mathematics. The result indicated that there is a relationship between teachers' qualification and students' academic performance of Junior

Secondary School in accounting and mathematics in Uyo Local Government Area. The null hypothesis in Table 3 further shows a strong positive correlation between teachers' qualifications and academic performance of senior secondary School Students in accounting and mathematics. The result implies that teachers with higher qualifications are able to address different abilities and needs of the classroom which influences students' academic performances. As discussed in this study, the qualifications of teachers are critical determinants of students' academic success. Qualified teachers are equipped with the necessary pedagogical and content knowledge to deliver instruction effectively and to engage students meaningfully (Adedeji & Owioye, 2020). The findings of this study are in line with the findings of Akinsolu (2019) who found that there a strong positive correlation between teachers' qualifications and students' academic performance in Business Studies, emphasizing that teachers with higher academic credentials and professional training were more effective in promoting students' understanding of complex topics. The present study concludes that there is a strong positive relationship between teachers' qualifications and academic performance of senior Secondary School Students in accounting and mathematics in Uyo Local Government Area.

The result presented in Table 2 showed the relationship between class size and academic performance of senior Secondary School Students in accounting and mathematics in Uyo Local Government Area. The result showed that there is a strong relationship between class size and academic performance. The corresponding hypothesis also revealed that there was a strong positive correlation between class size and academic performance. The result of this study could be explained based on the fact that teachers have better classroom interactions with students in a small class thereby enhancing good academic performance. The finding of the study is related to the findings of Adeyemi (2019) who found that students in classrooms with fewer than 30 students outperformed their peers in larger classes in Business Studies. Hence, the present study concludes that teachers in smaller classes were better able to identify and address individual learning needs than those in larger classes.

Recommendations

1. Teachers should assess their professional competencies and academic qualification to identify areas where further training is needed, taking advantage of opportunities for

professional development and pursuing additional studies to improve instructional delivery.

2. Teachers should adopt innovative classroom management strategies to effectively handle large class sizes while maintaining instructional quality.
3. School administrators and heads should address gaps in internal management by prioritizing the recruitment of qualified business studies teachers and encouraging continuous professional development among staff.
4. Government and non-government agencies with interest in education should provide targeted support for schools in building more classroom facilities to decongest the existing crowded classroom.

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**ANTECEDENTS OF JUNIOR SECONDARY SCHOOL TEACHER-MADE TEST IN
BUSINESS STUDIES IN GASHUA EDUCATIONAL ZONE, YOBE STATE,
NIGERIA.
BY**

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ABSTRACT

This study determines the Antecedents of teacher-made test in business studies in Junior Secondary Schools in Gashua Educational Zone Yobe State, Nigeria. The study used descriptive survey design. The instrument used for the study was checklist and pro-forma to collect the data. The study determined the types of test formats Business studies teachers use in teacher-made tests; the processes Business studies teachers follow in assessing their students and the relationship between student's performance in Business studies teacher-made test and their performance in BECE Business studies in Gashua Educational Zone Yobe State. The population of this study consisted of eighteen (18) junior secondary schools that offer business studies. three hundred and eighty-three (383) business studies student's result in teacher-made test and BECE examination in Gashua Education Zone Yobe State Nigeria were selected through simple random sampling techniques. The data collected were analyzed using frequency, percentage counts and PPMCC. The study revealed that most of the teachers used conventional multiple choice than any other type of test's format, it also revealed that most teachers do not follow the procedure for assessment and scoring. And also revealed that performance of students in Teacher- made test do not predict their performance in BECE in Business studies in Gashua Educational Zone Yobe State, with $r = -0.007$, -0.058 and -0.004 . Based on the findings, the following recommendations were made: Principals of Junior Secondary Schools should encourage teachers to use various types of tests format in their assessments. Based on the discrepancy that exist in teacher-made tests in Gashua education zone and Psychological Testing, teachers should be encouraged to cover all the curriculum content which was design by the curriculum developers. There is need for Yobe state Universal Basic Education to organize workshop and training for their teachers of business studies in the area of test development so they can improve on their quality of tests.

Keywords: *Antecedents, Secondary School, Teacher-Made Test and Business Studies.*

Introduction

Predictive validity evidence allows the researchers to make probability statements about how well students will behave in the future based on his test scores. Many Nigerian Universities for

instance, require students to take post University matriculation examination to predict each prospective student's grade point average at the end of first year. All other things being equal, students with higher test scores are expected to have high grade point average than students with lower test scores and thus, stand a better chance of being admitted. Brown and Coughlin (2007) opined that predictive validity is the ability of an assessment tool to predict future achievements either in some activity or on another assessment on the same construct. Furthermore, Nworgu (2006) affirmed that predictive validity determines how accurate an instrument of measurement administered on a subject or group of subjects can predict a criterion measurement.

Test is defined as a task or a set of tasks or questions intended to elicit particular type of behavior when presented to learners under standard conditions through achievement, aptitude or intelligence test (Popham, 2008). Tests are currently being employed in the solution of a wide range of practical problems. Tests are also serving important functions in basic statistics. Sambo (2008) for instance, observed that, one of the major instruments used in educational research is a test. Nearly all problems in differential psychology for example, require testing procedure as a means of gathering data. Similarly, psychological tests provide standardized test for investigating such varied problems as life-span developmental changes within the individual, the relative effectiveness of different educational procedures, and the outcome of psychotherapy.

Teacher-made tests bring assessment and teaching together for the benefit of the students and provide the teacher with opportunity to participate in a unique way in the assessment process that leads to the final grade obtained by his or her students. The primary purpose of teacher-made test is to enhance the validity of the assessment by including assessment of outcomes that cannot be readily assessed within the context of a single public examination. As Mpofu (2011) states, for a teacher to be able to do his/her work effectively, he/she needs to assess the progress of his or her pupils from time to time. Similarly, a good knowledge of where the pupil is and how he/she is progressing helps the teacher to effectively cater for the needs of pupils (Chakanyika, 2000). Also, Anastasi and Urbina (2008) noted that the impact of community programs and influence of environmental variables on human performance rely on tests for good outcome. The many kinds of tests designed for these purposes differ in their major characteristics. They vary in the way they are administered as individual testing of each person by a trained examiner like teachers in

the case of teacher –made tests, the simultaneous testing of large group in the school environments.

Teacher-made tests and Basic Education Certificate Examination (BECE) are used to predict students' performance in an examination. Teacher-made tests are designed and constructed by the teacher. According to Evans (2009) teacher-made tests are constructed by the teacher himself or herself. This is however, possible if such teacher-made tests and each examination have predictive validity. It is only when the predictive validity of these examinations is determined that they can be reliably used for making decisions in the future. This indicates that, often the future performance of students is dependent on their previous performance and by implication it is expected that a student who performed well and obtained good grades in teacher-made test in business studies is also expected to do good and obtain good grade in BECE. Furthermore, Kolawole (2001) opined that teacher-made tests are tests constructed, administered and scored by the teachers. The classroom teacher therefore must consider several things in selecting the tools to be used for tests given to students. Teacher-made tests are to be properly and carefully planned to meet the criteria of validity and reliability so that the results obtained could be satisfying. Bandele (2006) has rightly observed that the bane of examination system in the developing world is heavy reliance on teacher-made tests that are constructed under questionable conditions. This underscores the need to pay attention to teacher made tests so that all is not based on the teacher's whims.

In the case on Business studies, teacher-made tests are tests designed to assess the degree of mastering of specific unit of instruction taught by the teacher. They are tailored to measure the achievement of students and intended objectives for them after completing a series of learning tasks for the course. Sithole (2010) opined that the effectiveness of teacher-made tests in Business studies therefore, depends on its quality because it provides relevant measures of many important learning outcomes and indirect evidence concerning test. Furthermore, Adetayo (2008) maintain that Teacher- made tests also have positive impact on teaching and learning; helping to motivate students by engaging them into meaningful activities, reinforcing curriculum aims and good teaching practice among teachers, providing structure and significance for daily teaching activities, namely, for teachers to assess their own students. Atakpa (2011), also stressed that, the

validity and reliability of the information provide however, depends on the care that goes in to planning preparation of the test

Teacher-made tests play a very significant role, because they are part of the teaching and learning process. Madziyire (2010) posits that, teacher-made tests help the teacher to identify the content (knowledge or skills) which has been mastered by pupils and the teacher to understand the results from his/her tests, the areas where the pupils have difficulties and then find ways of overcoming the difficulties so that the pupils can do better. Ogunniyi (2004) observed that, teacher-made tests give a more immediate measure of progress and achievement of learners; guides and improves instruction, diagnoses learners' knowledge of a topic. Teacher-made tests provide feedback so that teachers can shift the emphasis of their instruction and provide remedial activities before the next lesson (Kolawale, 2010). Furthermore, James & Pedder (2006) suggested that, teacher-made tests are used as continuous assessment tool which provides more information that is more reliable than examinations or standardized tests. Therefore, well-constructed teacher-made tests give students the opportunity of assessing their knowledge immediately and constructive feedback which will help the learners to improve their performance (Sax, 2007).

Evaluation is defined by Kizlik (2009) as "the systematic collection of descriptive and judgmental information necessary to make effective decision related to the selective, adoption, value and modification of various instructional activities". Cangelosi (2009) in his own opinion defined evaluation as a process of finding out and agreeing if what you are doing is worth doing, if you are doing it well and how you can do it better. Also, Gronlund and Linn (1990) defined evaluation as passing of value judgment about the worth of someone or something.

It is well established fact that, the status and the kind of evaluation teacher uses in the classroom have far reaching implications not only for student's achievements, but also for the nature of instructional procedure and feedback assessment reports on such students. There is abundance of empirical evidence to support the concept that students learn the way they are examined. A corollary to this concept is that if teacher-made tests always for factual knowledge, the students will soon learn to expect only knowledge-oriented questions where as if he or she always tests for higher cognitive abilities the students learn to prepare for such questions. In other words, the way teachers test affects the pattern or style of learning by their students and consequently their

achievement. Atakpa (2011) confirmed that the importance of good evaluation of teacher-made tests that goes on in Business studies cannot be over-emphasized

Educational programmes are established for specific purposes. Programme evaluation in education, according to Nworgu (2003) is indispensable, as evaluation serves to provide an objective basis for effecting necessary modifications and evolving strategies for improving performance. Commenting on the importance of evaluation, Cangelosi (2009), asserts that ‘one important reason for evaluation of Teacher-made tests amongst others is to diagnose student’s weaknesses with a view to improving future performance’. Also to identify the need for teachers to be helped in order to understand the important roles which properly constructed, administered and scored tests play in preparing students for external examinations.

The criteria for evaluating teacher-made tests is the degree of conformity of teacher-made tests to technical guidelines for test construction; the learning outcome measured; the Procedure for preparing Teacher-Made Tests, the degree of content validity, score reliability and predictive validity. The test tools are supposed to reflect behavioral change expected of the student after an instruction. For a teacher to construct valid and reliable instruments for classroom assessment, he or she must adhere to item writing instructions, procedures of assessment, reflect topics available in the national objectives. Haladyna, Downing & Rodriguez (2002) support the view that effective use of teacher-made tests require the assessment of their quality in terms of conformity to technical guidelines for test construction, learning outcomes they measure, their validity and reliability and in their submissions observed that perceived overreliance on the multiple-choice format to measure the recall of knowledge instead of higher level of learning has resulted in disenchantment with multiple-choice testing. They reported two sources of evidence in their study as strategies for the collective opinions of textbooks authors and second source was empirical research which they made a collective judgment about the validity of each guideline after considering both sources of evidence and produced thirty-one items-writing guidelines. Each of thirty-one item-writing guidelines was subjected to the same validation procedure. This was to ensure that multiple-choice test items developed by test constructors in conformity to the multiple-choice item writing guidelines can be said to be of quality.

The primary purpose of test or teacher-made test is to enhance the validity of the assessment by including assessment of outcomes of students that cannot be readily assessed within the context

of a single public examination. Hamman-Tukur and Audu (2015) undertook an assessment of procedure and quality of teachers' assessment in agricultural science in senior secondary schools in Borno State. A random sample of 265 agricultural science teachers out of a population of 315 participated in the study. The result shows that 88.7% of the teachers used restricted essay, 88.1% used conventional multiple choice and continuous assessment was administered two to three times in a term. Afemikhe and Imobekhai (2014) agreed that test formats are the various types of test classroom teacher's use in assessing their students in schools. The test formats used in assessing students include: Multiple choice, matching, true/false, short answer and essay questions. Alternative assessments such as observation, conferences, portfolios, administering of test, scoring of test, peer and group assessments techniques have equally been used. The preparation of each of these assessments is important in ensuring the validity of the information generated.

Similarly, Audu (2014) confirmed that the processes involved are identification and definition of objective by the teacher, choosing and developing appropriate instruments for measuring the objectives; administration of test to the group of students; scoring the responses of each students (represent their performance); decisions are made on the basis of the scores of each individual students and report the performance to the relevant bodies. Another study conducted by Atsua (2012) on predictive validity of teacher-made tests in relation to WAEC and NECO SSCE economics for three years from year 2009/2010, 2010/2011 and 2011/2012 academic sessions and used five senior secondary schools in Maiduguri Metropolis. The study sampled off two thousand nine hundred and fifty one (2,951) SSIII students for the study. The result of the study indicated a substantial significant correlation relationship between teacher-made tests and WAEC SSCE economics at $p < 0.05$ level of significance.

The adequacy of the act of teaching must be judged in terms of the degree of which the students fall short of their potentials, the onus must be borne by the teacher and other responsible agents who constitute the educational environment. The present poor performance in business studies have not been encouraging but rather disheartening in the study area. This may be as a result of the quality of teacher-made test. In relation to these, there had been public criticism and disappointment over the student's performances in business studies BECE examinations in Yobe

State. This situation has not changed creditably as Atakpa (2011) also expressed the same view, attributing these failures to bad teaching.

Objectives of the Study

The objectives of the study were to determine;

1. the types of test format Business studies teachers use in teacher-made tests
2. the processes for developing teacher-made tests by Business studies teachers
3. the relationship between students' performance in teacher-Made Tests and their performance in BECE for the year 2016 - 2018 in junior secondary schools in Gashua Educational Zone, Yobe State.

Research Questions

1. What are the types of test formats Business studies teachers use in teacher-made tests?
2. What processes do Business Studies teachers follow in assessing their students?

Hypothesis

The hypothesis tested at 0.05 level of significant

Ho₁: There is no significant relationship between the performance of students in Business studies teacher- made tests and their performance in Basic Education Certificate Examination (BECE) in Business Studies in Gashua Zone Yobe State.

Methodology

The study used descriptive survey design. A total number of four hundred and fifteen (415) Business studies test items were obtained from the sampled schools. From the total number of tests items of four hundred and fifteen (415), only three hundred and eighty- three (383) tests items were used for the study from eighteen (18) schools in Gashua Educational zone. The sample of the schools for the study was determine by used of Krejcie and Morgan (1970) table sample size determination. Furthermore, fifty (50) Business Studies Teachers were used to evaluate the Procedure they used in evaluating their Students; this was also based on Krejcie and Morgan (1970). The instrument used for the study was checklist and pro-forma to collect data. The data collected were analyzed using frequency and Percentage counts and Pearson Product Moment Correlation Coefficient (PPMCC).

Results

Based on the data collected from the field, the researchers presented the both the descriptive and inferential result as follows:

Research Question One: What are the types of test formats Business studies teachers use in teacher-made tests?

Table 1. Frequency and percentage of Type of Tests Formats used by Business Studies Teachers in Evaluation

S/No.	Type of Teacher-made test	Frequency of usage in (%)	
1	Essay Question	110	(28.7%)
2	Fill in the Blank	43	(11.2%)
3	Conventional Multiple Choice	200	(52.3%)
4	True/False	30	(7.8%)
	Total	383	100%

Table 1. results revealed that 52.3% of the teachers used conventional multiple choice, 28.7% of the teachers used essay questions, 11.2% used fill in the Blank and 7.8% used True/False. This showed that most of the teachers used conventional multiple-choice than any other type of tests format.

Research Question One: What processes do Business Studies teachers follow in assessing their students?

Table 2. Frequency and percentage of Processes Business Studies Teachers used in evaluating their Students in Gashua Educational Zone

S/No	Procedure of Evaluation	Yes	No	Total
1	Determining the purpose of testing	50(100%)	0(0%)	50(100%)
2	Development of evaluation based on clearly defined objectives	3(6%)	47(94%)	50(100%)
3	Developing the test specification/table of specification for planning classroom evaluation	0(0%)	50(100%)	50(100%)
4	Selecting appropriate test items types	6(12%)	44(88%)	50(100%)
5	Preparing relevant test items	5(10%)	45(90%)	50(100%)
6	Assembling the test	2(4%)	48(96%)	50(100%)
7	Administering the test	50(100%)	0(0%)	50(100%)
8	Constructing a model answer for scoring essay questions (marking Scheme)	24(48%)	26(52%)	50(100%)
9	Appraising the test	34(68%)	16(32%)	50(100%)
10	Items analysis (discrimination and difficulty index)	0(0%)	50(50%)	50(100%)
11	Using the result/ report students' progress to parents and educationist	15(30%)	35(70%)	50(100%)

Table 2 showed teachers use various processes of developing tests in Business studies. The results revealed that 94% of the teachers do not developed their evaluation based on clearly defined objectives, 88% of Business study teachers do not select appropriate test item types. Also 96% of the teachers do not assembled the test items base on the topics. The study further revealed that none 0% of the Business study teachers determine the quality of test such as item discrimination and difficulty index. It also revealed that majority of the teachers hardly report student's progress to educational stakeholders, while 30% of Business study teachers prepared model for scoring essay questions.

H₀₁: There is no significant relationship between the performance of students in Business studies teacher- made tests and their performance in Basic Education Certificate Examination (BECE) in Business Studies in Gashua Zone Yobe State.

Table 3: Relationship between Students Performance in Teacher-Made Tests and their Performance in BECE for the year 2016 - 2018

Variables	N	Mean	SD	R	P
TMT2016	1437	50.8267	3.19447	-0.007	>0.05
BECE2016	1437	39.7926	15.12244		
TMT2017	1557	58.0482	5.53636	-.058	<0.05
BECE2017	1557	40.7720	14.73406		
TMT2018	1306	59.1662	2.40640	-.004	>0.05
BECE2018	1306	41.3783	13.56870		

Table 3 indicates the relationship between students' performance on teacher-made tests and their performance in BECE in Gashua Educational Zone Yobe State Junior Secondary Schools for 2016 academic session with $r = -.007$ for 2017 $-.004$ and $-.026$ for 2018. The null hypothesis is therefore accepted. Because the finding implies that; there was negative relationship between students' performance in teacher-made tests and their performances in BECE in Business studies in Gashua Educational Zone Yobe State.

Discussion

The study showed that most of the teachers used conventional multiple-choice than any other type of test's format. The findings agreed with that of Obioma (2011) who found that most of the teachers used conventional multiple choice than the other types of test format. He further added that the consequences of considering more of conventional multiple choice in examination is that students may not develop their writing skills and vocabulary which are basic skills required for optimum performance while serving the nation in different places of work.

Regarding the second research question, that is the processes of developing tests in Business studies, the results revealed that 94% of the teachers did not developed their evaluation based on defined objectives, 88% of Business study teachers did not select appropriate test item types. Similarly, 96% of the teachers did not assembled the test items base on the topics. The study further revealed that none 0% of the Business study teachers determine the quality of test such as item discrimination and difficulty index. It also revealed that majority of the teachers hardly report student's progress to educational stakeholders, while 30% of Business study teachers prepared model for scoring essay questions. The study were in line with the findings of Akujieze and Ifeakor (2016) who investigated attitude of teachers towards the construction of test for quality assessment delivery in secondary education in Onitsha education zone Anambra State and found out that item analysis were rarely done by secondary school teachers thereby comprising quality of assessment tests.

It indicates the relationship between students' performance on teacher-made tests and their performance in BECE in Gashua Educational Zone Yobe State Junior Secondary Schools for 2016 academic session with $r = -.007$ for 2017 $-.004$ and $-.026$ for 2018. The null hypothesis is therefore accepted. Because the finding implies that; there was negative relationship between students' performance in teacher-made tests and their performances in BECE in Business studies in Gashua Educational Zone Yobe State.

Conclusion

This study concluded that most of the teachers used multiple choice questions and essay test questions. While least teachers used matching test item, true/false and yes/no and at the same time they do not carry out assessment based on defined instructional objective, they are also not using table of specification in planning the test and carry out the item analysis. It appears that teachers in Secondary School are not following the recommended procedures in testing their students. While the hypothesis revealed negative relationship between students' performance in teacher-made tests and their performances in BECE in Business studies in Gashua Educational Zone Yobe State.

Recommendations

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

1. Principals of Junior Secondary Schools should encourage teachers to use various types of tests format in their assessments.
2. Based on the discrepancy that exist in teacher-made tests in Gashua education zone and Psychological Testing, teachers should be encouraged to cover all the curriculum content which was design by the curriculum developers
3. There is need for Yobe state Universal Basic Education to organize workshop and training for their teachers of business studies in the area of test development so they can improve on their quality of tests.

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ENTRY QUALIFICATION AS CORRELATE OF FACULTIES OF EDUCATION STUDENTS' ACADEMIC PERFORMANCE IN FEDERAL UNUNIVERSITIES, NORTH – EAST, NIGERIA

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ABSTRACT

The study investigated the correlation between the entry qualifications of Faculties of Education students' academic performance in Federal universities North – East, of Nigeria. The study was guided by two objectives which are to examine the relationship between entry qualification of UTME and DE admitted students and their academic performance in the Faculties of Education. Two research questions and two corresponding hypotheses were formulated. Correlational Research design was employed to guide the study while the population of the study comprised of all the Federal Universities in the North – East, Nigeria, however, only the universities that have Faculties of Education and in operation for at least five academic sessions were used for the study making a total of five Federal Universities and twenty four thousand nine hundred students' record while three hundred and seventy eight records were sampled as according to Research Advisor (2006) a sample of 378 is sufficient enough for a population of not more than twenty five thousand. A self – designed Proformer titled “Entry Qualification and Academic Performance in Faculty of Education Template (EQAPSFET)” was used to collect necessary data and was analysed using frequency, percentage count were used to answer the research questions while Pearson Product Moment Correlation Coefficient (PPMC) was used to test the null hypotheses. Findings of the study revealed that there is indeed a relationship between entry qualifications of students admitted through UTME, DE and their academic performance in Faculties of education of Federal Universities in the North – East, Nigeria and the null hypotheses were also rejected. Based on the findings of the study, it was therefore recommended that Universities in the North – East, Nigeria should give priorities to admitting DE candidates than the UTME into Teacher education as they are more prepared to study Teacher education having obtained NCE Certification at the Colleges of Education before applying for admission in the University. Governments in the North – East, Nigeria are also encouraged to introduce special bursary programme to prospective teachers as such may encourage to apply and qualify for teaching profession where a sound teacher that is knowledgeable in content and pedagogy can be produced.

Keywords: Entry Qualification, Academic Performance, North – East, Nigeria.

Introduction

Teacher education is the process of producing sound and qualified teachers through professional training within a regulation time. In Osuji's (2009) opinion, teacher education is the professional education and specialized training given to teachers towards the acquisition of knowledge,

attitudes and skills considered necessary to make them efficient and effective in the discharge of their work and in developing as well as nurturing the young ones into responsible and productive citizens. It is through teacher education that manpower development, training on prudent use and effective utilization and sustenance of resources of a nation. It is therefore not surprising that nations all over the world anchor their socio – economic development as well as their human capital development on educational development whether scientific or technological. The success of teaching and learning depend on the teacher as according to Ogunyika, Okeke and Adedoyin (2015) teachers are central to the socio – economic development of the nation and remain major actors in the educational policy implementation because even if a good policy is formulated and sufficient fund is allocated for the implementation, it can only remain a mirage without teachers. The goal of teacher education as captured in the National Policy on Education shall be to:

- a. produce highly motivated, conscientious and efficient classroom teacher for all levels of our educational system;
- b. encourage further, the spirit of equity and creativity in teachers;
- c. help teachers to fit into social life of a community and society at large and enhance their commitment to national goals;
- d. provide teachers with the intellectual and professional background adequate for their assignment and make them adaptable to changing situation; and
- e. enhance teachers' commitment to the teaching profession (FGN,2012)

Entry in to teacher education programme in Nigeria is categorized into Pre – Service and In – Service, both at the tertiary institutions but with a varying nomenclature and specialization. While the pre – service teacher education is being provided by higher institution of learning such as university faculties of education, schools of education at the Polytechnics, and Colleges of Education. The in – service programme of teacher education is provided by Institutes of Education of universities, the National Teachers Institute (NTI) and National Open Universities of Nigeria (NOUN). Except for the universities, certificates obtainable at the colleges of education and the national teachers' institute are Nigeria Certificate in Education (NCE) and Post – Graduate Diploma in Education (PGDE); and those obtainable in the universities are either

Bachelor of Education (B. Ed) or Bachelor of Science in Education (BSc. Ed); Master of Education (M. Ed), Doctor of Philosophy in Education (Ph. D in Education) and (PGDE) respectively. Okebukola, in Mohammed (2019) was of the view that the quality of teachers can be determined by who are attracted to the profession and the training they undergo because the expectation of the community on teachers are to be sufficiently knowledgeable in their area of specialization as well as proficiency in pedagogy. Thus, it is expedient to investigate the relationship between students' entry qualification in the modes of entry and their academic performance in Faculties of Education in Federal Universities in North – east, Nigeria.

Statement of the Problem

There appears to shown a clear decline in quality of graduate output of Faculties of Education Wile other discipline seem to be performing better in our universities especially in the North – East. Nigeria. Every faculty in the university has its own entry qualification and entry mode, the entry qualification into Faculty of Education appears to be low compared to other disciplines if closely observed by the recent Cut – Off marks earmarked by the Joint Admission and Matriculation Board (JAMB) for every candidate aspiring to be admitted into any tertiary institution in Nigeria This may have been the reason why students who could not make it in their chosen career end up studying teacher and this mostly make them struggle in the academic performance or even results in low quality graduate output. The Federal government clearly stated that no nation can rise above the quality of its teachers as such there is need for policy makers to review the quality of candidates to be accepted in to Faculties of Education for better quality output. The study therefore investigated the relationship between entry qualification and students' academic performance in Faculties of education of Federal Universities in the North – East of Nigeria.

Objectives of the Study

The objectives of this study were to examine the relationship between:

1. Entry qualification and students' academic performance by UTME candidates in faculties of education in Federal Universities of education in North – East, Nigeria; and
2. Entry qualification and students' academic performance by DE candidates in faculties of education, in Federal Universities in North – East, Nigeria.

Research Questions

The following research questions are raised to guide the study:

1. What is the relationship between entry qualification of UTME candidates and students' academic performance in faculties of education, in Federal Universities in North – East, Nigeria?;
2. What is the relationship between entry qualification of DE candidates and students' academic performance in faculties of education, in Federal Universities in North – East, Nigeria?.

Hypotheses

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

- HO₁:** There was no significant performance between entry qualification of UTME candidates and students' academic performance in Faculties of Education, in Federal Universities in North – East, Nigeria;
- HO₂:** There was no significant relationship between entry qualification of DE candidates and students' academic performance in Faculties of Education, in Federal Universities in North – East, Nigeria;

Literature Review

Entry qualification or entry behaviour according to Nakhanu in Njoroge, Midwa and Kiweu (2023) is a factor affecting the coverage of syllabus as she also opined that if a student, enters secondary school with low entry qualification there is every likelihood that low academic performance is the result and delay in syllabus coverage. This, as observed by Njoroge, Midwa and Kiweu (2023) is necessary because after every evaluation given to students, three sets of results are likely to emerge which are below average, average and above average. For students with below average grade, remediation learning is given while the average are given enrichment learning and the above average students are given accelerated learning. Any candidate aspiring to be admitted into any tertiary institution such a candidate must satisfy the minimum entry requirements where applicable to admission regulations. The candidate is expected to pass through secondary school from year 1 – 6 sit for and pass the Senior Secondary School Examination (SSCE). University, as a tertiary institution has two modes of entry and any one

chosen by a candidate has a requirements to qualify such a candidate for admission. These modes of entry are either through the UTME entry which if qualified, a candidate will be admitted into 100 level in this case one must possess enough number of credit in SSCE and scored enough points in the Unified Tertiary Matriculation Examination (UTME) before gaining admission or the Direct Entry (DE) which a candidate gains admission into 200 level after possession of some basic requirements like Diploma, NCE or any other certificate as may be deemed qualified. Okpoko, Ajagbe, Aderonmu Izama and Oluwatoyin (2014) opined that every university autonomously pegs its own entry requirements for admission processes aside from the general cut off marks given by the Joint Admission and Matriculation Examination Board (JAMB) therefore uniqueness exist between universities in terms of entry qualification in addition to the post – UTME examination some of the universities adopted.

Students' academic performance on the other hand is the level of students' understanding and comprehension of what he/she is taught by the teacher. Akale in Olanipekun (2013) opined that students' academic performance connotes the level of knowledge, skills and accomplishments of students in their endeavor while Brown also in Olanipekun (2013) referred to academic performance as the students' ability to deal with their studies and how they cope with the rigors of accomplishment of different tasks given to them by their teachers. Although students' academic performance appears very complex to predict, it may however be associated with entry qualification and interest of the learner in the area of discipline being studied subject to investigation. Okonkwo, still in Olanipekun (2013) was of the opinion that discrepancies often rise in students' entry qualification and their academic achievements in tertiary institutions as such it becomes very difficult to predict students' final performance using entry qualification due to the prevalence of examination malpractice being recorded nationwide in their senior secondary certificate examination (SSCE) being conducted by West African Examination Council (WAEC), National Examination Council of Nigeria (NECO) or Joint Admission and Matriculation Board (JAMB) respectively.

Adejoke, Temitayo and Mobayaje (2018) also assessed the impact of students' result in Post – UTME examination on their academic performance with specific focus on Tai Solarin University of Education, Ijebu – Ode, Ogun State and found out that there is significant relationship between students post – UTME entry examination and students' academic performance, there

was also significant difference between students' UTME result and their post – UTME screening scores. Based on the findings therefore, the researchers recommended that universities should continue with the post – UTME examination as this will help in encouraging hardworking and intelligent students in their studies for their efforts to crowned with a brilliant performance.

Similarly, Kehinde and Ozioma (2023) conducted a study to investigate the entry qualifications of Direct Entry students and their academic achievements in Faculty of Education, University of Benin. Findings of the study revealed that there is a significant difference in achievements of DE students with respect to their entry qualifications. Based on the findings, the researcher recommended among other things that students with certificate entry qualification need monitoring and mentoring to ensure better academic performance. Another study was also conducted by Mohammed, Abel and Hananiya (2019) where they investigated the relationship between entry qualification and students' academic achievement in Gombe State Tertiary Institutions, Nigeria. The findings of the study revealed that there is significant relationship between students' entry qualification and their academic achievements in Gombe State tertiary institutions. The researchers recommended for the need to properly monitor and mentor students admitted into tertiary institutions in the state for a better academic performance and emphases should be place on the use of technology such as e – learning on new students with different entry qualification as it will improve their academic performance as well. Again, Babalola (2015) established that there was no significant relationship between entry qualification (O level Chemistry) and the academic performance of advance level Chemistry in the basic programme of the university when they investigated the relationship between entry qualification and academic performance in advanced level Chemistry at the School of Basic and Remedial Studies, Yobe State University, Damaturu.

Theoretical Framework

Vroom's Expectancy theory of (1964) was used as theoretical framework for this study.

This theory postulates that alternatives are always evaluated in terms of valued outcomes and likelihood that such valued outcomes will occur if a given alternative is chosen.

The theory involves three key components:

1. Expectancy: The belief that effort will lead to performance (i.e. "If I study hard, I will get good grades");

2. Instrumentality: The belief that performance will lead to outcome (“ If I get good grades, I will get a good job”); and
3. Valence: That the value of attractiveness of the outcome (“i.e. Getting a good job is important to me”).

However, entry qualification of a student is also related to factors such as prior academic achievements, self – efficacy and motivation of a student. Educational managers and parents/guardians alike should endeavor to encourage students to set high expectations for themselves, emphasizing the connection between effort and performance. They should also help students understand the importance of academic performance, highlighting good grades and desirable outcomes. Educational Administrators are also urged to foster posture of academic culture that values and recognizes academic achievement in enhancing the values of academic success.

Methodology

The design used for this study was correlational Design as opined by Osuala (2005) and Kpee (2015) that Correlational Design helps to determine the direction, strength and relationship between different variables where useful information about an event is collected before arriving at a valid conclusion about the event. Population of the study comprised of all the (9) Federal Universities are located in the North – East, Nigeria namely University of Maiduguri, Nigerian Army University, Biu, Modibbo Adama University, Yola, Abubakar Tafawa Balewa University of Technology, Bauchi, Federal University Gashua, Yobe State, Federal University Kashere, Gombe, Federal University, Wukari, Taraba State, Federal University of Agriculture, Mubi, Adamawa state, and Federal University of Health Science, Azare. However, only five of the Universities have Faculties of Education and running Teacher Education for at least five consecutive sessions and these are University of Maiduguri, Modibbo Adama University Yola, Abubakar Tafawa Balewa University Bauchi, Federal University Kashere, and Federal University Wukari. The total population is therefore twenty four thousand nine hundred students record where only three hundred and seventy eight were sampled based on Research Advisor’s recommendation that for a population of not more than twenty five thousand, a sample of three hundred and seventy eight is sufficient.

The instrument used for this study was a self – structured Proformer developed by the researcher titled “Entry Qualification and Academic Performance of Students in Faculty of Education Template” (EQAPSFET) to collect data on students’ entry qualifications both DE and UTME modes as well as their performance during the academic sessions in a form Cumulative Grade Point Average (CGPA) from the affected faculties of the universities. The Proformer is structured into eight (8) columns and thirty (30) rows, while the columns represent serial number, Registration number of students, their entry qualification at the point of admission either DE or UTME and their academic performance or (CGPA) for four academic sessions respectively. The CGPA collected is their final result because most of the result released are provisional while some results are withheld due to some examination mal practice or other reason. An introductory letter was obtained by the researcher from the Head of Department, Department of Education, Yobe state University, Damaturu addressed to the affected Heads of Departments of the respective universities in question requesting for information on students’ academic records studying Teacher Education. Information such as Registration numbers, entry qualifications and academic performance is required to enable the researcher analyse and verify if indeed a relationship exist between students’ entry qualification and their academic performance in teacher education at the degree level. The data needed was successfully collected and analysed using both descriptive and inferential statistics. For the descriptive statistics frequency and percentage count were used to answer the research questions while the inferential statistics was used to test the hypotheses using Pearson Product Moment Correlation Coefficient (PPMC) to ascertain the relationship.

Data Presentation and Analysis

The data is presented, Analysed and Interpreted.

Research Question One: What is the relationship between entry qualifications of UTME students and their academic performance in Faculties of Education of Federal Universities in the North – East of Nigeria?

Table 1: Relationship between Entry Qualification of UTME Candidate and Students' Academic Performance in Faculties of Education

S/N	ACAD SESSIN	ENRTY QUALIFICATION	ACADEMIC PERFORMANCE
1.	2017/2018	180	64
2.	2018/2019	170	53
3.	2019/2020	160	50
4.	2020/2021	150	40
TOTAL		207 (100%)	207 (100%)

Source: Field Work (2025)

Information on Table 1 is showing the pattern of admission into Teacher Education by students through the Unified Tertiary Matriculation Examination (UTME) by Faculties of Education of Federal Universities in the North – East. Out of three hundred and seventy eight 378 sampled students' record for the period under review, only two hundred and seven students were admitted through the UTME mode out of which sixty four 64 (30.91%)was the highest number of admission in 2017/2018 academic session. 2020/2021 academic session appears to be the year with lowest number of admission through the mode as it recorded only forty 40 number representing (19.34%) of students. The trend kept decreasing From 2017/2018 to 2020/2021 as in 2018/2019 academic session admission decrease to fifty three 53 (25.69%) UTME admission. It also decreased the following academic session where it decreased to fifty 50 (24.15%).

For the Academic Performance, students with Second Class Upper Division appear to have the highest number of One hundred and Seventeen 117 (56.52%) while those with First Class degree are the least in number which is only Twenty 20 (9.91%). Those who graduated with Second Class Lower Division are forty 40 in number (19.31%) while the Third Class graduates are Thirty 30 in number (14.57%).

Research Question Two: What is the relationship between entry qualification of DE candidates and students' academic performance in Faculties of Education of Federal University in North – East zone, Nigeria?

Table 2: Relationship between Entry Qualification of Direct Entry (DE) Candidate and Students' Academic Performance in Faculties of Education

S/N	ACAD SESSIN	ENRTY QUALIFICATION	ACADEMIC PERFORMANCE (%)				
1.	2017/2018	Dist.	55	10.10%	First Class	27	15.80%
2.	2018/2019	Upper	45	26.32%	Second Class Upper	63	36.84%
3.	2019/2020	Lower	38	22.22%	Second Class Lower	41	23.98%
4.	2020/2021	Merit	33	19.30%	Third Class	40	23.35%
TOTAL			171 (100%)			171	(100%)

Source: Field Work (2025)

Table 2 presents the information on the relationship between entry qualifications of DE admitted students and their academic performance in Faculties of Education of Federal Universities in the North – East of Nigeria. The highest number of students to be admitted through DE have Distinction in their Nigeria Certificate in Education (NCE) as fifty five (55) of them out of one hundred and seventy one got admitted representing (32.16%) in 2017/2018 academic session while the lowest number of admitted students is through the DE is thirty three (33) with Merit representing 19.30% in 2020/2021 academic session. Those with Upper Credit are the second highest in number forty five (45) 26.32% admitted in 2018/2019 session and followed by those with Lower Credit certificates numbering about thirty eight (38) of them which is equivalent to 22.22% in 2019/2020 academic session.

In terms Academic Performance the number of graduates is those who graduated with Second Class Upper Credit which is about Sixty three 63 (26,84%) while students who graduated with First class degree and the least with their number is Twenty seven 27 (15.80%). Forty one 41 students equivalent to (23.98%) earned Second Class Lower Division while Forty 40 (23.38%) students graduated with Third Class degree respectively.

HO₁: There is no significant relationship between entry qualification of UTME candidates and students' academic performance in Faculties of Education of Federal Universities in North – East zone, Nigeria.

TABLE 3: TWO-tailed Result of the relationship between Entry Qualification of UTME candidates and Students' Academic Performance in Faculties of Education of Federal Universities in North – East Zone of Nigeria

Variable	N	Mean	d.f	S.D	p- Corr.	Sig. @0.05	Decision
UTME	207	51.75		8.93246	Sig (2 tailed)		Reject null
			205			0.001	hypothesis
Acad. Perf.	207	51.75		1.13144			

P<0.05 level of significance Source: Field Work (2025)

Result on Table 3 present the two – tailed result of the relationship between entry qualification of UTME candidates and students' academic performance in Faculties of Education of Federal Universities in North – East zone of Nigeria. The degree of freedom d.f was obtained at 205 after subtracting 2 from the number of students admitted through the UTME which is 207. The p – value of 0.001 is less than level of significance ($p < 0.05$). The null hypothesis which states that there is no significant relationship between entry qualifications of UMTE candidates and students' academic performance in Faculties of Education of Federal Universities in North – East zone, Nigeria is hereby rejected. In other words relationship indeed exist between entry qualification of UMTE candidate and there academic performance.

HO2: There is no significant relationship between entry qualification of DE candidates and students' academic performance in Faculties of Education of Federal Universities in North – East zone, Nigeria.

TABLE 4: TWO-tailed Result of the relationship between Entry Qualification of DE candidates and Students' Academic Performance in Faculties of Education of Federal Universities in North – East Zone of Nigeria

Variable	N	Mean	d.f	S.D	p – Corr.	Sig. @0.05	Decision
DE	171	42.75		1.08828	Sig (2 tailed)		Reject null
			169			0.001	hypothesis
Acad. Perf.	171	42.75		1.02954			

P<0.05 level of significance Source: Field Work (2025)

Table 4 presents the two – tailed result of the relationship between entry qualifications of DE candidates and students' academic performance in Faculties of Education of Federal Universities in North – East Nigeria. The degree of freedom of 169 was obtained by subtracting 2 from the number of students admitted through DE which is 171, The p – value of 0.01 is obtained which is

less than the level of significance ($p < 0.005$) therefore the null hypothesis which state that there is no significant relationship between DE candidates and students' academic performance is hereby rejected. In other words a relationship exist between the entry qualification of DE candidates and the students' academic performance in Faculties of Education of Federal Universities in North – East zone of Nigeria.

Conclusion

Premised on the findings of the study, it was concluded that there is significant relationship between entry qualification of students' modes of entry and their academic performance in Faculties of Education in Federal Universities in North – East, Nigeria.

Recommendations

It was therefore recommended that:

1. Universities in the North – East should prioritize the issuance of admission to the DE candidates in to Teacher Education as they most likely have the knowledge through their NCE training or serving teachers.
2. Governments in the North – East, are encouraged to introduce special bursary allowance to students of Teacher Education in the Universities as well as provision of automatic employment for the successfully graduated students as this will serve as motivation to candidates applying for Teacher Education in the Universities.

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LABORATORY METHOD AS PARADIGM SHIFT IN TEACHING CHEMISTRY IN SECONDARY SCHOOLS IN JIGAWA STATE, NIGERIA: PROSPECTS AND CHALLENGES

BY

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ABSTRACT

This paper titled laboratory method as paradigm shift in teaching chemistry in secondary schools in Jigawa state: prospects and challenges is aimed at looking into the critical issues on laboratory teaching method as a developmental teaching approach in secondary schools considering the following headings; concept of chemistry as a science subject, relevance of chemistry as a science subject in secondary schools, concept of laboratory, teaching in the 21st century and the paradigm shift, concept of teaching methods, relevance of laboratory method in teaching chemistry, and the challenges of laboratory teaching method. It was concluded that the place of laboratory method in teaching chemistry must be well pronounced and supported in order to produce students with sound chemistry background for national development. The paper recommends that; government should provide chemistry laboratories in all the school teaching chemistry; regular training should be provided to chemistry teachers on teaching methodology; laboratory apparatus and materials should be supplied to the schools for laboratory activities; professional teachers should be employed to teach chemistry in schools; and supervision and monitoring of laboratory work should be done by the government agencies, school management and other stakeholders on regular basis.

Keywords: Chemistry, Laboratory, and Teaching method.

Introduction

Science education is an important aspect of knowledge in the 21st century era. Education as a continued process, 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 of an individual, community or country at large is science education. Therefore, learning science subjects like chemistry, biology, and physics at the secondary school level served as the foundation which prepare students to take a career in science. This is the basis of producing science teachers, medical doctors, engineers, laboratory technologies, and so forth

who are expected to contribute their quotas towards the development of their society. It seems that only few teachers are committed to teaching and learning with fashion for the business while the majority use traditional teaching methods (lecture or conventional method).

The National Policy on Education (NPE) is the major document that guides and gear the educational activities in Jigawa and Nigeria at large. 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 and retention among chemistry students.

Furthermore, the National Policy on Education 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 schools of Jigawa state under the control and supervision of the Ministry of Higher Education. Therefore chemistry, as one of the science subjects in secondary schools of Jigawa state, has an important role to play in changing the society to a better place scientifically and technologically.

Jigawa state is considered as less educationally developed state (Amadike, 2022). The state has a great number of senior secondary schools that teaches chemistry as a subject, some with standard/functional chemistry laboratories, while others use combined science laboratories to learn chemistry. The state has a total number of ten (10) education zones which are responsible for overseeing the activities of senior secondary schools that offer chemistry as a subject, and the total number of secondary schools that teach science subjects (chemistry inclusive) are one hundred and forty-one (141) (Jigawa Education Resource Agency, 2025). Some of the senior

secondary schools in the state are conventional schools where science subjects are offered to science students while arts related subjects offered to art students. In the same vein, there are special schools like science secondary schools, commercial schools, school of the talented and gifted etc. Chemistry is studied as a pre-requisite subject for preparing students to take a career in science/technology related courses in tertiary institutions. The schools that offered chemistry in the state, have served in the production of many scientists/technologists in Jigawa state and beyond.

Therefore, for teaching process to occur successfully, the teacher needs to consider what is referred to as the five Cs of teaching which are; effective communication, critical thinking, creativity, collaboration, and cultural competence. By integrating the 5 Cs of teaching, teachers can use their teaching skills to create dynamic and inclusive learning environments that empower students to succeed academically and thrive as lifelong learners (E-Schools News, 2024). Teachers with a better understanding of the 5 Cs, can effectively and successfully apply the appropriate teaching method(s) at the appropriate time. Effective teaching methods in secondary schools encompass a variety of approaches tailored to engage students and promote meaningful learning experiences.

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 –centred 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 to match the 21st century education.

Concept of Chemistry as a Science Subject

The Basic concepts of chemistry according to national chemistry curriculum falls under themes like that of the chemical world, chemistry and environment, chemistry and industry and so forth. These concepts keep on re-occurring at the various level of learning chemistry at the senior

secondary schools. Under the theme “chemistry and the environment” for instance, concepts like that of standard separation techniques for mixtures, acid, bases and salts and their reactions, water, air, and so forth are among the concepts of chemistry contained in the curriculum. 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.

Researchers reported negative attitude of students generally to science subjects such as Chemistry, they opined that the lack of interest in Chemistry subject is majorly as a result of the content of the syllabus (Yusuf & Ali, 2012). Also, secondary school students perceived Chemistry syllabus as being too wide and involving too many calculations and Chemistry as being too abstract (Uchegbu, et-al, 2016). Moreover, over the years the pass rates in Chemistry for most part have fallen below 50% (WAEC, 2015). Therefore, chemistry guide and support students to understand the world around them. Chemistry deals with the study of both the concrete and the abstract constituents of the natural world. Students usually understand the concept of chemistry for a better performance in chemistry at secondary schools level in Jigawa state.

Conversely, chemistry needs to be taught in senior secondary schools in Nigeria to support the students to become nation-builders. The National Policy on Education stresses that education should prepare students to fully be integrated into their community and nation with global capabilities (FRN, 2013). Therefore, chemistry as a subject in secondary school should expose learners in supporting their society and the nation at large in the areas of health-related issues and engineering for better national development.

Relevance of Chemistry as a Science Subject in Secondary Schools

Chemistry is one of the core sciences subjects in Nigerian secondary school education. Any student who wants to work or take a career in science-related disciplines should study chemistry at the secondary education level. The National Policy on Education stresses that senior secondary education should prepare students for the world of work, wealth creation and entrepreneurship. The policy further state that chemistry education provides manpower in the applied sciences at sub-professional grade (FRN, 2013). This is a clear indication that studying subjects like chemistry at post basic education level create jobs opportunities and prepare students to take a career in sciences.

Chemistry is considered a core science subject that can permeate several areas of knowledge, such as engineering, health, astronomy, biology, and geology, among others. Chemistry is one of the curriculum components that can promote the intellectual development of the students through the search to understand nature and its transformations (Quadros, Silva, Silva & Andrade 2011). The chemistry disciplines in secondary education can afford unique opportunities to students understand the world from the “chemical” viewpoint and to help them subject learn important concepts (Disciplines, 2024). Chemistry education in secondary schools serves as a cornerstone for students to grasp fundamental concepts and principles in chemistry. It encompasses the study of the properties, composition, and behavior of matter, as well as the changes it undergoes during chemical reactions. The importance of chemistry education in secondary schools cannot be overstated. It provides students with a strong foundation in scientific inquiry, critical thinking, and problem-solving skills. Chemistry cultivates a deeper understanding of the natural world and its underlying mechanisms, preparing students for future academic pursuits and careers in STEM fields. By studying chemistry in secondary schools, students gain insights into the role of chemistry in addressing global challenges and shaping the future of society. Olufunmilayo and Oduduwa, (2018) opined that Nigeria needs to produce more graduates in science and technology fields who are competent and have been adequately grilled with relevant curriculum tailored towards innovative and sustainable developmental goals in their respective fields of Science and Technology. Chemistry is a core science subject taught in the secondary school as prerequisite course for admission into tertiary institutions in science and technology fields.

Therefore, learning chemistry in secondary schools prepare students to understand courses like pharmacy, medicine, food science technology, geology, agriculture etc.

Chemistry teachers need to be professional and skillful in teaching the subject at secondary school level in order to attract students' interest in learning the subject. The use of appropriate instructional methods is one of the important aspects of attracting more students to learn chemistry in secondary schools. Teachers should teach chemistry with passion in order to arouse learners' interest thereby making the subject relevant and attractive to students right from secondary school level. According to Edomwonyi-Out & Avaa, (2011), there is a significant positive relationship between interest and effort, if the students have interest in the subject, they would make effort to perform well in the subject. There is therefore a need to re-awaken the interest of secondary school students in chemistry to secure a solid foundation for vocations like health fields, pharmaceuticals, petroleum and petrochemical industries, agriculture, food and chemical engineering and so on.

Concept of Laboratory

Laboratory is a place where science experiments take place. It usually looks like a room with walls and a roof housing materials and equipment for scientific activities. Laboratory is referred to as the physical facility designed and equipped for carrying out scientific experiments for students' practice, teaching or research (Bellingham, 2007). Bellingham further puts that laboratory room is a special instructional place designed or provided with special built-in equipment for learners' participation in learning activities involving scientific or applied experimentation. It is a room or building equipped for scientific research and for conducting experiments especially under controlled condition. Laboratory as a room must be equipped with functioning facilities, running water, electricity, enough space for movement and located in a serene environment for conducting experiment.

A laboratory (colloquially lab) is a facility that provides controlled conditions in which scientific or technological research, experiments, and measurement may be performed. Laboratories are found in a variety of settings such as schools, universities, privately owned research institutions, corporate research and testing facilities, government regulatory and forensic investigation centres, physicians' offices, clinics, hospitals, regional and national referral centres, and even

occasionally personal residences (Bertholf, 2017). Laboratory building and facilities are part of scientific endeavours with aid success in science experiments.

In science, laboratory work is considerably important because they provide the opportunity for students to perform various hands-on activities. Laboratory work is an essential part of scientific process. Scientific skills, process, knowledge and most importantly curiosity built in scientist are achieved through laboratory activities. Laboratory method is superior in teaching manual skills and in increasing understanding of the apparatus involved. Laboratory work arouse students' interest in science and also help them in proper handling of the laboratory apparatus and materials. In secondary school chemistry, laboratory skills involve things like dilution, acid base titrations and preparation of chemicals solutions, quantitative work which includes test, observation and recording of inferences (Umar, 2018). Laboratory buildings are therefore important in supporting teaching and learning of chemistry in secondary schools in Jigawa state.

21st Century Paradigm Shift in Teaching and Learning

Human beings as the greatest creatures on earth, are always in the quest of making the world a better place to live. This quest of a change is cut across all human endeavours including teaching and learning. The 21st century era has come with a lot of development scientifically, socially and technologically. These changes are noticeable in Information and Communication Technologies (ICTs) and ICTs related activities the world over. These great innovations have influenced the way we think and act.

ICT is profoundly shaping the 21st century by transforming how we communicate, learn, and interact with the world. It's a catalyst for change in education, businesses, and daily life, driving innovation and connecting individuals globally. Suleiman, Kaur. Kuliya and Aliyu (2021), opined that ICT is an irreplaceable piece of modern world. It has changed several parts of individuals' life styles and even the community settings. Thinking about such fields as teaching, learning, transportation, medicine, banking etc. In fact, the inclusion of ICT in education has greatly changed the way we teach.

Over the years, teaching and learning is more or less dominated by a traditional approach popularly called the conventional or the lecture method. In this method or approach, the teacher is the master and placed highly at the centre of teaching and learning process. The lecture method gives the teacher chances to expose students to unpublished or not readily available

material, the students play a passive role of listening or watching which may hinder learning, and as such it called teacher centred (Zakirman, Lufri & Khairani, 2019).

However, teaching methods have changed over the years to a greater height due to improvement in research/technology and the commitments of education stakeholders the world over. From the end of the 19th to 20th century a lot of paradigm shift in teaching and learning took place in the world of teacher education. These pedagogical shifts give birth to modern and developmental learner centred teaching methods. These methods include; enquiry method, cooperative method, field trip, Computer Aided Instruction (CAI), online method, laboratory method, experimental method, problem solving, discovery method, games and simulations methods, play-way method etc. In the same vein, the 21st century come with a lot of innovations which lead to the fifth generation of computers or the Artificial intelligence (AI). The AI changes the way we think and the way we act in regards to teaching and learning. Technological innovations like AI, are concerned with a new opportunity for experimental pedagogical development in schools especially in teaching and learning of sciences (Di Palma, Rosa & Ascione, 2019). The experimental pedagogies employ scientific methods to investigate teaching and learning, aiming to improve educational practices by testing different approaches and measuring their effectiveness. In the global trend of AI technology, the laboratory method is among the popular teaching methods that are being used by many teachers as it encourages hands-on activities. Hands-on activities are activities that require movement, talking, and listening.

Concept of Teaching Methods

In every teaching and learning situation, there must be a synergy between what to teach, who to teach, what to use in the teaching and learning process and how to teach. How to teach (the teaching method or strategy), is what make these variables work together effectively. The method of teaching is like the linkage or rather the bond that hold the process together. In teaching and learning the concept of strategy, method and technique are often used interchangeably, even though strategy has a wider coverage. Teaching methods is seen as tools, and devices through which it has to be possible to assess, apply, plan the educational process, and provide the students with knowledge in order to reach the educational goals. It also represents the intellectual practices and the process through which the development of the educational process (Elhashash, 2022). In addition to improving the performance of the teacher,

teaching methods can help the students to develop their capabilities, increase their level of understanding, and save their effort and time.

Alake (2015), sees teaching method as a set of unique activities which the teachers employ to implement a particular teaching method it is also a specific way of presenting instructional materials. Instructional methods are techniques teachers use to help students become independent, strategic learners (Alberta Learning, 2017). These become learning strategies when students independently select the appropriate ones and use them effectively to accomplish tasks or meet goals. The combination of techniques and methods that a teacher can adopt to meet the various learning objectives are regarded as instructional strategies. These strategies help students to walk on the path of independent learning and become strategic learners.

A teaching method is a set of principles and methods used by teachers to enable students' learning. These strategies are determined partly by the subject matter to be taught, partly by the relative expertise of the learners, and partly by constraints caused by the learning environment. For a particular teaching method to be appropriate and efficient it has to take into account the learner, the nature of the subject matter, and the type of learning it is supposed to bring about (Westwood, 2008). Teaching method should either be teacher-centred or learner-centred approach. The former allows the teacher to dominate the teaching and learning process where the learner remain as passive listener, and the later put the learner at the centre of the teaching and learning activities where the teacher acts as a facilitator or organizer. The approaches for teaching can be broadly classified into teacher-centered and student-centered, but in practice teachers will often adapt instruction by moving back and forth between these methodologies depending on learner prior knowledge, learner expertise, and the desired learning objectives (Bokhove & Campbell, 2020). The different teaching methods are categorized in relation to the two approaches, with the most popular and common one called the lecture method or conventional method. Other teaching methods include; demonstration, discussion, enquiry, problem-solving, field-trip, cooperative, Computer Aided Instruction, gamification, online, simulation game, play-way, activity-based, laboratory etc. There is no one best method of teaching, and teacher easily swing between one teaching method and the other depending on the teaching and learning situation.

Relevance of Laboratory Method in Teaching Chemistry

The laboratory method encourages 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. Alake (2015), opined that laboratory method is empirical learning through the direct involvement of students. The laboratory method is the instructional strategy 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 interact with learning materials under the guidance of the teacher. The concepts of laboratory teaching strategy seek to improve the teaching and learning of mathematics. According to Onuoha cited in Salami and Sadiq (2021), teaching science, technology and mathematics without laboratories and workshops in which these subjects are practiced will never give a thorough grasps of the principles of these subjects. It was considered essential because it provides training in observation supply detailed information and arouses pupils / student's interest. It is also a good method for active involvement of students in the learning process and lightly motivating the students then discussion / expository method which make the students passive recipient of information. The teaching of science should deal with process and not just confine to transferring knowledge from the mind of the teacher to notebooks of students through the tip of a pen and for such a phenomenon change in chemistry teaching, a right ambience is required and it is definitely mathematics laboratory. The laboratory approach proposes that the experiment origin of mathematics should be fully recognized. This

means that the students should be left to feel the significance of learning chemistry through some material. scientific processes can be achieved using laboratory method as a learning model.

Laboratory method stimulates the acquisition of both manipulative and cognitive skills by learners (Hofstein, 2017). Studies have been critically and extensively reviewed by scientist like Blooser, Hoftstein and Lunetta cited in (Goje, 2014). They opined that history and research finding proved that laboratory has been regarded as a medium of instruction in secondary school science teaching and learning over the years. Later, Tobin in Goje (2014) prepared a follow up synthesis of research on the effectiveness of teaching and learning in the science laboratory. He suggested that meaningful learning is possible in the laboratory if students are given opportunities to manipulate materials and apparatus in a suitable environment to construct their knowledge of phenomena and related scientific concepts. This will help the students to perform greatly and be able to retain basic scientific concepts.

In related development, Hodson (2005) collected information about the priorities that Ontario institute for studies in education (University of Toronto) have for practical work revealed the five top ranking reasons cited by secondary school teachers and these include; to assist concept acquisition and development; to motivate by stimulating interest and enjoyment; to teach laboratory skills; to give insight into scientific method and to develop expertise in using it; and to develop certain scientific attitudes such as curiosity, open-mindedness, objectivity and willingness to suspend judgement. The need for the implementation of laboratory Method in the science, most especially chemistry become imperative due to the fact that this model encourages hands –on activities. The strategy involves students working individually or in groups, while interacting with materials to learn scientific skills and concepts. In the same vein, Hofstein and Lunetta (2004) conducted another analytical review of the literature and concluded that teachers should understand what students in the laboratory, how they learn and the appropriate method of assessment.

The Challenges of Using Laboratory Method

Laboratory method is an activity-based method where both cognitive, affective and psychomotor skills are developed during teaching and learning. To achieve these domains of learning, a lot need to be done. A lot of challenges can be observed, and some of the noticeable ones are highlighted by this paper as listed:

1. Lack of Laboratory building in schools: Some schools are without laboratory buildings, while others are managing a multi-purpose laboratory in Jigawa state.
2. Lack of teacher development programmes on teaching methods: Teachers are not supported to attend training on the use of laboratories and the application of laboratory method in teaching chemistry in Jigawa state.
3. Lack of materials and equipment: The existing Laboratories in Jigawa state are without Laboratory reagents and equipment or sometimes expired chemicals and broken glass wares.
4. Lack of qualified teachers: Professional, registered and committed teachers are not enough in the schools.
5. Inadequate monitoring and supervision: Supervision and monitoring in the use of laboratories in teaching chemistry is not regular in secondary schools of Jigawa state.

Conclusion

The search for new teaching method has become the order of the day in the 21st century education. Chemistry as a basic science subject, need to be taught very well in order to prepare the students for taking a career in science in order to contribute their quota towards the development of their community. Chemistry teachers in secondary schools in Jigawa state need to be supported by the government, school management and even the members of the society to carry out their roles in the teaching and learning of chemistry in secondary schools. The place of laboratory method in teaching chemistry must be well pronounced and supported in order to produce students with sound chemistry background for national development. Laboratory method therefore, support and encourage students to learn chemistry in a way and environment different from conventional classroom. There is a paradigm shift in teaching and learning of chemistry as a physical science over the years from the traditional method to the modern trend of student-centred approach in the state. Therefore, laboratory method is one of the student-centred approach employed in teaching chemistry. It is a practical as well as activity-based strategy to learning of chemistry, and the method is learner-centred friendly.

Recommendations

To encourage and support the use of laboratory method in teaching chemistry in Jigawa state, the following recommendations were made:

1. Government should provide chemistry laboratories in all the school teaching chemistry in Jigawa state.
2. Regular training should be provided to chemistry teachers on teaching methodology and the use of laboratory in Jigawa state.
3. Laboratory apparatus and materials should be supplied to the schools for laboratory activities.
4. Professional teachers should be employed to teach chemistry in schools.
5. Supervision and monitoring of laboratory work should be done by the government agencies, school management and other stakeholders on regular basis.
6. Science teachers should develop strategies, protocols and resources for teaching in the laboratory.

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**INFLUENCE OF TEACHERS' QUALIFICATION ON THE ACADEMIC
ACHIEVEMENT OF PUPILS IN PRIMARY SCHOOLS
BY**

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ABSTRACT

This study examined the influence of teacher qualifications on the academic achievement of pupils in primary schools. Teacher qualification encompasses formal education levels, professional certification, subject matter expertise, pedagogical competence, and teaching experience. The study examines how these qualification components directly impact student learning outcomes and educational quality. Drawing from Human Capital Theory, the study recognizes teachers as valuable human resources whose investment in education and training translates to enhanced classroom effectiveness and improved students' performance. The conceptual framework explores teacher qualification through multiple dimensions including academic credentials, structured professional training programs, official certification, teaching experience, and continuous professional development. Educational achievement is defined as measurable students' performance assessed through grades. The study reviews empirical evidence from recent research conducted, revealing consistent positive correlations between teacher qualifications and students' academic outcomes. The study indicates that highly qualified teachers with advanced degrees, professional certification, and extensive pedagogical training produce significantly better student achievement results. Teachers with strong subject matter expertise, effective classroom management skills, and continuous professional development demonstrate superior ability to enhance student comprehension, critical thinking, and academic performance. The study concludes that qualified and experienced teachers create conducive learning environments that promote educational excellence, emphasizing that no nation can grow beyond the quality of its teachers.

Keywords: Teacher Qualification, Academic Achievement, Primary Education

Introduction

Education is one of the most crucial factors directly linked to societal development and continues to play this role as long as society exists. Education is also a process through which individuals transmit experiences, discoveries, and values accumulated over generations in their struggle for survival. It forms the foundation for socio-economic, cultural, and political development, enabling individuals and communities to actively participate in the development process by acquiring knowledge, skills, abilities, and attitudes (Adeyemi & Ojo, 2021).

According to Okonkwo (2023), effective teachers are essential for the proper functioning of the education system and the enhancement of learning quality. Job satisfaction allows Teachers to put forth their maximum effort, in their work. The maintenance of high morale and satisfaction has long been a critical objective for educational stakeholders. Teachers develop performance styles that shape their ways of interacting with the world, both perceptually and cognitively. A teacher, therefore, is likely to act in a manner that optimizes the use of their aptitudes. Similarly, teachers' positive attitudes towards their profession and higher levels of motivation influence their perception of the work environment. An effective Teacher development program should incorporate these factors to foster essential skills and attitudes among educators (Adebayo & Hassan, 2022). Furthermore, teachers must understand that fostering honesty is not only a personal virtue but also essential for shaping an ethical society. Encouraging honesty among Teachers can contribute to a more positive attitude toward the teaching profession (Ogunleye, 2024).

As noted by Nwosu (2022), factors influencing teacher qualification include: aptitude, attitude, subject mastery, teaching methodology, classroom management, personal characteristics, Relationships with students and colleagues, planning and preparation, self-improvement, communication with parents and the community, self-confidence, intellect, and motivation. The government of Niger State has demonstrated its commitment to improving the quality of education through various educational conferences and initiatives. The goal of Continuous Professional Development (CPD) is to enhance Teachers' classroom performance and ultimately improve student achievement. CPD is a career-long process that focuses on improving knowledge, skills, and attitudes, particularly in classroom practice. Teachers must be actively involved in their own learning, collaboration with colleagues, self-assessment, and engagement

in a range of formal and informal activities that lead to improvement in their own and others' teaching practices (Eze & Chukwuemeka, 2023).

Significance of the Study

The study on the influence of teacher's qualification on the educational achievement of pupils in primary school, it is significant for several reasons the study aims to investigate the relationship between the qualification of primary school Teachers and the educational achievement of their pupils. The study can help identify the types of Teacher qualifications that are most effective in promoting academic success in pupils. This information can be used to guide Teacher Training programs and other practices to ensure that primary school pupils have access to most qualified and effective Teachers. Also the study can shade more light on the accountability of Teachers in ensuring high-quality education. It is essential for teachers to have the necessary qualifications to meet the educational needs of their pupils, and this study can help assess whether current teacher qualifications are meeting these needs. The study can also contribute to educational policy development light. The study can provide insights into the most effective ways to invest in Teacher training and education to improve academic outcomes for primary school pupils.

The study on the influence of teacher's qualification on the educational achievement of primary school pupils is significant as it can contribute to the improvement of educational outcomes and the development of effective educational policies.

Teacher's Qualification

Teacher qualification refers to the formal education level attained by a teacher, typically including a Bachelor's degree in Education or a subject-specific field (Adebayo & Hassan, 2022). The level of academic qualification directly influences a teacher's ability to deliver quality instruction and improve student learning outcomes. According to Okonkwo and Adewale (2024), teacher qualification is the extent to which an individual has undergone structured professional training programs, including pre-service and in-service training, aimed at equipping them with teaching methodologies and classroom management skills. This ensures that Teachers are well-prepared to handle diverse learning environments.

Eze and Chukwuemeka (2023) defined Teacher qualification as the possession of official certification or licensing, which verifies that a teacher has met the required educational standards and professional competencies necessary for effective teaching. Certification serves as an

indicator of a teacher's preparedness and adherence to educational policies. Teacher qualification can also be defined as the combination of teaching experience and pedagogical competence, which allows educators to effectively plan, implement, and assess instructional strategies to enhance student achievement (Nwosu, 2022). Experienced teachers with strong pedagogical skills are better equipped to adapt to student needs and improve classroom engagement.

According to Ogunleye (2024), teacher qualification is the depth of Subject matter expertise possessed by an educator ensures that they have a thorough understanding of the content they teach. Subject expertise enables teachers to simplify complex concepts, encourage critical thinking, and enhance students' performance. However, teacher qualification as a dynamic, multifaceted concept that transcends simple credentialing to encompass comprehensive professional readiness. While formal education and certification provide essential foundations, true qualification emerges from the integration of subject matter expertise, pedagogical competence, and practical classroom experience. A qualified teacher possesses not only the academic knowledge and official credentials but also the ability to transform complex concepts into accessible learning experiences for diverse student populations.

Educational Achievement

Educational achievement refers to the measurable performance of students in their academic pursuits, often assessed through grades, standardized test scores, and completion rates (Smith & Johnson, 2021). It is an indicator of how well students understand and apply knowledge across various subjects. According to Brown (2022), educational achievement encompasses the acquisition of cognitive abilities, critical thinking skills, and problem-solving capacities that enable students to succeed in both academic and real-world settings. It is not only about grades but also about a student's ability to apply learned knowledge effectively. Educational achievement is defined as the attainment of educational qualifications and competencies that contribute to an individual's ability to secure better economic and social opportunities (Williams, 2023). It plays a significant role in shaping career paths and improving an individual's quality of life. Miller and Anderson (2023) describe educational achievement as a comprehensive measure that includes academic excellence, personal development, leadership skills, and social adaptability. It extends beyond classroom performance to encompass personal growth and lifelong learning capabilities. Educational achievement is the outcome of a well-structured

education system where students meet or exceed the set standards and objectives defined by educational institutions and policymakers (Garcia, 2024). It reflects the effectiveness of teaching strategies, curriculum design, and student engagement in learning.

Educational achievement is a critical factor in assessing the effectiveness of an education system and determining students' academic and personal growth. It encompasses various aspects, including academic performance, cognitive development, socioeconomic mobility, holistic development, and institutional effectiveness. Understanding these dimensions helps in recognizing the role of education in shaping individuals and society as a whole. One of the primary indicators of educational achievement is academic performance. It is commonly measured through grades, standardized test scores, and completion rates. These assessments help determine how well students understand and apply knowledge across different subjects. Strong academic performance is often associated with better opportunities in higher education and career advancement. However, educational achievement is not solely about grades; it also reflects a student's ability to critically analyze information, solve problems, and demonstrate creativity in learning. Educational achievement extends beyond memorization and test scores to include the development of cognitive skills. The ability to think critically, solve complex problems, and adapt to new situations is a fundamental aspect of learning. A well-rounded education fosters intellectual curiosity, logical reasoning, and analytical thinking, equipping students with the skills necessary for lifelong learning. Additionally, students who achieve educational milestones are more likely to be independent learners capable of adapting to the evolving demands of society.

One of the significant outcomes of educational achievement is its impact on socioeconomic mobility. Individuals who attain higher levels of education often have access to better job opportunities, higher salaries, and improved living conditions. Education serves as a gateway to financial independence and social advancement. It enables individuals to develop the knowledge and skills necessary to compete in the labor market. Furthermore, societies that emphasize educational achievement tend to experience economic growth, reduced poverty rates, and overall national development.

Educational achievement is not solely about academic excellence; it also involves personal growth and the development of social and leadership skills. A well-rounded education fosters

emotional intelligence, teamwork, communication skills, and resilience. Schools and other educational institutions provide students with opportunities to engage in extracurricular activities, community service, and leadership roles, all of which contribute to their overall development. These experiences prepare students to become responsible citizens who can contribute positively to society.

Influence of Teachers' Qualification on Educational Achievement

Teachers' qualifications play a significant role in determining the academic success of students. The level of education, certification, training, and subject-matter expertise of Teachers directly influence their ability to deliver quality instruction, engage students, and enhance learning. Outcomes. Highly qualified Teachers possess the necessary pedagogical knowledge instructional strategies and classrooms management skills to support students in achieving educational excellence.

Teacher Qualification and Student Achievement

According to Johnson and Smith (2021), Teachers with higher academic qualifications and professional training tend to produce better student outcomes. A well-qualified Teacher possesses a deep understanding of subject content, effective teaching methodologies, and the ability to adapt lessons to meet diverse learning needs. This expertise helps in improving students' comprehension, critical thinking, and problem-solving abilities, leading to higher academic achievement. In the same vein, Carter et al. (2022) emphasize that Teacher certification is a strong predictor of student success. Certified Teachers, who have undergone rigorous training and assessments, are more likely to implement effective teaching strategies, utilize appropriate instructional materials, and assess student progress accurately. This ensures that students receive high-quality education that meets national and international standards.

Pedagogical Skills and Classroom Management

Pedagogical skills are crucial in determining the effectiveness of a Teacher. Williams and Taylor (2023) highlighted that teachers with formal education in pedagogy are better equipped to create structured lesson plans, foster interactive learning environments, and address the unique needs of each student. Their ability to use differentiated instruction and innovative teaching techniques enhances student engagement and academic performance. Moreover, experienced and qualified

Teachers excel in classroom management, ensuring that students remain focused and motivated. Davis and White (2024) defined that a well-organized and disciplined classroom contributes to better learning experiences and improved academic results. Effective classroom management strategies, such as setting clear expectations and using positive reinforcement, create an environment conducive to learning.

Continuous Professional Development

Teachers' qualifications should not be static but should evolve through Continuous Professional Development (CPD). According to Thompson and Green (2024), Teachers who participate in ongoing training programs, workshops, and higher education courses are better equipped to adapt to new educational trends, technologies, and teaching methodologies. Lifelong learning among educators ensures that students benefit from updated knowledge and skills that align with modern academic demands.

Teacher's Experience

Teacher experience is a critical factor influencing instructional quality, student engagement, and academic achievement. As Teachers gain experience, they develop the ability to manage diverse classrooms, implement effective teaching strategies, and address student learning needs more efficiently. Experience enhances not only subject mastery but also pedagogical skills, classroom management, and adaptability to different learning styles. According to Johnson and Smith (2021), experienced Teachers are better equipped to navigate the complexities of teaching, including lesson planning, behavioral management, and differentiated instruction. As Teachers accumulate years of practice, they refine their ability to handle classroom challenges, respond to students' diverse needs, and adjust instructional strategies for better learning outcomes. This expertise allows them to foster an engaging and productive learning environment. Furthermore, Carter et al. (2022) emphasized that teaching experience contributes to improved student achievement. With years of teaching, educators gain deeper content knowledge and a stronger command of instructional techniques, making them more effective in delivering lessons. Experienced Teachers are also more skilled in identifying learning gaps, adapting curriculum materials, and using formative assessments to enhance understanding. These factors collectively lead to better academic performance.

Meanwhile, Williams and Taylor (2023) highlighted that experienced Teachers are more adoptable at classroom management, which plays a crucial role in maintaining a conducive learning environment. Classroom discipline, organization, and effective communication strategies improve with experience, enabling teachers to minimize disruptions and maximize instructional time. Additionally, veteran teachers often serve as mentors to less experienced colleagues, fostering a collaborative teaching culture that benefits both educators and students. However, Davis and White (2024) discussed how professional growth continues throughout a Teacher's career. While experience enhances competence, continuous professional development ensures that experienced teachers stay updated with evolving educational trends, technology integration, and innovative teaching methods. Schools that invest in ongoing training for experienced Teachers enable them to remain dynamic and responsive to changing educational demands.

Theoretical Framework

Human Capital Theory (HCT) is a fundamental economic concept that explains how investments in human abilities, skills, and education contribute to personal and societal economic growth. First introduced by Theodore Schultz (1961) and later expanded by Gary Becker (1964), the theory suggests that individuals and organizations benefit from acquiring knowledge, training, and experience, as these elements enhanced productivity and efficiency. The theory has been widely applied in economics, education, labor markets, and management studies, emphasizing the role of human development as a key driver of economic prosperity. The idea that investment in human capabilities leads to economic growth can be traced back to early economic thought. However, Schultz (1961) and Becker (1964) formalized the concept, arguing that people could be viewed as economic assets similar to physical capital, such as machinery or infrastructure.

Becker defined human capital as "the knowledge, skills, health, and abilities possessed by individuals that contribute to their economic productivity". According to the theory, individuals invest in themselves through education, skill development, healthcare, and training, leading to higher incomes and improved economic outcomes. Over the years, the theory has been expanded by Economists and Policymakers who recognize that education and skill acquisition are among the most significant forms of capital investment in modern economies.

Human Capital Theory (HCT) provides a highly relevant theoretical framework for

understanding the influence of teacher qualifications on pupil academic achievement in primary schools. HCT fundamentally posits that investments in human capital through education, training, and skill development lead to increased productivity and improved outcomes, making it directly applicable to the teacher-student dynamic in educational settings. In the context of this study, teachers represent human capital assets whose qualifications (formal education, professional training, and expertise) constitute investments that should theoretically yield returns in the form of enhanced student learning outcomes. The theory suggests that better-qualified teachers, having undergone more extensive education and training, possess greater human capital and should therefore be more effective in facilitating student achievement. HCT explains the mechanism through which teacher qualifications translate into improved pupil performance by emphasizing that qualified teachers have accumulated knowledge, skills, and competencies that enable them to deliver higher-quality instruction, employ effective pedagogical strategies, and create conducive learning environments. The theory's emphasis on the economic returns of human capital investment aligns with educational research showing that students taught by well-qualified teachers demonstrate better academic performance, higher graduation rates, and improved long-term educational outcomes. Furthermore, HCT supports the rationale for investing in teacher education and professional development programs, as these investments in teacher human capital should generate multiplier effects through improved student achievement across entire school systems. The theory also provides a framework for understanding why educational systems prioritize teacher qualification requirements and continuous professional development, as these represent strategic investments in human capital that ultimately benefit society through a more educated and skilled population.

Empirical Review

The relationship between teachers' qualifications and students' academic achievement has been a focal point of educational research in recent years. Below is a compilation of ten empirical studies conducted between 2020 and 2024 that examine this relationship:

Ngabonizza and Oniye (2024): This study explored the effect of teachers' qualifications on students' academic performance in public secondary schools in Kicukiro District, Rwanda. The findings revealed a statistically significant relationship between teachers' qualifications and

students' academic performance, indicating that higher teacher qualifications positively impact student outcomes.

Yakubu (2024): Investigating the correlation between teachers' academic qualifications and students' academic achievement in Fine and Applied Arts at Colleges of Education in Northeast Nigeria, this study found that teachers' academic qualifications are significantly related to students' performance, suggesting that higher-qualified teachers contribute to better student achievement.

Frontiers in Education (2024): A study published in *Frontiers in Education* examined how the quality of mathematics and English language teachers is associated with students' achievement. The research indicated that students who have access to highly qualified teachers tend to achieve at a higher rate, emphasizing the importance of teacher qualifications in student success.

Research Gate (2024): An analysis on *ResearchGate* assessed the ways in which teacher qualifications and other school inputs are related to student achievement across various states.

The study concluded that teacher qualifications play a crucial role in enhancing student academic outcomes.

Tandfonline.com (2024) Research published on *Tandfonline.com* explored factors affecting students' academic performance and highlighted the significant impact of teachers' efficiency, which is closely linked to their qualifications. The study found a positive correlation between teacher efficiency and student academic success.

IES Report (2024) A report by the Institute of Education Sciences reviewed evidence on how teacher professional development, a component of teacher qualification, affects student achievement. The findings suggest that substantial professional development can boost student achievement, underscoring the value of ongoing teacher education.

Springer Link (2024) A chapter in *SpringerLink* discussed how teachers and their classroom behaviors, influenced by their qualifications, contribute significantly to student achievement. The research emphasized that teacher qualifications are a key determinant of effective teaching practices.

Conclusion

The conclusion of this study was that a professional and qualified teacher can impart knowledge and improve pupils' academic achievement, and also an experienced and qualified teacher makes

use of different cognizance among pupils for effective leaning. This is because the teacher can properly apply it, and impart knowledge to their pupils, and they will be able to understand the subject and show positive example to the society. It implies that no nation grow above the quality of its teacher, and also it was also concluded that an experienced teacher promote a very good learning environment, and also experience of a teacher influences pupils academic achievement that is , a teacher with long teaching experience teaches better. It was worthy of note that quality of teachers is a strong factor in pupils academic achievement.

Recommendations

The following recommendations were made;

1. **Qualified and Trained Teachers:** It is crucial to have teachers who are qualified and trained in their respective subjects and teaching methodologies. Teachers with the necessary qualifications and training are better equipped to effectively deliver the curriculum and engage students in the learning process.
2. **Subject Knowledge:** Teachers should have a strong understanding of the subjects they teach. This includes having a deep knowledge of the content, as well as staying updated with the latest developments in their field. This enables them to provide accurate and comprehensive instruction to primary school pupils.
3. **Pedagogical Skills:** In addition to subject knowledge, teachers should possess effective pedagogical skills. This includes the ability to communicate clearly, engage students in interactive and participatory learning activities, and adapt teaching methods to meet the diverse needs of students.
4. **Continuing Professional Development:** Teachers should be encouraged to engage in continuous professional development to enhance their skills and knowledge. This can be achieved through workshops, seminars, conferences, and other forms of training. Ongoing professional development ensures that teachers stay updated with best practices in education and can apply them in the classroom.
5. **Supportive School Environment:** The influence of teacher qualification is also influenced by the overall school environment.' Schools should provide a supportive and conducive atmosphere for teaching and learning. This- includes adequate resources, infrastructure, and administrative support to enable teachers to deliver quality education.

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ASSESSMENT OF THE CONTRIBUTIONS OF SCHOOL BASED MANAGEMENT COMMITTEES TO THE ADMINISTRATION OF UNIVERSAL BASIC EDUCATION (UBE) SCHOOLS IN KADUNA STATE

BY

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ABSTRACT

This study assesses the contributions of School-Based Management Committees (SBMCs) to the administration of Universal Basic Education (UBE) schools in Kaduna State, Nigeria. The study was guided by two objectives to: examine the extent and nature of SBMC involvement in the administration of UBE schools in Kaduna State and Identify the challenges faced by SBMCs of UBE schools in Kaduna State. Two research questions were formulated in line with the research objectives. The research adopted a descriptive survey design, using both quantitative and qualitative methods to collect data from headteachers, SBMC members, teachers, and education officers across selected Local Government Education Authorities (LGEAs) in Kaduna State. Questionnaire and interview were used as instruments for data collection. Quantitative data from the questionnaire were analyzed using frequencies and percentages, while qualitative data from interviews were analyzed using thematic analysis. Findings revealed that SBMCs play a significant role in mobilizing community support, overseeing minor school projects, promoting enrolment and retention (especially that of the girl-child), and enhancing communication between schools and their host communities. However, challenges such as inadequate training, limited funding, and weak monitoring mechanisms hinder their effectiveness. The study concludes that while SBMCs have made notable contributions to the administration of UBE schools, their impact can be greatly enhanced through capacity building, increased government support, and stronger policy enforcement. The study recommends strategic stakeholder engagement, regular training for SBMC members, and improved supervision by education authorities to optimize the effectiveness of SBMCs in basic education management.

Introduction

Education is universally acknowledged as a key driver of socio-economic development, and its effective administration is essential to achieving quality outcomes. In Nigeria, the Universal Basic Education (UBE) programme was introduced to ensure equitable access to free and compulsory basic education for all children. However, challenges such as inadequate school infrastructure, poor accountability, and weak community involvement have hindered the programme's success (Federal Ministry of Education, 2023). To address these gaps, School-

Based Management Committees (SBMCs) were institutionalized as community-driven mechanisms to enhance school governance and improve learning outcomes.

SBMCs are intended to serve as a bridge between schools and communities, empowering local stakeholders to participate in planning, decision-making, and monitoring of school activities (UBEC, 2024). In Kaduna State, the government has intensified efforts to train and support SBMCs as part of broader reforms to strengthen school accountability and improve service delivery in education (Kaduna State Government, 2025). Despite these efforts, the actual impact and functionality of SBMCs remain uneven, prompting the need for systematic assessment.

Education remains a vital tool for national development and social transformation. In recognition of this, the Nigerian government introduced the Universal Basic Education (UBE) programme in 1999 as a strategy to provide free and compulsory education to all school-age children at the basic level. To achieve the objectives of UBE, emphasis has been placed on decentralizing school management and enhancing community participation. One of the major instruments for achieving this is the establishment of School-Based Management Committees (SBMCs).

SBMCs are community-level structures composed of stakeholders such as parents, traditional leaders, teachers, women, youth, and local government representatives, tasked with supporting and overseeing the management of schools. Their roles include mobilizing resources, monitoring teaching and learning activities, promoting enrolment and attendance, ensuring accountability in the use of school funds, and fostering community-school relationships. The involvement of SBMCs is expected to bridge the gap between schools and their host communities, thereby promoting transparency, ownership, and sustainability of education development efforts.

In Kaduna State, like in other parts of Nigeria, SBMCs have been established in line with national policy guidelines and supported by various education sector programmes such as the Better Education Service Delivery for All (BESDA), Global Partnership for Education (GPE), and UNICEF interventions. Despite these efforts, there is ongoing concern about the effectiveness and actual contributions of SBMCs to the administration of UBE schools. Some schools experience active and engaged SBMCs, while others struggle with weak participation, limited capacity, or poor coordination.

This study, therefore, seeks to assess the contributions of SBMCs to the administration of UBE schools in Kaduna State. It examines the extent of their involvement in key administrative areas,

the challenges they face, and the factors that promote or hinder their effectiveness. The outcome of this study is expected to provide evidence-based recommendations for strengthening the role of SBMCs in school governance and improving the delivery of basic education in the state.

Statement of the Problem

Although the policy framework for School-Based Management Committees (SBMCs) exists in Nigeria, evidence shows a persistent gap between policy intent and actual practice. In many UBE schools, SBMCs either function sub-optimally or are sidelined in the school decision-making process (Bakwai, 2023). Factors such as inadequate training, poor funding, and weak stakeholder engagement have been cited as major obstacles to their effectiveness (CHRICED, 2023). Moreover, anecdotal reports suggest that some committees are plagued by low community awareness and political interference, which undermine their legitimacy and sustainability (Open Government Partnership, 2023).

Despite considerable investment in capacity building by the Kaduna State Government (Kaduna State Government, 2025), there is limited empirical evidence assessing the extent to which SBMCs are contributing to the effective administration of UBE schools in the state. This study, therefore, seeks to fill this knowledge gap by examining the roles, involvement, and challenges of SBMCs in selected UBE schools in Kaduna State.

Objectives of the Study

The objectives study are to:

1. Examine the extent and nature of School Based Management Committees involvement in the administration of UBE schools in Kaduna State.
2. Identify the challenges faced by School Based Management Committees of UBE schools in Kaduna State.

Research Questions

1. To what extent and in what ways are School Based Management Committees involved in the administration of UBE schools in Kaduna State?
2. What challenges do School Based Management Committees of UBE schools face in carrying out their roles and responsibilities in Kaduna State?

Methodology

This study adopted a descriptive survey research design. The choice of this design is informed by the nature of the study, which seeks to collect and analyze data on the current status, practices, and challenges of School-Based Management Committees (SBMCs) in the administration of Universal Basic Education (UBE) schools. The design allows for the collection of both quantitative and qualitative data from a large population across various education zones within Kaduna State.

The target population consisted of stakeholders involved in the administration of UBE schools in Kaduna State. These included: Headteachers of UBE schools, Members of SBMCs, Teachers, Education officials at the Local Government Education Authorities (LGEAs). Three Local Government Areas (LGAs) were purposively selected from the three senatorial zones of Kaduna State to ensure geographical representation. From each selected LGA, five UBE schools were randomly selected, making a total of 15 schools. From each selected school, the following participants were purposively chosen 1 Headteacher, 2 SBMC members (Chairperson and Women/Youth Representative), 1 Teacher. This gave a total sample size of 60 respondents (15 headteachers + 30 SBMC members + 15 teachers).

Two main instruments were used. The Structured Questionnaire was developed to collect quantitative data from headteachers and teachers on the involvement and challenges of SBMCs in school administration. The questionnaire consisted of closed-ended questions and Likert-scale items. Interview Guide was used to conduct semi-structured interviews with SBMC members and education officials to gain qualitative insights into their experiences, roles, and challenges. The instruments were subjected to expert review by professionals in educational administration and measurement and evaluation. Their suggestions were used to refine the items for clarity, relevance, and accuracy. A pilot test was conducted in one UBE school outside the selected sample area. The reliability of the questionnaire was determined using the Cronbach Alpha method, yielding a coefficient of 0.81, indicating high internal consistency.

Questionnaire was administered to headteachers and teachers during scheduled visits to the schools. Face-to-face interviews were conducted with SBMC members and LGEA officials using the interview guide. Interview responses were recorded and transcribed for analysis. Quantitative data from the questionnaire were analyzed using frequencies and percentages while qualitative

data from interviews were analyzed using thematic analysis, allowing for the identification of common themes, patterns, and perspectives regarding SBMC involvement and challenges.

Results and Discussion

The researchers presented the results and discussed their findings as follows:

Research Question One: To what extent and in what ways are SBMCs involved in the administration of UBE schools in Kaduna State?

Table 1: Respondents' percentage of SBMC Involvement in School Administration of UBE schools in Kaduna State

SBMC Functions	Always (%)	Sometimes (%)	Rarely (%)	Never (%)
Mobilizing community support for school projects	78.3	13.3	5.0	3.3
Monitoring teachers' attendance and punctuality	56.7	25.0	10.0	8.3
Promoting school enrolment/retention	70.0	21.7	5.0	3.3
Participating in school planning/decision-making	48.3	36.7	10.0	5.0
Overseeing use of grants/infrastructure	65.0	26.7	6.7	1.6

The findings show that SBMCs are significantly involved in several key aspects of UBE school administration. A high percentage of respondents indicated that SBMCs always mobilize community support (78.3%), promote enrolment and retention (70.0%), and oversee infrastructure and grants (65.0%). These findings are consistent with the goals of SBMC policy, which emphasizes community ownership and accountability in school management.

However, a relatively lower percentage (48.3%) indicated that SBMCs always participate in school-level planning and decision-making, suggesting room for improvement in collaborative governance. Interviews revealed that in some schools, SBMCs are not fully integrated into internal school planning processes and are only informed after decisions are made by headteachers or education officials.

The study found that SBMCs in Kaduna State are actively involved in areas such as community mobilization for school development projects, promotion of enrolment and retention, and monitoring of infrastructure use (UBEC, 2024). These roles are aligned with the goals of the National School-Based Management Policy (Federal Ministry of Education, 2023). However, the

relatively low level of participation in core decision-making processes within schools suggests that many SBMCs operate in a consultative rather than collaborative capacity.

Research Question Two: What challenges do School Based Management Committees of UBE schools face in carrying out their roles and responsibilities in Kaduna State?

Table 2: Frequency and Percentage on the challenges face by School Based Management Committees of UBE schools face in carrying out their roles and responsibilities in Kaduna State

Challenge	Frequency	Percentage (%)
Inadequate training and capacity of SBMC members	50	83.3
Limited financial support or irregular funding	45	75.0
Poor attendance of members at meetings	32	53.3
Political interference or favoritism in composition	25	41.7
Low community awareness about SBMC responsibilities	29	48.3

The results indicate that the major challenge faced by SBMCs is the inadequate training and capacity of their members (83.3%), which undermines their ability to effectively participate in school governance. This finding is consistent with previous research highlighting the need for continuous capacity-building of SBMC members.

Inadequate training and irregular funding emerged as the two most critical challenges limiting the performance of SBMCs. This finding supports previous research by Bakwai (2023), and Yusuf and Idoghor (2020), which emphasize the need for continuous professional development and support mechanisms to strengthen community governance structures. Additionally, low community awareness about the functions of SBMCs and poor attendance at meetings point to a need for greater sensitization and civic education at the grassroots level (CHRICED, 2023).

Limited financial support was also reported by 75% of respondents. Although SBMCs are expected to mobilize local resources and manage school improvement grants, irregular or insufficient funding hampers their ability to implement meaningful interventions. Interviews revealed that some SBMCs had not received financial support in over a year. Other notable challenges include poor attendance at meetings, political interference in the selection of members, and low community awareness of the SBMC's purpose. These factors affect participation, legitimacy, and sustainability of SBMC functions.

Conclusion

The findings of this study highlight that while SBMCs have made important contributions to UBE school administration in Kaduna State, their impact is constrained by systemic challenges. These include a lack of capacity-building, irregular or insufficient funding, and weak inclusion in internal school decision-making processes. The study aligns with the conclusion of Open Government Partnership (2023) that without sustained training, community awareness, and financial support, the effectiveness of SBMCs in improving service delivery remains limited.

To achieve meaningful community participation in basic education governance, policymakers and education stakeholders must prioritize the operational functionality of SBMCs. With strategic investments in training, transparent selection of members, and consistent support, SBMCs can become more effective agents of school improvement and accountability.

Recommendations

Based on the findings and conclusions, the following recommendations are proposed:

1. Kaduna State Government and educational stakeholders should provide regular and structured training for SBMC members on school governance, financial management, child protection, and community mobilization. This will equip them with the knowledge and skills required to perform their duties effectively.
2. SBMCs should be supported with consistent and adequate funding, including the timely disbursement of school improvement grants. This will enable them to carry out school projects and address pressing needs without delay.
3. Awareness campaigns should be conducted to educate communities on the roles and importance of SBMCs. This will encourage broader participation and support, especially in rural areas where engagement tends to be low.
4. The process of selecting SBMC members should be transparent and free from political interference. Membership should reflect diversity and include women, youth, and marginalized groups to ensure inclusive decision-making.
5. Local Government Education Authorities (LGEAs) and the State Universal Basic Education Board (SUBEB) should regularly monitor SBMC activities, provide feedback, and ensure compliance with policy guidelines.

6. School heads should actively involve SBMCs in planning, budgeting, and evaluation processes to foster shared responsibility and accountability in school administration.

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**ANALYSIS OF USING SHAMELA SOFTWARE IN LEARNING SCIENCE OF
HADITH ON STUDENTS' PERFORMANCE IN SENIOR SECONDARY SCHOOLS,
ADAMAWA STATE, NIGERIA**

BY

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ABSTRACT

This study examined the use of shamela software in learning science of hadith on students' performance in senior secondary schools in Adamawa State, Nigeria. Two objectives, two research questions and two hypotheses were formulated. The study adopted experimental research design,. The target population are all senior secondary schools that are offering Arabic subjects which have the total number of 29,000 students, two intact classes were used with the sample size of 76 from two schools these are; Government Arabic secondary school Song and Isa Ahmadu College of Arabic and Islamic Studies Mubi. Therefore, Isa Ahmadu College of Arabic and Islamic Studies (32 taught with Shamela education software) students stand as experimental group while Government Arabic secondary school Song (44 taught with conventional) students stand as control group. Mean and standard deviation were used to answer research questions while paired t-test was used to test hypotheses one and independent t-test was used to test the hypotheses two. Findings revealed a significant difference between pre-test and post-test performance of experimental group; and there is significant difference between the performance of students in experimental group and that of control. Based on the results, the following recommendations were made; Islamic Studies' Teachers should implore the use of Shamela educational software in verifying and authenticating between sound, weak, and fabricated Hadith, because the software has the capacity of doing such, doing this will help in eliminating falsified Hadith and will sort at giving genuine verdict to Muslim community; and State/Local Governments through the ministry of education, curriculum planners, should recommend and make emphasis on the use of educational software since it was found significant in improving students' academic performance.

Introduction

Computer-assisted learning and multimedia provide special advantages for learners, including visual presentation, self-regulated learning, highly stimulating sound and graphics, immediate feedback, and the opportunity to take control of their own learning, pointed out (Hasanpour, 2024). Although it is believed that educational multimedia provides rich resources that can be an opportunity for the growth of learners and that is the creation of a collaborative environment that allows learners and teachers to search and investigate various issues. But educational software by itself has little effect on learning and teaching if the resource person or instructor did not adequately qualify. Undoubtedly, the technology creates many opportunities for learning

environments and causes significant educational interaction, but alone it cannot increase the quality of teaching and learning (Hasanpour, 2024).

Consequently, technology is a necessity part of teachers lives incorporating technology into classroom has proved to be beneficial in helping students' willingness and improvement and allowed for enhancement of teacher (Abdulrasaq, 2022). Also, Bruck (2011) discovered that using modern Technology has significant impact changes in Basic Psycho-motor and cognitive skills. Hamidulloh, et al., (2023) has the same viewed as pesantren are required to adapt to the times, integrating religion, science, and digital technology utilizing information and communications technology (ICT) such as digital curricula, e-libraries, digital dictionaries, mobile applications, websites, software, multimedia, mobile learning, e-learning, social media, and others in the learning process.

The rapid advancement of digital technology in education has created a forum for scholarly discourse on the viability and applicability of the educational system as a whole, including Islamic education. In light of the needs of 21st century learning skills, which necessitate constant transformation, the influence of a re-evaluation pertaining to the deployment of technology in teacher teaching should be given fresh life (Eickelmann and Gerick, 2020). Islamic education teachers should constantly advance their knowledge and abilities in accordance with the demands of jihad in their pursuit of knowledge. They should also utilize the idea of wisdom to apply these abilities to the use of digital technology for the benefit of other people, particularly pupils (Ibrahim & Subari, 2021).

Educational software offers personalized learning experiences tailored to the unique needs of each student, emphasizing the importance of self-directed learning, engagement, and personalization (Büchel et al., 2022; Huntington et al., 2023). Personalized learning pathways enabled by these technologies help cater to diverse student needs, promoting more effective and individualized learning experiences (Camilleri and Camilleri, 2020; Vázquez-Cano et al., 2023). Therefore, student engagement and motivation are critical for successful learning outcomes, and educational games and gamified learning applications significantly enhance these factors (Yu et al., 2020).

Moreover, interactive applications have been found to support the development of early mathematical skills, particularly among low-achieving students (Outhwaite et al., 2017). The

ability of educational software to adapt to the individual needs of students with special educational needs and disabilities (SEND) further underscores, it is importance in creating inclusive learning environments (Fage et al., 2018; Pitchford et al., 2018). These findings provide valuable insights for educators, policymakers, and stakeholders to inform evidence-based practices, ensuring that the integration of technology in primary education effectively enhances student learning experiences and outcomes (Büchel et al., 2022; Huntington et al., 2023; Vázquez-Cano et al., 2023).

Software is considered one of the most important foundations used in computer in education, it is a set of logical and intangible components that is introduced in a form of different types of educational materials via computer (Mohammad, 2015). It allows the learner to interact with it, and provide him/her with immediate feedback to achieve specific goals. There are different styles used in educational software but the basic ones according Mohammad, (2015) are;

1. **Simulation:** where the learner is trained within the framework of natural phenomena, without costs, burdens, or risk, and the learners face similar situations in their daily lives. This can be used in programming to address complex concepts, or that which is difficult to provide factual mini models or factual enlarged models to them in the classroom.
2. **Educational games:** These are programs made for fun. They depend on the method of simulation, and the development of skills, such as problem solving. They make the education interesting to the children, and they are designed to help promote and learn educational goals. Among the advantages of this type: the competition, the thrill, the excitement, and fun, and a commitment to a set of rules and laws to control the process.
3. **Exercise and practice:** one of the most computer applications in education, where students are trained to exercise after studying the educational material, and get a feedback, where exercises are given at different levels, as they are providing an educational lesson to students directly, leading to students' interaction with the tutorial which provides a series of examples and exercises to increase the versatility of the student in that skill. This program depends on the continued enhancement for each correct answer, and instant feedback.
4. **Problem solving:** in this stage we can write steps for solving the problem, perform calculations, and to deal with the data as numbers, with the need to provide some things to

solve the problem effectively, such as: the desire to solve the problem, and possess the knowledge, experience, availability of the problem and the solutions, and the ability to make design and to test solutions to reach the right solution.

5. **Educational dialogue:** where a software is designed using the method of asking questions and providing information and instant feedback on the software plan. This is considered one of the newest and most sophisticated styles, offering an assessment of the student performance based on his mistakes, and determine the problem location facing the student to learn the educational material, and provide the necessary treatment for the problem.
6. **Special teaching programs:** It serves as a special tutor for the student, and the information is provided through these programs in the form of small units based on the principle of individual learning. This style is characterized by the abundance of material offered that consists of concepts, relationships, generalizations, and examples (Mohammad, 2015).

Education is a process that cultivates human thought. According to Fisher, Exley and Ciobanu (2014) the importance of thinking for humans is so much that life is not possible without it, and the main goal of any educational system is to bring people to think. Therefore, the modern technology undoubtedly becomes the central tenacity for the development of the society. Education is the key to drive forward any useful development in any nation that is the main reason for some experts' statement that no nation will develop if it is above level her educational system. In building up the education sector many things should be considered such as; teacher, method, physical teaching material among others. According to Harris cited in Abdulrasaq (2022) today's education is in high pressure to provide 21st century students with the quality education based on 21st century standard such as providing students with technological and information skills needed to compete in and ever changing technology driven world. In view of this, Islamic educators were not left behind in searching for the educational software that will be capable to enhance the teaching and learning in various topics in the subjects such as general in fiqhu science of hadith, history, qur'anic commentary among others.

Based on above mentioned, the researcher used shamela software in learning science of hadith to students in Government Arabic Secondary School, Song and Isa Ahmadu College of Arabic and Islamic Studies, Mubi in finding how authenticate; sound, weak and false hadith of prophet Muhammad peace and blessing of Allah be upon him. Shamela software is one of the

educational software which there is programmed library containing an initial amount of 10000 volumes of books on the various Islamic sciences (only Arabic) organized into appropriate categories and identity cards for many of the books and authors also, with the following additional features;

1. Highly advanced searching capabilities, including choosing single or multiple books to search in, ignoring or including the various forms of the letter Hamza, searching for book titles, searching within the books, searching in the comments section of the books, searching for the authors, and searching for multiple words either by “and” or using “or” criteria.
2. Ability to edit the books, bookmark favourite locations, open multiple books at the same time, remove or keep the Tashkeel (Arabic punctuation marks) from texts (when available), and to associate books of Sharh (commentaries) with their respective Matn (text – when available)
3. Ability to change background image of the application, and changing the font and colour of various levels of text and background in the software (e.g. main text, comments, titles, footnotes, etc.).
4. Ability to export the books to HTML files, (.doc) files (requires Microsoft Word on the device), and (book) files (requires the empty version of the library) with various export options,
5. Ability to update the library and download new books from within the software. (<https://islaamiclibrary.wordpress.com/2009/03/01/thecomprehensivelibrary/>)

Therefore, the study used two schools both are pure Arabic oriented institution, Government Arabic College stands as experimental group or treatment group, here the researcher implored shamela software in teaching science of hadith while, Isa Ahmadu Arabic College stands as control group using conventional method both group were subjected to pre-test and post-test.

Statement of the Problem

Shamela is an educational software which has thousands volumes of Arabic text books ranging from volumes of; exegeses, jurisprudence, science of hadeeth such as, Musnad, Muttaṣil, Mutawatir, Munkar, Mudraj, Sahih, Hasan, Da`if, Munqaṭi, Maudu among others. Hadith is the

saying, commands, silent and approval of Prophet Muhammad may peace and blessing of Allah be upon him. There are thousands of fake hadith that are in circulating which many scholars do not know how differentiate with the authenticate ones. That why even majority of the students that studying science of hadith do not know how to differentiates between Sahih, Hasan, Da'if, etc. due to the scarcity of relevant materials on mentioned. Probably, this should be the main reasons majority of the students are making errors in authenticating some hadiths instead of dis-authenticating to weak, (da'if), also, may be the reasons of giving wrong verdicts and dis unity among Muslims ummah in Adamawa State, Nigeria.

Therefore, the researcher prompted to use this educational software (Shamela) to see if it can solve the existing problems of students in authenticating the sound of hadith from weak of false hadith that are been employed into the Muslim Ummah which leads to serious contradicting verdict among students or even scholars themselves in Adamawa State, Nigeria.

Objectives of the Study

The objectives of the study were to:

1. ascertain the pre-test and post-test performance of students taught Science of Hadith using Shamela Software in Senior Secondary Schools in Adamawa State, Nigeria; and
2. examine the performance of students taught Science of Hadith using Shamela Software and those taught using conventional method in Senior Secondary Schools in Adamawa State, Nigeria.

Research Questions

This study was guided by the following research questions:

1. What is the difference between the pre-test and post-test performance of students taught Science of Hadith using Shamela Software in Senior Secondary Schools in Adamawa State, Nigeria?
2. What is the difference between the performance of students taught Science of Hadith using Shamela Software and those taught using conventional method in Senior Secondary Schools in Adamawa State, Nigeria?

Hypotheses

The following hypotheses were formulated to guide the study.

H₀₁. There is no significant difference between the pre-test and post-test performance of students taught Science of Hadith using Shamela Software in Senior Secondary Schools in Adamawa State, Nigeria.

H₀₂. There is no significant difference between the performance of students taught Science of Hadith using Shamela Software and those taught using conventional method in Senior Secondary Schools in Adamawa State, Nigeria.

Methodology

The study adopted quasi-experimental design. The pre-test, post-test and non-equivalent control group design was used. The target population are all senior secondary schools that are offering Arabic subjects which have the total number of 29,000 students, two intact classes were used with the sample size of 76 from two schools these are; Government Arabic secondary school Song and Isa Ahmadu College of Arabic and Islamic Studies Mubi. Therefore, Isa Ahmadu College of Arabic and Islamic Studies (32 taught with Shamela education software) students stand as experimental group while Government Arabic secondary school Song (44 taught with conventional) students stand as control group. The researcher used teacher made test, which named Performance Test for Authentication of Sound Hadith (PTASH) as instrument for data collection. Six lesson plans were developed for both experimental and control groups, experimental group was taught with Shamela software, while control group was taught with conventional method. The researcher used mean and standard deviation were used to answer the research questions, while paired t-test was used to test hypothesis one and independent t-test was used to test hypothesis two.

Results

In order to answer the research questions descriptive statistical analysis was done using means and standard deviation, while paired and independent t-test were used to test the hypothesis one and two respectively. The results and interpretations are hereby presented according to research questions and hypotheses.

Research Question one: What is the difference between the pre-test and post-test performance of students taught Science of Hadith using Shamela Software in Senior Secondary Schools in Adamawa State, Nigeria?

Table 1: Descriptive Statistics of Mean and Standard Deviation for Research Question One (pre-test and post-test)

Groups	N	Mean	Mean Differences	Std. Deviation	Std. Error Mean
pre-test	32	26.23	53.64	8.468	.862
post-test	32	79.87		11.801	1.739

Table 1 revealed the result of pre-test and post-test for experimental groups; the pre-test mean scores is 26.23 with the standard deviation of 8.468 while the post-test has the mean scores of 79.87 with the standard deviation of 11.801. The outcome revealed the mean difference between pre-test and post-test as 53.64, based on this the post-test mean score are far better than the pre-test means score. This revealed the existence of difference between the performance of students in pre-test and post-test. Hence, the use of using Shamela Software in learning Science of Hadith has significant impact.

Research Question 2: What is the difference between the performance of students taught Science of Hadith using Shamela Software and those taught using conventional method in Senior Secondary Schools in Adamawa State, Nigeria?

Table 2: Descriptive Statistics of Mean and Standard Deviation for Research Question Two (Experimental and control group) Descriptive

Groups	Mean	N	Std. Deviation	Std. Error Mean
Experimental	79.87	32	8.468	1 .862
Control group	25.40	44	8.835	1.191`

Table 2 revealed the results of post-test for experimental and control groups. The mean score for experimental group was found to be 79.87 while the control group scored mean of 25.40. The mean difference of 54.47 was recorded. Therefore, those taught with shamela education software have scored highest than those using conventional method. Therefore, teaching students with educational software has significant impact on students' performance in learning science of hadith, due to the ability of students in differentiating sound (sahih), weak (dai'f) rejected (munkar) among others.

The researcher made use of paired t-test for comparing between pre-test and post-test for testing hypothesis one and independent t-test for testing hypothesis two.

H₀₁. There is no significant difference between the pre-test and post-test performance of students taught Science of Hadith using Shamela Software in Senior Secondary Schools in Adamawa State, Nigeria.

Table 3: Paired Samples t-test for hypothesis one (Pre-test and Post-test)

Paired Samples Statistics					
Groups	N	Mean	Mean Dif.	Std. Dev.	Sig. (2-tailed)
pre-test	32	26.23	53.64	8.468	.000
post-test	32	79.87		11.801	

Table 3 revealed the result of pre-test and post-test for experimental group, stated hypothesis which said there is no significant difference between the pre-test and post-test performance of students taught Science of Hadith using Shamela Software in Senior Secondary Schools in Adamawa State, Nigeria, is rejected. Since the p-value obtained is 0.000 which is less than the alpha value of .05 level of significance ($P < 0.05$). Therefore, significant difference exists between the pre-test and post-test performance of students taught Science of Hadith using Shamela Software in Senior Secondary Schools in Adamawa State, Nigeria.

H₀₂. There is no significant difference between the performance of students taught Science of Hadith using Shamela Software and those taught using conventional method in Senior Secondary Schools in Adamawa State, Nigeria.

Table 4: Independent t-test for hypothesis two (Experimental and Control)

Groups	N	Mean	Mean Dif.	Std. Dev.	Sig. (2-tailed)
Experimental	79.87	32	54.47	8.468	.000
Control	25.40	44		8.835	

Table 4 revealed the results of post-test for experimental and control groups. The stated hypothesis which said there is no significant difference between the performance of students taught Science of Hadith using Shamela Software and those taught using conventional method in Senior Secondary Schools in Adamawa State, Nigeria is rejected. This is because p-value is 0.000 which is less than the alpha value of .05 level of significance ($P < 0.05$). Hence, significant difference exists between the performance of students taught Science of Hadith using Shamela Software and those taught using conventional method in Senior Secondary Schools in Adamawa

State, Nigeria.

Discussion of Findings

Table 1 revealed the result of pre-test and post-test for experimental groups; the pre-test mean scores is 26.23 with the standard deviation of 8.468 while the post-test has the mean scores of 79.87 with the standard deviation of 11.801. The outcome revealed the mean difference between pre-test and post-test as 53.64, based on this the post-test mean score are far better than the pre-test means score. This revealed the existence of difference between the performance of students in pre-test and post-test. Hence, the use of using Shamela Software in learning Science of Hadith has significant impact. Table 3 revealed the result of pre-test and post-test for experimental group, stated hypothesis which said there is no significant difference between the pre-test and post-test performance of students taught Science of Hadith using Shamela Software in Senior Secondary Schools in Adamawa State, Nigeria, is rejected. Since the p-value obtained is 0.000 which is less than the alpha value of .05 level of significance ($P < 0.05$). Therefore, significant difference exists between the pre-test and post-test performance of students taught Science of Hadith using Shamela Software in Senior Secondary Schools in Adamawa State, Nigeria. In line of this study Bashah and Zulkifli, conducted a study (2022), on the Issues and challenges of Islamic education teachers in the implementation of digital learning. Their finding indicated integrating technology in teaching and learning has significance impact on students' performance this agreed with the present study which resulted that educational software can enhance students' performance.

Table 2 revealed the results of post-test for experimental and control groups. The mean score for experimental group was found to be 79.87 while the control group scored mean of 25.40. The mean difference of 54.47 was recorded. Therefore, those taught with shamela education software have scored highest than those using conventional method. Therefore, teaching students with educational software has significant impact on students' performance in learning science of hadith, due to the ability of students in differentiating sound (sahih), weak (dai'f) rejected (munkar) among others. And Table 4 further revealed the results of post-test for experimental and control groups. The stated hypothesis which said there is no significant difference between the performance of students taught Science of Hadith using Shamela Software and those taught using conventional method in Senior Secondary Schools in Adamawa State, Nigeria is rejected. This is because p-value is 0.000 which is less than the alpha value of .05 level of significance

($P < 0.05$). Hence, significant difference exists between the performance of students taught Science of Hadith using Shamela Software and those taught using conventional method in Senior Secondary Schools in Adamawa State, Nigeria. This finding agreed with the findings of Usman (2019) which revealed that, students taught izhar rules with Hafs recitation using Q.V. 5 software performed significantly better than those taught izhar rules with Hafs recitation using conventional method in junior secondary schools in Adamawa State, Nigeria, among others.

Recommendations

The researcher recommended as follows:

1. Islamic Studies' Teachers should implore the use of shamela educational software in verifying and authenticating between sound, weak, and fabricated Hadith, because the software has the capacity of doing such, doing this will help in eliminating falsified Hadith and will sort at giving genuine verdict to Muslim community.
2. State/Local Governments through the ministry of education, curriculum planners, should recommend the use of educational software since it was found significant in improving students' academic performance.

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EFFECTIVE POLICY IMPLEMENTATION AS A PANACEA FOR SUSTAINABLE COMMUNITY DEVELOPMENT PROGRAMMES IN NIGERIA

BY

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ABSTRACT

The success and sustainability of community development programmes like most other programmes hinge largely on effective implementation. In Nigeria, a situation by which well-meaning initiatives did not provide the anticipated results for various community development programmes requires urgent attention. This paper highlights numerous problems such as the population's disconnection from politicians, the overlap of implementing agencies, the excessive influence of foreign organizations, and a lack of ownership over policies. These difficulties have had serious repercussions, such as resource waste, a decline in public confidence, social and economic stagnation, and a damaged reputation abroad. The paper recommends among others severing the connection between development initiatives and excessive foreign influence, guaranteeing that decision-makers have a thorough awareness of local circumstances, preserving policy continuity in the face of political shifts, reducing corruption, advancing national cohesion, and cultivating political will. In order to improve the efficacy and effectiveness of policy implementation community development programmes in Nigeria, these ideas hope to promote social progress and sustainable development in the long run.

Keywords: Effective Policy Implementation, Community Development Programmes.

Introduction

Sometimes community-based programmes, community interventions, community research are frequently referred to as community development. Adedokun, Adeyemo, and Olorunsola (2010) sees community development as the process of helping a community to strengthen itself and develop towards its full potential. Community development is often distinguished from other forms of community works through its values and democratic principles, inclusiveness, and community self-determination. Agbazure (2020), sees community development as an effort made by the people in conjunction with the government authorities aimed at improving the cultural and socio-economic conditions of their being as well as to enable them to contribute meaningfully to their immediate environment and the nation at large. Community development is that organized and planned attempt aimed at assisting individuals and groups to acquire needed attitudes and skills for their full participation in the broad provision of an effective and practical solution to community problems at a point in time. Community development helps to improve and empower groups of people and collection of individuals as well as by providing them with the needed skills required to improve wellbeing through the establishment of larger social groups working for a common agenda of the community and the nation at large. Thus, community developers should promptly understand how to work with people and more importantly how to affect the communities positively within the larger social institution context (Sung, 2014). Community development in Nigeria has helped in reducing illiteracy and sickness. It has also to some extent helped in improving the standards of living of the people. Through the activities of community development cultural, economic and social conditions of communities has improved, thus enabling members of the community to contribute meaningfully to their community and the society in general. Community development to some extent helps to eradicate or reduce abject poverty in Nigeria. This is done through the provision of social amenities such as road, water, hospital and electricity. Community development helps to improve basic necessities of life of the people through the provision of items such as food, shelter, health service and education in Nigeria. The paper therefore, appraised the effective policy implementation as panacea for community development.

Public Policy

Policy is seen as course or principle of action proposed or adopted by individuals, groups, organisations or government. Policy is seen as being central to the operation and activities of both private and public organizations. However, a policy option made by groups or individual is referred to as private policy while the one made by the government is regarded as public policy. Here, we are concerned with policies of government known as public policy. Though public policy is viewed from different perspective, thereby generating varied definition of the concept, but what is gamine is that it is the principled guide to action taken by the government of the state with regards to a class of issues in a manner consistent with law and institutional customs. In the view of Egonwan (2019) it is a governmental programme of action, while to Okoro (2005), policy refers to hard patterns of resource allocation represented by projects and programmes designed to respond to perceived public problems or challenges requiring government action for their solution. Contributing to the concept of public policy, Ezeani, (2006) sees it as the proposed course of action which government intends to implement in respect of a given problem or situation confronting it. Ikelegbe (2006) states that public policy is the integrated course and programmes of action that government has set and the framework or guide it has designed to direct action and practices in certain problem areas. Public policy is mode setting action which showcases the direction and guides the way to the realization of certain goals and objectives desired by the government. Some of these public policies in Nigeria in different sectors include; the National Policy on Education, National Population Policy, National Housing Policy, Poverty Alleviation Policy among others.

Public policy entails government plan and guiding strategy at addressing a social problem. It provides intervention, services and public works, and the framework citizens' responsibility to the state on specified issues. Public policies are varied, and they cover diverse sectors of national and international engagements (Mead, 2013). Public policy could be traced back to the early periods of the constitution of government and governance over a specified territory. Even when such plans were not ascribed as public policy as known and used in contemporary times, their content, structure and implementation within specified territories by governing authorities grant such plans the nomenclature and context of public policy when viewed with contemporary lens. Contemporary public policy has its roots in the enlightenment period, which theoretically

deconstructed the notions of the transcended all-knowing benevolent monarch and advanced the consciousness of government (state) and citizenship in social contract (Schmidt 2014). The nexus between a responsible government and citizenship well-being justifies public policy as a government intervention for human and nation development.

Purpose of Public Policy on Community Development

Government make policies for various reasons. Government and governance operate through policies to resolve identified problems. According to Nnadozie (2016), public policies are tools of the state through which the government addresses the problems and needs of the people in any country. In the course of doing this, the country moves forward; that is to say, the society develops. It is worthy to know that, different types of public policy serve specific purpose which include the following:

- i. **Extraction of resources from domestic and foreign environment:** Government formulate policies and oversee their implementation to ensure that valuable talents, resources that nature bequeath its people and environment are explored adequately for improved living condition of her people. Without sufficient frameworks put in place, most of the abundant human and natural resources of God would not be fully tapped. Policies of government intending to reduce cost of governance to beef up allocation on basic services falls under this typology. In order to realize the extractive purpose of public policy, a combination of extractive and regulatory policies is needed.
- ii. **Distribution of resources/benefits:** Public policies also enable the government to perform her distributive/allocative functions in a state. Using appropriate frameworks, the government allocate money, goods and services to individuals, groups and nationalities under her authority. Fairness and equity in such allocation brings about unity and enduring progress while the opposite courts tensions. Nigeria government utilizes her fiscal revenue allocation formula in sharing fiscal resources to federal, state and local governments
- iii. **Regulation of human and organization behaviour:** Policies are germane in the moderation of conducts of individuals, groups and organisations in the society. With adequate and necessary rules/frameworks put in place, the elements that make up the society would destroy themselves and society itself. Life would be in the state of nature,

brutish, wicked, harsh and survival of the fittest. Through requisite laws/policies, abnormal behaviours that threaten quality and safe living are abhorred. Through regulatory policies, government checkmates threatening behaviours in the short and long run.

- iv. **Motivation/exhortation of citizens and institutions:** As Obamwonyi and Aibieyi (2014) noted, public policies serve symbolic purposes. By this, laws are formulated that recognize and appreciate particular modes of behaviour just as its regulatory policies control negative ones. With specific policies, government recognize persons and institutions that have distinguished themselves. The appreciation motivates such individuals to do more for society and serve as incentive to others.

Formulation of Public Policies

Public policies are formulated by policy makers. The term policy makers are subject to debates. Some see policy makers as the political class in the executive and legislative arms of government. Others believe that the bureaucracy/civil service are key stakeholders in policy making, hence are policy makers (Obikeze & Anthony, 2014). This is what is referred to politics/administration dichotomy. However, in modern times due to the permanence of career officials, their expertise and skills in management, they have come to play an active role in policy formulation through their association with political functionaries.

By formulation of public policy is meant a process or activities involved in the making/creation of policies for good governance. In formulating good public policies, due considerations are usually given to the prevailing economic conditions, availability of relevant information and the nature and extent of public involvement. Public involvement in the formulation of public policies is very important because it helps in the implementation stage. People easily obey or accept policies they took part in formulating than the ones that are forced on them. Hence, pluralist theory of policy formulation, partisan mutual adjustment as well as think tank are accepted in public policy formulation discourse because despite the fact that decision making is the constitutional responsibility of the executive, modern government has come to accommodate many interests and groups. Therefore, it is now more of politics-administration interaction than dichotomy.

Processes of Formulating Public Policies

Generally, formulation of public policies follows processes as identification of the problem, development of alternatives courses of action, analysis of alternatives, and selection of one alternative/policy choice.

Identification of problems: This stage involves demands and pressures from interest groups and political parties on legislature for action to resolve a public problem bordering on human needs, deprivations, or dissatisfaction (Okeke, 2001). Here, efforts are made to assess the claims or agitations calling for actions or inaction. This is to ascertain the imperativeness or otherwise for the clamour for change. The idea behind this stage is to convince the policy makers on the veracity of the push for action. A thorough process in this stage would establish that actually there is a problem enough to justify calls for policy-that is policy problem. It is only when an agitation for change is established as a policy problem that it is accommodated on decision table (policy agenda) of policy makers for deliberations. It is important to note that policy problems are not just admitted into the policy agenda. It is a product of serious politics for and against such intentions. Strong political leadership of pressure group admiring change, occurrence of crisis, protest activities, pressure from the media and international organisations come to force government/policy makers to accept a policy problem for discussion (policy agenda) (Okeke, 2001).

Development of alternative courses of actions: This is a stage where different options capable of addressing the issue/problem on the agenda are considered. The policy issues are submitted for careful study and research within the bureaucracy or by a hired consultancy group, after which recommendations are presented to the executive for considerations. All the key technical and some non-technical dimensions are closely scrutinized and assessed. The goals of the policy are prioritized, the means of achieving them identified, the time requirements for each goal established, and the physical and human resources requirements determined.

Analysis of alternatives: The various options developed and considered are compared to ascertain their advantages over one another. The alternative with the highest opportunities and reasonable costs, qualify for the last stage, the selection of one alternative or policy choice.

Policy choice: In policy choice, the alternative course of action with the brightest potentials is selected for approval and implementation.

Causes of Public Policy Failures in Nigeria that Hinder Effective Delivery of Community Development Programmes

Some of the reasons most public policies in Nigeria either failed to secure needed outputs or follow established pattern set for their execution or end up achieving unplanned results which are largely negative are explained below:

- a. **Influence of international institutions, especially the World Bank and International Monetary Fund:** These bodies and their likes wield direct and tremendous influence on Nigeria public policies. This is more so given the fact that Nigeria depends on them and their affiliate bodies such as Paris and London Clubs for loans and financial assistance, as well as debt-rescheduling (Nnadozie, 2016). These financial institutions have been responsible for designing major public policies/programmes in Nigeria. In the first place, they are not created to serve Nigeria and developing countries for free. They are business ventures for national government very dominant in their management. They apply universal development format in drawing development programme for poor nations of the world even when they hardly understand poverty, illiteracy, hunger and other common maladies particular in developing countries as he who wears the shoe knows where and how it pinches him.
- b. **Duplication of agencies involved in implementation:** It is commonly said that too many hands spoil the dish. Policy makers generally underestimate the complexity and difficulty of coordinating the task of agencies involved in implementing programmes. In Nigeria, the execution of certain development programmes cut across two to three ministries and departments of government (Ayogu, Ezugwu & Bello, 2019). A development programme for job creation for youths like the present N-Power scheme involves the Ministry of Agriculture, Youths and Sports Development, Office of the Vice President and Ministry of Humanitarian and Disaster Management. These duplications of agencies in implementing such programmes increases undue bureaucracy. This is even more problematic when the agencies involved disagree among them on the principles of the programme.

- c. **Lack of coordination or inadequate communication:** Where the policy intentions are not properly spelt out through the requisite organizational channels, the policy will hardly be put into effect (Okeke, 2001). This is a major problem in public policy implementation in Nigeria. Lack of coordination in this manner leads to different structures working at crossroads and not only wasting public funds but also constitute bureaucratic nuisance.
- d. **Policy or programme being implemented by agencies whose interests do not necessarily coincide with those of the policy makers:** This is a serious matter in Nigeria, especially where the bureaucracy are only involved at implementation stage. Since the agencies may not be involved at the early stage of designing the programme, the interests/understanding of the tenets of the policy might be at variance with that of the policy makers. Hence, the policy is dead on arrival.
- e. **Disconnection between policy makers and those the policy policies are meant to serve:** In most cases, public policies are not only separated in the initiation and formulation from the implementing agencies but also from the target population to benefit from such intervention. Public policy making and implementation in Nigeria is largely elitist. They are designed and forced down on the target population (Ayogu, Onah & Agboeze, 2013). The government usually operate top-down which alienates the people from the policies. It is sad that in some communities, the leadership just receive contractors executing programmes for them without any serious consultation or inputs from them. Surely, such programme even when completed will not be sustained.
- f. **Crises of public policy, programme, project ownership:** This is yet another major problem with public development programmes in Nigeria. Since in most cases the community involvement is minimal, if at all, they do not own the projects. Their consents were not reasonably sought and obtained during the planning processes of the programme, no commitment on their part either in cash or kind etc.; they see the project as government's, not theirs. It is strange that development partners would complete a project in a community and name it after itself instead of the community in question. The ownership crises extend to levels of government and agencies of same level of government. The levels of government or their agencies struggle over whose authority

the programme fall into or ought to. This scenario where it is the case suffocates such program irrespective of the objectives.

- g. **Prebendal administrative practices:** Administration of development programmes is beset with a lot of hiccups. These ranges from undue delays in the execution of the plan, increased cost beyond the earlier projected cost, inflation, inferior construction, poor investment strategies with the attendant poor returns among others (Okeke, 2001) explained three areas of confusion and incompetence with regards to policy implementation administration. These are lack of trained expert to administer complex programmes/projects vital to economic development, lack of political support/will for civil servants and bureaucrats, and casual manipulation of statistical data to conform to political requirement by developing countries' bureaucrats. This leads to planning with erroneous or misleading data.
- h. **Economic and political constraints:** Most Third World countries lack the capacity to fund their development projects. The search for foreign assistance in form of loan or grants is handicapped by serious strings attached to it. Thus, the economy is not buoyant and supportive enough. But in the case of Nigeria, it is more of political constraints than economic considering the wealth of the nation. On the political constraints, it is to be noted that in plural societies, particularly in the Third World countries, there is unequal distribution of political power. The lopsided distribution of political power has other multiplier effects; prevalence of political corruption which tends to rock the entire bureaucracy and poor salary structure which makes public servants to settle for kick-backs and bribery. Under corrupt atmosphere, policies cannot be meaningfully implemented, hence their failures.

Consequences of Public Policy Failures on Community Development Programmes in Nigeria

No doubt when public policy fails in whatever perspective failure of policy is seen, it comes with huge costs on the masses and the government at large. Some of these effects of public policy failure in Nigeria are:

- i. **Waste of Human and Material Resources:**

Public policy constitutes social investment with huge capital involved. From conception of a public policy to evaluation, it involves sunk cost in money, time, technology and human resources (Andrew, 2018). More to this is high expectations of the people hoping to witness a positive change. When eventually a particular public policy or programme fails to deliver positive outputs or implemented inefficiently, the precious resources which would have been invested elsewhere are wasted. This is not good for any economy, not to talk of Nigeria that is in serious need of public policy/programme outcomes to reduce the suffering of her citizens.

ii. Loss of confidence/trust:

Constant failure of public programmes to alleviate the hardship of the citizens is a demotivation to trust the leaders and display patriotic behaviors. Failure of public policies courts dissatisfaction and increases peoples' apathy in issues involving the government. This manifests in voter apathy, extremism and bigotry. The loss of confidence by extension is erosion of legitimacy. This is what any government would seek to avoid at all cost. Loss of legitimacy can lead to bloody riots, revolution, loss of lives and property and general breakdown of law and order.

iii. Social and economic backwardness:

Poor implementation of public policies leads to development of underdevelopment. It increases poverty, illiteracy and deprivations generally. With negative developments, human capital will not improve and individual as well as institutional capabilities would wane (Obamwonyi & Aibieyi, 2014; Agbazure, 2020).

iv. Poor image among comity and nations:

A nation notorious for public policy failures and abandonment suggests unpopular government/leadership. As the citizens lack trust and confidence in such regime with high failure of policies and their outputs, so is the international community and development partners. Foreign direct investment will also be low because such environment is not safe for business following the discontent of her citizens. Such a place is volatile, insecure and lacking requisite infrastructure to propel investment.

Instances of Public Policy/Programme Failures in Nigeria

From independence until now, no government, military or civilian has gone without introducing good policies with noble intentions for the people of Nigeria. However, the fact that Nigerians are still living in darkness with rationed power supply, threatened by staggering unemployment, poverty rates, illiteracy and insecurity is a pointer of failed policies and programmes. There are various instances of public policy/programme collapses in agriculture, education, health, rural development as well as nation building. A review of a few of these policies/programmes suffices for sober reflection.

N-power scheme

The scheme was set up by the All Progressive Change government of President Muhammadu Buhari on 8th June, 2016 to resolve the problem of youth unemployment and grantee social development. The government created the scheme as a component of its National Social Investment Programme to provide a structure for large scale and relevant work skills acquisition and development and to ensure that each participation will learn and practice most of what is necessary to find or create work. N-power scheme is targeted at youths between 18-35 years who may be graduates or non-graduates. It is expected to run for 2 years after which beneficiaries (graduates) would be engaged in the states' and federal government ministries, departments and agencies. It was made up of six categories before N-knowledge was recently added. They are N-teach, N-health, N-agro, N-build, N-creative and N-tech (Okogba, 2017). While N-teach and N-health are for graduates with NYSC certification or exemption and graduates of NCE and health certificates from schools/colleges of health, others are for non-schooled youths. The federal government recruited 500,000 youths in the 1st batch of the school with stipends of ₦30,000 per month with tablet phones. By 2019, a total ₦270 billion was estimated to have been spent on the scheme from 2016.

However, Erunke (2022) observed disappointments with the scheme and which graduated its 1st and 2nd batches in 2019. Apart from intermittent delays in the payment of stipends, exited beneficiaries have not been absorbed in the MDAs either at the states or federal levels as promised. There was also ownership problem between the Office of the Vice-President where the

scheme was initially domiciled and later the Ministry of Humanitarian Services and Disaster Management and problem of lack of effective monitoring and control from places of primary assignment (PPAs) as stipends were paid electronically without any form of clearance from PPAs. For two years now, exited beneficiaries have been in the streets confused and frustrated.

Trademoni:

Trademoni is an aspect of the federal government social empowerment programme code named, the Government Enterprise and Empowerment programme (GEEP). The programme was set up in 2016 by President Muhammadu Buhari to provide microcredit to traders, farmers, and artisans, petty traders (Ayogu, Udeme & Ecoma, 2019). It grants interest free loans of between ₦10,000 to ₦300,000 in graduating scale of ₦10,000, ₦20,000, ₦50,000, ₦100,000; and ₦300,000. The startup amount depends on the size of trade. The programme is funded by the Bank of Industry (BOI).

However, the manner the money was disbursed in markets during the 2019 general election period made the exercise to be seen as vote buying venture by the APC government. The scheme apart from the use of BVN, there is no effective monitoring for repayment as many that collected went away with the view that they have gotten their share of the national cake. It is unclear how many persons that repaid money collected in full or accessed the full ₦500,000 (Ayogu, Udeme & Ecoma, 2019). There was equally alleged politicization as there were insinuations that markets in some parts of the country benefited more without justifications. Tradermoni targeted mostly traders in urban markets that have organized unions and abandoned rural market women who actually needed it. Former president Olusegun Obasanjo allegedly described the scheme as “out-rightly idiotic programme” for side-lining the rural traders in favour of urban counterparts.

SURE-P

The subsidy reinvestment and empowerment programme was birthed by the former president of Nigeria, Dr. Goodluck Ebele Jonathan in 2012. The programme was based on the resolve of the Goodluck administration to reinvesting the Federal Government savings from fuel subsidy removal on critical infrastructure projects and social safety net programme with direct impact on the citizens of Nigeria. It was part of the transformation agenda of federal government. The scheme was headed at various times by Dr. Christopher Kolade, General Martin Luther Agwai and Mr. Ishaya Dare Akau. The objectives involved provision of employment for employed

youths, and reduction of social vulnerability among the group in the country through the mechanism of the policy.

However, just like other policies/programme before and after it, SURE-P ended up enriching the elite class. Unemployment in Nigeria has not abated. Interns of SURE-P were not absorbed. The graduates were sent to secondary and primary schools to teach even without due tutelage. The only benefit is that interns were placed on ₦30,000 stipends per month which has long stopped, leaving former interns who could not get other means of livelihood confused.

Conclusion

Effective implementation of public policies are instruments through which the government proposes to address the challenges of society. However, findings from this paper suggests that uncontrollable influence of international institutions, duplication of agencies involved in policy implementation and crises of public programme/project ownership among others have not allowed public policies in Nigeria to be effectively implemented. They usually fail. Consequently, such failure resulting in poor implementation of development policies and programmes is detrimental to the corporate existence of people of various communities in particular and Nigeria in general. This results in waste of human and material resources, sparks loss of confidence/trust of government by the citizens as well as battered image of the country in the comity of nations.

Recommendations

In order to ensure adequate/efficient and effective policy implementation in community development programmes, the following recommendations/suggestions are hereby provided:

1. There is the need to delink of our development programmes from the unusual influence of international institutions and their agents. This is difficult but possible.
2. Policy formulators should get themselves abreast with the social, economic and environmental situation of the various communities in which such meaningful programmes and projects will be implemented. This will enable them to properly define the problems and give them the direction they are headed towards.
3. Policy implementation should be on soldier-go-soldier-come basis. Government should be a continuum. Which government formulated a particular policy should be needless,

what should be of paramount importance is the interest of the users. That is, those who are benefitting should be of concern so long such policy is feasible and achievable.

4. The government should maintain discipline among its officials. Corruption must be stamped out. A mechanism that ensures proper monitoring of the men and money involved should be put in place. Only people with good track records should be involved in serious assignment and such people must have been seen as patriots from their conducts.
5. In formulating policy, provision should be made in case there is an unexpected occurrence that could lead to the death/alteration of such policy. The policy makers should avoid being overconfident and ambitious as this affect implementation of policies.
6. Political will should also be considered as one of the indispensable factors for effective policy implementation in government policy formulation strategies. Political implies support for a policy by top government functionaries. This is because government sometimes formulates policies but lack the political, social and economic commitment to implement.

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CHALLENGES AND OPPORTUNITIES: A STUDY OF COMMUNITY INVOLVEMENT IN AGAIE RURAL AREA OF NIGER STATE, NIGERIA
BY

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ABSTRACT

There are challenges and opportunities of community involvement in achieving sustainable education in the Agaie rural area of Niger State, Nigeria. Recognizing that inclusive and sustainable education relies significantly on active local participation, the research investigates how community stakeholders, parents, religious leaders, and local authorities contribute to educational processes. Using a mixed-methods design, the study sampled 300 respondents, including teachers, parents, and education officers. Data were gathered through questionnaires and semi-structured interviews. Findings reveal that while communities demonstrate high commitment in terms of infrastructure and enrollment advocacy, they are facing constraints such as low literacy levels, gender bias, and limited financial empowerment. Despite these setbacks, notable opportunities such as cultural influence, communal leadership, and religious mobilization offer strong foundations for educational development. The study recommends that capacity-building programs, inclusive policy dialogues, and educational incentives be initiated to enhance community ownership of sustainable education.

Keywords: Community, Participation, Sustainable, Education, Rural, Development, Challenges, Opportunities.

Introduction

Education is a crucial tool for transforming societies, particularly in developing countries where challenges of equity, access, and quality remain pressing. In rural parts of Nigeria, such as Agaie in Niger State, these challenges are compounded by poverty, cultural norms, and infrastructural

deficits (UNESCO, 2023). To achieve Sustainable Development Goal 4, which targets inclusive and equitable quality education for all, there is a growing consensus that communities must play an active role in educational processes.

Community involvement refers to the deliberate engagement of local people in decision-making, planning, implementation, and evaluation of educational activities (Epstein et al., 2021). In rural communities, this participation can manifest in the form of parental support, local governance input, volunteer teaching, or even mobilization of resources. According to Afolabi and Abdulrahman (2023), such involvement enhances not only educational access but also relevance and sustainability. The case of Agaie is particularly instructive due to its strong traditional leadership structure and religious influence, which significantly shape community behavior. However, despite these potential assets, the area still grapples with low literacy rates, teacher shortages, and inadequate learning environments (Aliyu & Musa, 2023).

The effectiveness of community involvement remains inconsistent due to lack of formal structures for participation and limited policy support. Several studies have affirmed that when communities are empowered and organized, they can transform education outcomes in marginalized regions. For example, Oladele and Ahmed (2022) noted that community-based school committees in Katsina led to increased girl-child enrollment and reduced dropout rates. Yet, many rural communities lack the training and institutional frameworks necessary for such results.

The study addresses the knowledge gap by focusing specifically on Agaie, a locality with both challenges and rich opportunities for sustainable educational transformation. It aims to analyze community roles, identify obstacles, and evaluate latent capacities that can be leveraged for better educational outcomes. The findings will provide valuable insights for policymakers and development agencies operating in similar rural contexts.

Statement of the Problem

Despite various governmental and non-governmental efforts to promote education, many children in Agaie rural communities remain out of school or experience interrupted schooling due to socioeconomic and cultural barriers. Although the community is recognized as an essential partner in achieving educational goals, its participation is often informal and sporadic (UNICEF, 2022). Schools in Agaie suffer from a lack of adequate infrastructure, low teacher

morale, and poor parental engagement—factors that significantly hinder educational progress. A critical concern is that while community support exists, it is often limited to physical labor or fundraising, with minimal involvement in school governance, curriculum development, or quality assurance. This narrow scope limits the community's potential impact.

Furthermore, traditional and religious values, while occasionally supportive, sometimes reinforce harmful gender stereotypes that obstruct girls' education (Bello & Okonjo, 2023). Existing research on community involvement in education in Niger State often generalizes findings across senatorial zones without recognizing the uniqueness of rural localities like Agaie. This gap makes it difficult to design localized interventions that reflect the area's socio-cultural and economic realities. Moreover, limited empirical data on the challenges and opportunities specific to Agaie restrict effective educational planning (Musa & Salihu, 2023).

On the strength of the above challenges, the study argues that the available opportunities may not be exploited by the communities and lack of their participation may drastically be a major setback to educational development in the region. Specifically, there will be high low literacy levels, rampant gender bias, and limited financial empowerment. Therefore, the study is timely and necessary, because it examines the lived experiences of stakeholders in Agaie, their levels of participation, and the structural or cultural factors, which are affecting their opportunities in contributing to sustainable education in the region.

Objectives of the Study

The objectives of the study are to:

1. Assess the challenges hindering effective community involvement in achieving sustainable education in Agaie rural area.
2. Identify the existing and potential opportunities that enhance community participation in education in Agaie.
3. Recommend strategies for improving community engagement in the sustainable delivery of education in Agaie.

Research Questions

1. What are the main challenges facing community involvement in sustainable education in Agaie rural area?
2. What opportunities exist for improving community engagement in education in Agaie?

3. What strategies can be adopted to enhance community participation for sustainable education in Agaie?

Methodology

The study employed a mixed-methods research design integrating quantitative and qualitative approaches to gain a comprehensive understanding of community involvement in Agaie. The target population included teachers, community leaders, parents, school administrators, and local education officers. A sample of 300 participants was selected using stratified random sampling to ensure representation from diverse community segments. Quantitative data were collected using a structured questionnaire consisting of 15 items, categorized under challenges, opportunities, and strategies for community involvement. Responses were rated on a four-point Likert scale. Qualitative data were obtained through key informant interviews with 12 local leaders and focus group discussions with selected parents and teachers. Quantitative data were analyzed using descriptive statistics such as frequencies, means, and standard deviations, while qualitative data were subjected to thematic analysis. Ethical clearance was obtained from the Niger State Ministry of Education. Participation was voluntary, and confidentiality was maintained throughout the research. The reliability of the instrument was ensured through a pilot test, yielding a Cronbach's alpha of 0.87, indicating high internal consistency.

Results

Research Question One: What are the main challenges facing community involvement in sustainable education in Agaie rural area?

Table 1: Frequency, Mean and Standard Deviation on Challenges Facing of Community Involvement in Education

Item	SA	A	D	SD	Mean	Std. Dev	Decision
Low literacy among parents hinders participation	102	124	54	20	3.03	0.88	Agree
Gender roles limit women's engagement in school activities	88	112	68	32	2.86	0.94	Agree
Economic hardship limits parents' ability to support education	109	120	43	28	3.03	0.91	Agree
Poor communication between schools and community	95	98	77	30	2.76	0.97	Agree
Community lacks awareness of their roles in education	110	113	50	27	3.02	0.93	Agree

Table one, which addresses the challenges of community involvement in sustainable education in Agaie, reveals several deeply rooted issues hampering active participation. The data shows that low literacy among parents is one of the most prominent challenges, as reflected by a high mean score of 3.03. This suggests that many parents in Agaie may not fully understand the processes, significance, or expectations of their roles in their children's education, thereby limiting meaningful engagement. Similarly, economic hardship, with an equally high mean score of 3.03, significantly constrains parents' ability to support educational initiatives financially or materially. Gender roles, another significant challenge (mean = 2.86), point to sociocultural norms that restrict women's participation in educational activities, such as attending PTA meetings or voicing concerns in school forums. Furthermore, poor communication between schools and communities (mean = 2.76) and a general lack of awareness of the community's role in school development (mean = 3.02) indicate systemic breakdowns in information dissemination and inclusive policy engagement. These findings align with national concerns over the marginalization of rural populations in educational planning (UNICEF, 2022; Bello & Okonjo, 2023).

Research Question Two: What opportunities exist for improving community engagement in education in Agaie?

Table 2: Frequency, Mean and Standard Deviation on Opportunities for Enhancing Community Involvement

Item	SA	A	D	SD	Mean	Std. Dev	Decision
Community leaders can mobilize educational support	120	115	40	25	3.10	0.91	Agree
Religious platforms can promote education advocacy	118	110	42	30	3.05	0.94	Agree
PTA meetings can be used to address school challenges	112	120	38	30	3.04	0.92	Agree
Youth groups can volunteer in education-related activities	97	108	64	31	2.85	0.95	Agree
Cultural festivals can include educational themes	85	114	66	35	2.79	0.98	Agree

Table two above, highlights the opportunities for enhancing community involvement and points to a number of promising avenues that can be harnessed to boost sustainable education in Agaie. Foremost among these is the mobilizing power of traditional and religious leaders, who received the highest support (mean = 3.10 for local leadership and 3.05 for religious advocacy). This

underscores the influence of indigenous structures in shaping community perceptions and actions toward education. Also significant is the role of PTA meetings (mean = 3.04), which remain one of the most active platforms for parent-school interaction. Youth group involvement (mean = 2.85) and cultural festivals (mean = 2.79) also present opportunities for community mobilization, especially for campaigns promoting enrollment, retention, and behavioral change. These opportunities point to the presence of social capital within the community that, if effectively coordinated, can drive large-scale participation in education development efforts. Scholars like Abdulrahman and Musa (2023) support this view, suggesting that rural communities in Northern Nigeria possess embedded cultural systems that, when reoriented toward education, produce positive results.

Research Question Three: What strategies can be adopted to enhance community participation for sustainable education in Agaie?

Table 3: Frequency, Mean and Standard Deviation on Strategies for Promoting Sustainable Education

Item	SA	A	D	SD	Mean	Std. Dev	Decision
Organize community education sensitization workshops	122	118	35	25	3.12	0.90	Agree
Create inclusive school governance committees	104	120	46	30	2.99	0.93	Agree
Involve traditional leaders in school planning	115	108	44	33	3.01	0.94	Agree
Provide incentives for community volunteers	89	102	69	40	2.75	0.98	Agree
Promote female representation in educational forums	101	111	58	30	2.93	0.95	Agree

Table three above, presents responses on the strategies that could enhance community participation in sustainable education, and the results reflect strong agreement on several actionable solutions. Foremost is the need for sensitization workshops to educate community members on their expected roles (mean = 3.12), which indicates a strong desire for knowledge and capacity-building interventions. Establishing inclusive school governance structures (mean = 2.99) and involving traditional leaders in planning (mean = 3.01) are also viewed as essential steps toward institutionalizing participation and fostering accountability. Providing incentives for community volunteers (mean = 2.75) and promoting gender inclusion (mean = 2.93) further highlight the need to address both motivational and structural gaps in participation. Together,

these strategies emphasize a multi-pronged approach to strengthening the community's voice in educational development—combining education, representation, and rewards. The data strongly support recommendations from policy experts like Onuoha and Ibe (2022), who advocate for structured engagement platforms that encourage community ownership and ensure sustainability beyond donor interventions.

Discussion of Findings

Findings from Research Question 1 reveal that literacy levels, financial constraints, and entrenched gender roles are critical barriers to community involvement. These confirm the assertions of Mohammed and Olayemi (2023), who observed that parental illiteracy and economic exclusion prevent full engagement in school development. Moreover, poor communication channels between schools and communities reflect a gap in stakeholder coordination (Yusuf & Danjuma, 2022).

In terms of opportunities, the findings from Research Question 2 highlight the role of community leaders, religious institutions, and youth networks in educational promotion. Abdulrahman and Musa (2023) emphasized similar opportunities in Sokoto State, where religious advocacy significantly increased enrollment in Qur'anic and formal education. The utilization of cultural events for educational mobilization is also promising, particularly for creating localized awareness (Ogundipe & Aliyu, 2022).

The discussion of Research Question 3 indicates that strategic interventions—like creating inclusive governance structures and offering training—can unlock community potential. Onuoha and Ibe (2022) support this view, arguing that participatory platforms not only boost morale but foster accountability. The findings also underscore the importance of promoting gender equity and recognizing the pivotal role women play in home and school-based educational decisions.

Conclusion

This study concludes that while challenges exist in Agaie rural communities—ranging from socioeconomic to cultural constraints—the potential for impactful community participation in education remains strong. Strategic engagement with local institutions, coupled with capacity development and inclusive governance, can transform education delivery in the region. Therefore, empowering communities with knowledge, platforms, and motivation is essential for sustainable educational outcomes in Niger State.

Recommendations

The study recommends as follows:

1. Educational authorities should organize regular sensitization workshops to equip community members with knowledge about their roles in school development and governance.
2. Traditional and religious leaders should be formally integrated into school management structures to foster advocacy, transparency, and accountability.
3. Inclusive governance mechanisms, including female and youth representation, should be developed to ensure that community participation reflects the diversity of stakeholders.

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AWARENESS AND MOBILIZATION STRATEGIES IN COMMUNITY DEVELOPMENT PROGRAMMES IN NIGER STATE, NIGERIA

BY

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ABSTRACT

Awareness and mobilization strategies in enhancing community participation in development programmes within Niger State, Nigeria is timely and important subject of study. Community development relies significantly on the involvement of local stakeholders, and the degree of participation is often influenced by the level of awareness and the effectiveness of mobilization strategies employed. In regions like Niger State in Nigeria, where socio-economic challenges persist, community development efforts are often hindered by low engagement resulting from inadequate communication and mobilization mechanisms. On this strength, the research adopts a descriptive survey design, utilizing both qualitative and quantitative methods to capture data from 400 respondents across three senatorial districts. The findings reveal that awareness creation through media, traditional institutions, and peer engagement significantly improves participation rates. Similarly, mobilization strategies that include community meetings, sensitization campaigns, and participatory planning sessions are crucial in ensuring sustained involvement in development initiatives. Results also highlight disparities in participation across different demographics, suggesting the need for tailored mobilization approaches. Urban communities reported higher participation levels compared to rural counterparts due to better access to information and resources. The study concludes that awareness and mobilization are not just supportive tools but foundational pillars for participatory development. It recommends enhancing local communication infrastructures, engaging traditional and religious leaders, and institutionalizing participatory practices in local governance structures. This article contributes to the ongoing discourse on participatory governance and offers policy insights for improving community engagement in development planning and implementation in Niger State.

Keywords: Awareness, Mobilization, Community, Participation, Development, Programmes, Rural, Engagement.

Introduction

Community development remains a vital tool for socioeconomic progress, especially in developing regions like Niger State, Nigeria. Participation of community members in development programmes ensures that projects are aligned with local needs and priorities, enhancing sustainability and ownership (Bello & Ahmed, 2023). However, participation is not automatic; it is largely shaped by awareness and the methods through which communities are mobilized. These elements determine whether individuals perceive development efforts as relevant and beneficial, thereby influencing their willingness to participate.

Awareness involves not only informing people of the existence of programmes but also educating them on their roles, benefits, and the implications of non-participation. Mobilization strategies, on the other hand, involve the organized efforts to bring people together toward a common developmental goal. This includes the use of traditional leaders, media, community groups, and religious institutions to spread messages and encourage active involvement (Mohammed & Olayemi, 2023). In many parts of Niger State, communication gaps, literacy challenges, and cultural practices hinder the effective dissemination of development-related information.

Community members are more likely to contribute their time, resources, and ideas when they understand the purpose and processes involved in a development programme. According to Onuoha & Ibe (2022), when communities are engaged from the planning phase, their participation becomes meaningful and productive. In contrast, imposed programmes often face resistance or neglect due to perceived irrelevance or lack of ownership. Therefore, awareness creation and mobilization should be seen not as optional strategies but as essential phases in community development processes.

In Niger State, which is largely rural and diverse in culture, developing effective awareness and mobilization strategies requires a deep understanding of local dynamics. Traditional and religious leaders play a critical role in shaping opinions and behaviors. Thus, their inclusion in awareness and mobilization campaigns can significantly improve community response (Abdulrahman & Musa, 2023). Radio broadcasts in local languages, town hall meetings, and drama presentations have also proven effective in passing developmental messages across different literacy levels.

Moreover, mobilization is more effective when it involves participatory planning where community members contribute to identifying problems, setting priorities, and deciding on implementation strategies. This participatory approach has been shown to improve transparency, trust, and accountability in community development processes (Ogundipe & Aliyu, 2022). Therefore, enhancing participation is less about enforcing compliance and more about facilitating informed engagement.

The effectiveness of awareness and mobilization strategies also depends on the quality of the messages delivered and the credibility of the messengers. Communities tend to respond better when the message aligns with their values and comes from a trusted source. Hence, development agents must carefully design communication content and select appropriate channels and messengers to improve community participation (Salihu & Adepoju, 2022). Understanding the barriers to participation, including socio-cultural, economic, and political factors, can also aid in crafting effective mobilization techniques. It also aims to identify the challenges limiting the effectiveness of these strategies and propose context-specific solutions. By focusing on this under-researched yet critical area, the study aims to fill a knowledge gap and provide practical recommendations for policy and implementation in Niger State and similar contexts.

Statement of the Problem

Despite numerous efforts by government and non-governmental organizations to implement community development programmes in Niger State, community participation remains relatively low. Many of these programmes fail to achieve their intended outcomes because the targeted beneficiaries are either unaware of their existence or do not understand their relevance. This disconnect is largely due to ineffective or absent awareness creation and mobilization strategies (Ogunyemi & Bakare, 2023).

When people are uninformed or disengaged, they are less likely to contribute meaningfully to development efforts, leading to underutilization of resources and project failures. In several communities, development initiatives are met with skepticism or indifference, especially when introduced without prior sensitization. This is common in rural areas where literacy levels are low, and access to information is limited. Without tailored communication strategies that resonate with local languages and values, community members often view such programmes as top-down impositions rather than collaborative opportunities (Nwachukwu & Abdullahi, 2023).

The result is poor turnout at meetings, low volunteerism, and minimal local investment in development projects.

Another major challenge is the neglect of traditional and religious institutions in programme mobilization. These institutions are often the most trusted sources of authority and influence in many communities. Ignoring them in planning and dissemination efforts results in missed opportunities to leverage their credibility to encourage participation. Studies by Onuoha and Ibe (2022) emphasize that inclusion of local leaders in awareness and mobilization campaigns can drastically improve participation outcomes. Gender dynamics also pose significant challenges to mobilization in some areas of Niger State. Women, who play vital roles in community development, are often excluded from information flow and decision-making due to cultural norms. This exclusion undermines the effectiveness of community development programmes and limits their potential impact. Mobilization strategies that are not gender-sensitive often reinforce these inequalities instead of addressing them (Bello & Ibrahim, 2023).

Equally problematic is the lack of feedback mechanisms in most mobilization processes. Communities are rarely given the opportunity to express concerns, provide suggestions, or evaluate the programmes they are mobilized to support. This one-way communication model discourages active participation and reinforces perceptions of manipulation or political exploitation. When people feel that their voices do not matter, their willingness to participate diminishes (Nwankwo & Musa, 2023).

Finally, there is a scarcity of empirical data on the actual effectiveness of various awareness and mobilization strategies in Niger State. Without such evidence, policy-makers and programme designers are unable to make informed decisions about which strategies work best in specific contexts. This study seeks to fill this gap by providing evidence-based insights into the dynamics of community awareness and mobilization in Niger State and how they affect participation.

Addressing these problems is critical not only for the success of community development programmes but also for enhancing democratic governance and social cohesion. Communities that are aware and actively engaged are better positioned to identify local problems, mobilize resources, and hold authorities accountable. Therefore, improving awareness and mobilization is not just a communication challenge it is a governance imperative.

Objectives of the Study

The objectives of the study are to:

- i. Assess the various awareness strategies used to inform communities about development programmes in Niger State.
- ii. Examine the mobilization techniques used to encourage participation in community development programmes.
- iii. Evaluate the relationship between awareness/mobilization and the level of community participation in development programmes.

Research Questions

To effectively guide the investigation and achieve the stated objectives, the following research questions have been formulated:

- i. What awareness strategies are currently used to inform communities about development programmes in Niger State?
- ii. What mobilization techniques are employed to encourage community participation in development programmes?
- iii. How do awareness and mobilization strategies influence the level of participation in community development programmes in Niger State?

Methodology

This study adopted a descriptive survey research design to explore the relationship between awareness/mobilization strategies and community participation in Niger State's development programmes. The mixed-methods approach was selected to enrich the findings with both numerical data and narrative insights. This approach allows for the triangulation of findings, providing a more holistic view of the issues under investigation (Creswell & Plano Clark, 2022).

The study population comprised community leaders, local government officials, youth group members, women leaders, and heads of community-based organizations (CBOs) across the three senatorial zones of Niger State—namely Niger North, Niger East, and Niger South. These stakeholders were selected due to their direct involvement or influence in development programme planning and implementation. A multistage sampling technique was employed. First, nine local government areas were randomly selected (three from each zone), after which stratified sampling was used to ensure inclusion of both urban and rural respondents.

A total of 400 respondents were sampled, comprising 180 males and 220 females to reflect the gender dynamics of community engagement. The primary data collection instrument was a structured questionnaire consisting of 30 items divided into three thematic sections: awareness strategies, mobilization techniques, and community participation levels. The instrument was validated by experts in community development and communication studies at Ibrahim Badamasi Babangida University, Lapai. In addition to questionnaires, 12 key informant interviews were conducted with community heads, NGO staff, and government officials to obtain qualitative insights. Interview questions focused on the effectiveness of existing strategies, perceived community responsiveness, and areas for improvement. Responses were transcribed and analyzed thematically, providing contextual depth to the quantitative data. Data analysis for the quantitative component was carried out using SPSS version 26. Descriptive statistics such as frequencies, percentages, means, and standard deviations were used to summarize responses. Inferential statistics such as Pearson's correlation were used to examine relationships between variables—particularly between awareness/mobilization and participation levels.

Results

Research Question One: What awareness strategies are currently used to inform communities about development programmes in Niger State?

Table 1: Frequency, Mean and Standard Deviation on Awareness Strategies and Their Effectiveness

Awareness Strategy	SA	A	D	SD	Mean	Std. Dev	Decision
Radio announcements in local languages	120	145	80	55	2.86	1.02	Agree
Posters and flyers distribution	98	121	90	91	2.64	1.09	Agree
Community town hall meetings	112	129	81	78	2.71	1.08	Agree
Social media messaging	75	97	122	106	2.36	1.14	Disagree
Religious institutions' announcements	108	137	84	71	2.78	1.05	Agree

The data in Table 1 shows that traditional awareness strategies like radio broadcasts (Mean = 2.86), town hall meetings (Mean = 2.71), and religious announcements (Mean = 2.78) are more effective in reaching the grassroots than digital platforms like social media (Mean = 2.36). This

supports the findings by Yusuf & Danjuma (2022), which emphasized the importance of contextualizing communication strategies in rural areas.

Research Question Two: What mobilization techniques are employed to encourage community participation?

Table 2: Frequency, Mean and Standard Deviation on Community Mobilization Techniques

Mobilization Technique	SA	A	D	SD	Mean	Std. Dev	Decision
Use of traditional leaders	130	139	78	53	2.87	1.01	Agree
Community drama and jingles	102	121	98	79	2.62	1.09	Agree
Door-to-door sensitization	88	117	101	94	2.50	1.10	Agree
Mobilization through schools	97	112	96	95	2.54	1.11	Agree
Political town hall campaigns	81	99	112	108	2.38	1.13	Disagree

Findings reveal that traditional leaders (Mean = 2.87) and schools (Mean = 2.54) are effective mobilization channels. Drama-based awareness and door-to-door campaigns were moderately effective, while political campaigns were the least trusted. This reflects the findings by Salihu & Adepoju (2022), who argued that trust plays a vital role in mobilization success.

Research Question Three: How do awareness and mobilization strategies influence the level of participation in community development programmes in Niger State?

Table 3: Frequency, Mean and Standard Deviation on Perception of Respondents on the Influence of Awareness and Mobilization Strategies on Participation

Items	SA	A	D	SD	Mean	Std. Dev	Decision
Well-informed communities participate more in development programmes.	128	142	76	54	2.86	1.01	Agree
Mobilization through traditional leaders increases participation rates.	115	136	83	66	2.75	1.06	Agree
Communities that receive regular sensitization contribute more to project success.	119	134	79	68	2.78	1.04	Agree
Poor awareness results in low turnout for development activities.	121	130	84	65	2.77	1.07	Agree
Participation improves when communities are involved from the planning phase.	123	129	81	67	2.79	1.05	Agree

The responses in Table 3 indicate that communities that are well-informed are more likely to participate (Mean = 2.86), highlighting the critical role of communication in engagement efforts. The consistency in mean scores across all five items (ranging from 2.75 to 2.86) suggests that both awareness and mobilization are not just complementary but jointly essential in promoting effective participation. The perception that low awareness correlates with poor turnout (Mean = 2.77) is particularly noteworthy, affirming the assumption that communities often disengage when they lack adequate information or feel excluded from the development process. Furthermore, involving communities from the planning phase—rather than simply informing them post-design—yields better outcomes, as shown by a mean score of 2.79. This participatory approach is widely endorsed in development literature for its ability to build trust, foster accountability, and encourage long-term commitment (Olaniyan & Mohammed, 2023).

Discussion of the Findings

The analysis from Research Question 1 reveals that awareness strategies are a major determinant of community participation. Localized methods such as radio in native languages and religious announcements had higher effectiveness compared to modern digital methods. This is consistent with the findings by Mohammed & Olayemi (2023), who reported that over-reliance on internet-based outreach in rural areas often leads to exclusion rather than inclusion. Awareness strategies must therefore align with the communication realities of the target audience.

Further analysis shows that awareness efforts are more successful when they are frequent, community-based, and trusted by the population. The strong performance of religious institutions in awareness dissemination is particularly significant. Religious leaders command respect and influence, and when equipped with accurate information, they can become vital partners in awareness campaigns (Bello & Ahmed, 2023).

In addressing Research Question 2, the study shows that mobilization through traditional and cultural mechanisms yields better results than political or digital channels. Community dramas and town announcements not only pass messages but also engage people emotionally and culturally. These findings support the assertions of Onuoha & Ibe (2022) that effective mobilization in African societies often hinges on cultural relevance and trust.

Door-to-door sensitization, though resource-intensive, also showed moderate effectiveness. It offers personalized engagement and can be particularly useful for reaching women and elderly

citizens who might not attend public meetings. The relatively poor performance of political town hall campaigns suggests a trust deficit in politically-driven development messaging. Communities may view such efforts as campaign rhetoric rather than genuine mobilization (Ogundipe & Aliyu, 2022).

For Research Question 3, the strong correlation between awareness/mobilization and participation underscores the importance of these strategies in driving community development. Communities that are informed and mobilized are more likely to attend meetings, contribute resources, and monitor project implementation. This aligns with the findings of Nwachukwu & Ibrahim (2023), who emphasized that participatory development hinges on how well citizens are engaged at the outset.

Moreover, the qualitative interviews revealed that awareness alone is insufficient unless followed by continuous engagement and feedback. Participants noted that communities become disengaged when communication is only one-way or when they are not updated on project progress. This finding is supported by Salihu & Adepoju (2022), who stressed the need for interactive communication in participatory governance.

Finally, gender-sensitive mobilization emerged as a critical issue. Women's participation was reportedly lower in areas where mobilization strategies failed to address cultural barriers. This highlights the need for inclusive approaches that consider the unique constraints facing different demographic groups.

Conclusion

This study set out to explore the role of awareness and mobilization strategies in enhancing participation in community development programmes in Niger State. It concludes that these strategies are central to ensuring active and sustained community involvement, which is critical for the success and sustainability of development interventions.

For the first research question, the findings affirm that awareness strategies rooted in local context—such as traditional media and community-based forums—are significantly more effective than digital approaches in reaching rural populations. Communities respond better when messages are delivered in local dialects and through trusted platforms. Therefore, for awareness efforts to be impactful, they must be context-sensitive and accessible to all segments of the community.

In response to the second research question, the study finds that mobilization techniques such as the involvement of traditional leaders, school-based outreach, and participatory planning yield higher participation levels. Mobilization that is inclusive, consistent, and coordinated produces greater community ownership and accountability, further enhancing project success rates.

The answer to the third research question confirms a direct correlation between the intensity and quality of awareness/mobilization efforts and the level of community participation. Communities that are engaged early, informed continuously, and empowered to contribute meaningfully demonstrate higher involvement and stronger commitment to project outcomes.

Moreover, the conclusion emphasizes that successful community development does not happen in isolation—it requires the proactive involvement of citizens who feel informed, valued, and empowered. Thus, development agencies and governments must treat awareness and mobilization not as secondary considerations but as foundational pillars in programme planning and execution.

To achieve inclusive and sustainable development in Niger State, there must be a deliberate investment in culturally responsive communication, strategic community mobilization, and mechanisms for continuous dialogue and feedback.

The study's findings call for a shift from sporadic, event-based mobilization to an institutionalized framework for community engagement that is participatory, gender-sensitive, and transparent. Without this shift, development initiatives risk underperformance, resistance, or outright failure.

Recommendations

Based on the findings and conclusions drawn from this study, the following recommendations are proposed to improve community participation in development programmes through effective awareness and mobilization:

1. Development agencies and local governments should utilize indigenous communication channels such as local-language radio, town announcers, and religious institutions to reach grassroots communities effectively. These platforms are trusted, accessible, and culturally relevant.

2. Traditional leaders should be formally integrated into programme planning and mobilization structures. Their influence and credibility can significantly boost participation, especially when combined with structured incentives or training.
3. Mobilization efforts must be tailored to address the unique barriers that limit women's participation. This includes organizing female-only meetings, using women leaders as mobilizers, and holding events at times and locations accessible to women.

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Yusuf, K., & Danjuma, R. (2022). *Challenges of Inclusive Education in Nigeria: The Role of Community Sensitization*. Nigerian Journal of Educational Psychology, 13(2), 61–78.

**RELATIONSHIP BETWEEN QUALITY AND STANDARD OF INFORMATION
COMMUNICATION TECHNOLOGY (ICT) AND TEACHERS' UTILAZATION,
STUDENTS' ACADEMIC PERFORMANCE IN FEDERAL GOVERNMENT
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ABSTRACT

The study examined relationship between quality and standard of information communication technology and teachers' Utilazation, students' academic performance in Federal Government Colleges, North-East, Nigeria. One research question was answered and two hypotheses were tested at 0.05 level of significance. The study adopted correlational research design. The population of the study comprised of fifteen (15) Federal Government Colleges in North East, Nigeria. Cluster sampling technique was used to selects twelve (12) Federal Government Colleges. Purposive sampling technique was used to select one thousand three hundred and five (1,305) students who sat for Senior Secondary Certificate Examination (SSCE) conducted by WAEC in 2022/23 academic session. Average percentage scores was used to ranked the students' academic performance in each school. Checklist and Pro-forma were used as the instruments. The data collected was analysed using statistical software (SPSS). Descriptive statistics such as frequency counts and percentage were used to answer the research question. Spearman's rank correlation coefficient was used to test hypotheses. The findings revealed that there was inadequate availability of Information Communication and Technology (ICT) facilities in Federal Government Colleges, North-east, Nigeria. There was significant relationship between ICT infrastructural facilities and student/teachers' academic performance in Federal Government Colleges, North-East, Nigeria. Based on the findings, recommendations were made to the authorities concerned amongst which Federal Government College Administrators should be transformational in putting measure in providing ICT facilities and Parents Teachers Association (PTA) should contribute towards the provision of adequate ICT facilities to secondary schools.

Key words: *Quality, Standard, Information Communication Technology, Teachers' Utilization, Students' Academic Performance*

Introduction:

Education is the only dependable medium that can sharpen the behavior of citizens of every Nation, it enables the nation in producing quantitative and qualitative development for the national economic, social and political development. Physical resources are necessary inputs for sustainable Education that ascertained teaching and learning process. Material or physical resources otherwise known as infrastructural facilities enhance teaching thereby making the process of learning meaningful. Infrastructural facilities therefore refer to material resources such as apparatus, equipments or facilities in relation to Information and Communication Technology (ICT) in secondary schools. Mallum (2018) opined that school facilities refer to all the material resources such as the buildings, spaces and equipments used by both teachers and students to enhance the teaching and learning process. Owimana and Andala (2020) concurred that quality and standard of infrastructural facilities plays a significant role in the development of students and teachers academic performance. This indicated that school facilities are used to improve standards in the attainment of Educational goals and objectives.

A benchmark was established to maintain the requirements for improving the minimum standard of facilities. Federal Ministry of Education Quality Assurance Service (2021) reported the minimum standard of facilities required in secondary schools as follows. Every learner should have access to appropriate facilities in a class; a safe working and learning environment to be provided; adequate facilities for learners' development to be provided. This implies that ICT facilities should be provided for instructions based on the required number of 40 students per class which was set to develop and improved effective internal and external mechanisms to enhance learners' performance.

The study examine relationship between quality and standard of information communication technology and teachers' utilization, students' academic performance. ICT facilities are technological tools and resources used to create, communicate, disseminate, store, and manage information in secondary school Education. Muhammad, Irfanullah, Siraju and Hafiz (2015) asserted that technological resources include computers, the Internet, broadcasting technologies and the telephone. Ntul, Ekam and Isong (2010) argued that ICT facilities are instructional materials that provide sound, visuals or both to the sense organs during the teaching and learning process. They further asserted that ICT facilities are categorized into audio, visual or audiovisual.

The audio instructional materials refer to those devices that make use of the sense of hearing like radio, audio tape recording, and television. Visual instructional materials on the other hand, are those devices that appeal to the sense of sight such as the chalkboard, chart, slide, and filmstrip while, the audio-visual instructional material however, is a combination of devices that appeal to the senses of both hearings and seeing such as television, motion picture and the computer. Similar research such as Amuchie (2015) and Gabadeen, Alabi and Akinubi (2015) found that the extent of availability of ICT resources in secondary schools is very low and the extent of utilization of ICT resources in teaching and learning is equally very low. The study also revealed that ICT resources were not available in the schools for the use of teachers and students for learning activities. It was also found that many factors were perceived by the teachers and principals as constraints to the effective utilization of ICTs in teaching and learning in secondary schools. They include; poor power supply and lack of adequate training for teachers in the use of ICTs in teaching.

However, Academic performance in this study refers as an indicator of a students' performance obtainable in grade as Distinction, in other words; it is the product of what the student gets after a particular measurement of behavior. Austine (2018) asserted that students' academic performance can be regarded as the observable and measurable behavior of a student in both internal and external examinations. This can be evaluated in several ways such as written teacher-made tests, oral tests, performing presentations, turning in homework and participating in class activities and discussions.

Statement of the Problem

The researcher observed through research that Federal Government Colleges in the North East Educational Zone have encountered challenges in their operations due to the activities of Boko Haram (BH) where school infrastructural facilities in some colleges were destroyed and vandalized. It was observed that many federal Government colleges in the North East had been relocated from their normal stations to either state metropolis or cities to save operations. Researchers have shown that a group of ten to fifteen students were found utilizing one facility in both practical instructions and examinations. Furthermore, students, teachers and administrators have shown concern over the state of infrastructural facilities in Information and Communication Technology (ICT). The decline of infrastructural facilities has been a concern to Parents and

Communities who expressed their worries over the state of school facilities. It was against these perceived problems that the researcher assesses the quality and standard of ICT infrastructural facilities as a panacea for students' academic performance in Federal Government Colleges in North East, Nigeria.

Objectives of the Study

The objectives were to assess:

1. availability of Information and communication Technology (ICT) apparatus and facilities in Federal Government colleges in North East, Nigeria;
2. relationship between Information and communication Technology (ICT) and students' academic performance in Federal Government colleges in North East, Nigeria; and
3. relationship between Information and communication Technology (ICT) and teachers' utilizations in Federal Government colleges in North East, Nigeria

Research Question

1. What is the level of availability of Information and communication Technology (ICT) apparatus and facilities in Federal Government colleges in North East, Nigeria?

Hypotheses

The following hypotheses were tested in the study at 0.05 level of significance

H₀₁: There is no significant relationship between Information and communication Technology (ICT) and students' academic performance in Federal Government colleges in North East, Nigeria

H₀₂: There is no significant relationship between Information and communication Technology (ICT) and teachers' utilizations in Federal Government colleges in North East, Nigeria

Methodology

The study examined relationship between quality and standard of information communication technology and teachers' Utilazation, students' academic performance in Federal Government Colleges, North-East, Nigeria.. The research design adopted for this study was correlational design. The population of the study comprised of fifteen (15) Federal Government Colleges in North East Nigeria. Twelve (12) Federal Government Colleges were selected with One thousand three hundred and five (1,305) students who sat for the Senior Secondary Certificate

Examination (SSCE) conducted by WAEC in 2022/23 academic sessions. Cluster sampling was used to draw the sample size of all the twelve (12) schools. Purposive sampling technique was used to select one thousand three hundred and five (1,305) students who sat for Senior Secondary Certificate Examination (SSCE) conducted by WAEC in 2022/23 academic session. Average percentage scores was used to ranked the students' academic performance in each school. Two research instruments were used: Checklist and Pro-forma. The Checklist was used to seek information on the Availability of ICT apparatus and facilities in Federal Government colleges in North East, Nigeria; Pro-forma was used to determine the percentage scores of one thousand three hundred and five (1,305) students who sat for Senior Secondary Certificate Examination (SSCE) conducted by WAEC during 2022/23 academic session from the twelve (12) Federal Government Colleges in North East, Nigeria. The population of the students was converted to percentage scores based on the twelve (12) Federal Government Colleges, North East, Nigeria. Statistical software (SPSS) was used to analysed the data. Descriptive statistics such as frequency counts and percentage was used to answer the research question. Spearman's rank correlation Coefficient at 0.05 level of significance was used to test hypotheses one and two.

Results:

Research Question One: What is the level of availability of Information and communication Technology (ICT) apparatus and facilities in Federal Government colleges in North East, Nigeria?

Descriptive statistics such as frequency counts and percentage were used to answer the research question and the summary was presented in table 1.

Table 1: Results of frequency and percentage on availability of infrastructural facilities in Information and Commutation (ICT) in Federal Government Colleges North-East, Nigeria

Information and Communication Technology Center	Adequately Available		Inadequately Available		Not Available	
	Freq.	%	Freq.	%	Freq.	%
Desktops	9	60	3	40	0	0
Tablets	4	26.7	6	40	2	33.3
Internet service	6	40	4	46.7	2	13.3
Electrical board	6	40	4	40	2	20
Wireless connectivity	4	26.7	6	46.7	2	20
Projector	5	33.3	5	46.7	2	20

Source: Field Study, 2023

Table 1 answered research question 1, the table revealed the frequency count and percentage of availability of infrastructural facilities in information and communication technology center in 12 Federal Government Colleges North-East, Nigeria. The results revealed an average of 6 colleges (37.8%) were found adequately available and averages of 4 colleges (43.4%) were found inadequately available while, averages of 2 colleges (18.8%) were found not available.

Hypothesis One: There is no significant relationship between Information and communication Technology (ICT) and students' academic performance in Federal Government colleges in North East, Nigeria

Spearman's rank correlation Coefficient at 0.05 level of significance was used to test hypothesis 2 and the summary was presented on table 2.

Table 2: Results of Spearman's Rank Order on Relationship between Information and Communication Technology and Students' Academic Performance in Federal Government colleges in North East, Nigeria

Variables	N	r	P-Value	Sig. level	Remark
Information and Communication Facilities	12	.330	.230	.05	Significant
Students Academic Performance	12				

Table 2 determined the degree of relationship between Information and communications Technology (ICT) and students' academic performance in Federal Government colleges in North-East Nigeria. From the result obtained, there was a weak positive correlation between Information and communications Technology (ICT) and students academic performance, ($r = .33$, $P < 0.05$) Consequently, as the Information and communications Technology (ICT) increase, the students' academic performances also increase. Thus, there was a substantial evidence to reject the null hypothesis that there is no significant relationship between Information and communications Technology (ICT) and students' academic performance in Federal Government colleges in North East, Nigeria.

Hypothesis Two: There is no significant relationship between Information and Communication Technology (ICT) and teachers' utilizations in Federal Government colleges in North East, Nigeria

Spearman's rank correlation Coefficient at 0.05 level of significance was used to test hypothesis 3 and the summary was presented on table 3.

Table 3: Results of Spearman's Rank Order on Relationship between Information and communication Technology (ICT) and teachers' utilizations in Federal Government colleges in North East, Nigeria

Variables	N	r	P-Value	Sig. level	Remark
Information and Communication Facilities	12	.622	.427	.05	Significant
Teachers' Utilizations	12				

Table 3 determined the degree of relationship between Information and communication Technology (ICT) and teachers' utilizations in Federal Government colleges in North East, Nigeria. From the result obtained, there was a positive correlation between Information and communication Technology (ICT) and teachers' utilizations, ($r = .62$, $P < 0.05$). Consequently, as the Information and communication Technology (ICT) increase, the teachers' utilizations also increase. Thus, there was a substantial evidence to reject the null hypothesis that there is no significant relationship between Information and communication Technology (ICT) and teachers' utilizations in Federal Government colleges in North East, Nigeria.

Discussion of the Findings

Research question one (1) assessed the level of availability of Information and communication Technology (ICT) apparatus and facilities in Federal Government colleges in North East, Nigeria. The result revealed an average of 6 colleges (37.8%) was found adequately available and averages of 4 colleges (43.4%) were found inadequately available while, averages of 2 colleges (18.8%) were found not available. This implies that there was an average level of availability of ICT resources. Unlike in the research conducted by Amuchie (2015) who investigated information and communication technology resources availability and utilization for teaching and learning in Secondary Schools in the two local government areas in Ardo kola and Jalingo, Taraba state. The findings of the study showed that the extent of availability of ICT resources in secondary schools in Ardokola and Jalingo was very low. The extent of utilization of ICT resources in teaching and learning was equally very low. ICT resources were not available in the schools for the use of teachers and students for learning activities.

Hypothesis one (1) determined the degree of relationship between Information and communication Technology (ICT) and students' academic performance in Federal Government

colleges in North East, Nigeria. The study revealed that there was a positive relationship between information and communication technology and students' academic performance in Federal Government Colleges, North-east, Nigeria. The result obtained shows a moderate positive correlation with coefficient of ($r = .33$, $P < 0.05$). This showed that as information and communication technology facilities increases, the students' academic performance also increase significantly. The finding of the study tally with Utibe-abasi (2013) investigated the availability and accessibility and utilization of Information and Communication Technology (ICT) in secondary school physics curriculum delivery who found a positive impact of ICT facilities and students' academic performance. Similarly, Abdulnasir (2021) investigated impact of information and communication technology facilities on students' academic performance in public and private schools of Kano State and fund a significant impact of ICT facilities and students' academic performance in private and public secondary schools of Kano State.

Hypothesis two determined the degree of relationship between Information and communication Technology (ICT) and teachers' utilizations in Federal Government colleges in North East, Nigeria. From the result obtained, there was a positive correlation between Information and communication Technology (ICT) and teachers' utilizations, ($r = .62$, $P < 0.05$). Consequently, as the Information and communication Technology (ICT) increase, the teachers' utilizations also increase. The finding was similarly to Abdulnasir (2021) investigated impact of information and communication technology facilities on teachers instructional delivery in public and private schools of Kano State and fund a significant impact of ICT facilities and teachers instructional performance in private and public secondary schools of Kano State.

Conclusion

The study examined relationship between quality and standard of information communication technology and teachers' Utilazation, students' academic performance in Federal Government Colleges, North-East, Nigeria. Based on the analyses and the findings, it is evident to show that the Information and communication Technology (ICT) facilities were inadequate; A positive correlation between ICT and teachers' utilizations and finally the students' academic performance in WAEC examinations was relatively significant during 2022/23 academic session from the twelve (12) Federal Government Colleges, North-East Zone, Nigeria.

Recommendations

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

1. The Federal Government College Administrators should be transformational by putting measures across borders to ensure that laboratory facilities are adequately provided.
2. The State Governments should extend their school policies toward assisting Federal Government Colleges across their various states.
3. Parents Teachers Association (PTA) should contribute towards the provision of adequate ICT facilities to secondary schools.

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