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JOURNAL OF THE DEPARTMENT OF ARTS AND SCIENCE EDUCATION KWARA STATE UNIVERSITY, MALETE, KWARA STATE

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The **Journal of the Department of Arts and Science Education, Kwara State University, Malete**, invites submissions of original, scholarly manuscripts for its forthcoming issue. This journal serves as a platform for researchers, educators, and practitioners to share innovative ideas, research findings, and theoretical perspectives that advance the fields of Arts and Sciences Education.

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I feel highly honored to present to our esteemed readers the Maiden edition of our Journal of Arts and Science Education, the brain child of the Department of Arts and Science Education, Faculty of Education, Kwara State University, Malete, Nigeria.

This edition showcases our unwavering dedication to foster interdisciplinary and knowledge advancement across the different, yet, related fields of Education, Arts, and Sciences.

The scholarly efforts therein brings to bear the dynamism of creativity and critical thinking towards connecting the town and gown by examining issues that are of both academic significance and social relevance through innovative approach as required by our educational landscape.

From explorations of general education, pedagogical dexterity that leverages technology in the Arts and Sciences by underscoring the 21st century outlook to education in our ever-changing world, this edition offers renewed insights and empirical-based perspectives.

I extend my heartfelt gratitude to our esteemed authors, whose commitment to scholarship has spurred the uniqueness of this publication. To all our peer reviewers, who objectively and rigorously ensured the quality of every article, I appreciate you.
I specially appreciate the ever-dynamic editorial team for their assiduity in bringing this publication into the lime light.

As you interact with the articles captured here, I hope you find inspiration to reimaging the possibilities of education at the intersection of Arts and Science.
The chapters were carefully arranged in parts to whet the scholarly appetite of our readers to breed a healthy dialogue among educators, researchers, and policymakers globally.

Thank you for being part of this scholarly efforts and I extend a hand of partnership in advancing the future of education through collaboration and technological innovation.

Sincerely yours,

SAFI, Lawal, Ph.D.
Editor-in-Chief

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EFFECT OF REALITY THERAPY ON THE MENTAL HEALTH OF PEOPLE LIVING WITH HIV/AIDS IN WUKARI EDUCATION ZONE

Ahmad B. M, Karfe S. A and Mariki A.
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Department of Guidance & Counselling, Faculty of Education.

Abstract
This quantitative study investigated the effectiveness of reality therapies in enhancing mental health outcomes among individuals living with HIV/AIDS in Taraba State, Nigeria. The study's population consisted of 9,203 people living with HIV/AIDS, from which a sample of 60 participants was randomly selected. Six research questions and six null hypotheses guided the study. The study adopted a quasi-experimental design of a pre-test, posttest non-randomized group. The sample of the study cuts across the two local governments that make up the Wukari Education Zone. The reality therapy intervention package comprised six weekly sessions, each lasting 60 minutes, conducted by a trained therapist. The descriptive and pair sample–t-test and analysis of covariance (ANCOVA) were used to test the null hypotheses. Based on the data collected and analyzed the following findings were discovered: The mean reduction in the effect of reality therapy on anxiety disorder on mental health problems among people living with HIV/AIDS in the Wukari education zone is 0.27. There was a significant effect of Reality Therapy on the anxiety of mental health problems among people living with HIV/AIDS in the Wukari Education Zone. The mean reduction in the effect of reality therapy on mental health problems among people living with HIV/AIDS in the Wukari education zone is 1.26. There was a significant effect of reality therapy on depression of mental health problems among people living with HIV/AIDS in the Wukari education zone. The difference in the effect of reality therapy on anxiety disorder of mental health of people living with HIV/AIDS in the Wukari Education Zone is 1.13. There was a significant difference in the effect of reality therapy on anxiety disorder of mental health of people living with HIV/AIDS in the Wukari Education Zone. The difference in the effect of reality therapy on depression of mental health of people living with HIV/AIDS in the Wukari Education Zone is 0.48. There was no significant difference in the effect of reality therapy on depression of mental health of people living with HIV/AIDS in Wukari Education Zone. It is therefore recommended that mental health physicians, psychologies, psychiatrists, and counsellors should be encouraged to use reality therapy on people living with HIV/AIDs in Taraba State, Nigeria. In conclusion, the use of reality therapy was based on identity quality, its formation, and change since a human have unaccountable behaviour when encountering anxiety and disconnections. Also, the therapy allows people living with HIV/AIDs to gain control over their choices and accept their responsibilities.

Keywords: Reality, Therapy, Mental Health & HIV/AIDS

Introduction
Despite significant advancements in Human Immunodeficiency Virus (HIV) prevention and treatment since its discovery, the virus remains a persistent global health threat. The Joint United Nations Programme on HIV/AIDS (UNAIDS) reports alarming statistics, highlighting the ongoing challenge. As of 2020, approximately 38 million people worldwide lived with HIV, with 1.7 million new infections occurring that same year. Furthermore, 690,000 AIDS-related deaths were recorded in 2020, underscoring the virus's devastating impact. However, this progress will not be sustained without addressing the Significant Mental Health problems among people living with HIV (PLWH) and people vulnerable to acquiring HIV. Mental Health problems help in making it is a critical barrier.

Accessing adequate healthcare is among the most challenging barriers to achieving the end of HIV (Aids, London,2019). In an article on what to know about mental health and HIV, Iquise (2021)

said that receiving a diagnosis of HIV and living with the condition can hurt a person's mental health. She further stresses that living with a serious condition such as HIV can affect a person's mental health and increase the risk of developing mood, anxiety, and other cognitive conditions.

The World Health Organization (2022) fact sheets state that one (1) in eight (8) people in the world live with a mental disorder. The mental disorder involves significant disturbances in thinking, emotional regulation, or behaviour. Globally, about 970 million people are living with mental health disorders anxiety, and depression (WHO,2022). In Nigeria, a survey report conducted by Africa Polling Institute(API,2019) and EpicAFRIC2020 estimated that 20-30 percent of the Nigerian population is believed to suffer from mental disorders and that this finding corroborates with 2016 WHO-AIMS report that claims about 20 million Nigerians suffer from mental illness of which a good numbers goes without professional assistance. In the Wukari Education Zone, institutional records show an estimate of more than a thousand suffering from mental health disorders especially on youths who are mostly on drugs. People living with HIV/AIDS are known to have great emotional and psychological needs, and they Neglect enormous support for coming to terms with their affliction status (Gemechu, 2014). HIV/AIDS is a complex and multifaceted disease that extends beyond physical symptoms, encompassing profound psychological and social implications. The disease is often accompanied by debilitating physical malfunctions, including chronic pain, shortness of breath, altered sexual functions, and disfigurement. Moreover, HIV/AIDS carries a heavy stigma, leading to devastating mental health consequences. The stigma surrounding HIV/AIDS can trigger a cascade of psychological distress, including anxiety, depression, fear, and suicidal tendencies. Individuals living with the disease often face uncertainty and unpredictability, worsened by the prospect of real and anticipated losses, such as declining health, physical decline, and death. Additional stressors, including unemployment, financial instability, and relationship breakdowns, can severely impact mental well-being. Research has consistently shown that the stigma surrounding HIV/AIDS can lead to increased psychological distress, diminished quality of life, and reduced treatment adherence (Sweileh, 2018). This underscores the urgent need for comprehensive mental health support and interventions tailored to the unique needs of individuals affected by HIV/AIDS.

The cumulative effect of these factors highlights the importance of addressing the psychological and social aspects of HIV/AIDS, alongside medical treatment. By acknowledging the complex interplay between physical and mental health, healthcare providers can develop more effective, holistic care plans that improve overall well-being for individuals living with HIV/AIDS. According to the World Health Organization, mental health is also predicted by individual-level characteristics, controlling for as many relevant individual-level characteristics as possible is particularly important because many of the characteristics that predispose one to mental health difficulties also increase the risk of delinquency approximately 36.7 million (95% CI, 30.8–42.9 million) people worldwide suffer from HIV (WHO, 2016). Across all age groups, people living with HIV (PLWH) have an increased risk of chronic complications and comorbidities, such as mental health disorders (WHO, 2014). There is a consensus opinion among psychologists (Tareke, Addisu & Abate, 2018) that the well-being of individuals consists entirely of two aspects, which are positive and negative effects. Psychological well-being thus is inclusive of both positive and negative aspects. To have a proper evaluation and measurement of well-being, both positive mental health, such as happiness and life satisfaction, and mental ill-health, such as anxiety and depression must be put into consideration (Wang, 2017.

Research suggests that positive mental health and mental ill-health are interconnected yet distinct concepts (Chen et al., 2015). They can be represented on two separate axes, where positive effects indicate mental health and negative effects signify mental ill-health. Supporting this notion, Wang (2017) referenced the Emotional Well-being Scale developed by Been et al. (2019), which demonstrated that positive and negative affect items are relatively independent. Studies have

shown that happiness comprises two primary components: positive and negative affects (Been et al., 2019). Notably, these variables exhibit limited correlation. However, items within the Global Well-being scale display increased intercorrelations. This distinction underscores the complexity of mental health and highlights the importance of considering both positive and negative aspects when assessing overall well-being. Depression is a prevalent comorbidity among People Living with HIV (PLWH), affecting approximately 15% to 60% of individuals with HIV (Jones, 2010). This comorbidity has severe consequences, leading to negative outcomes, including poor health outcomes and reduced quality of life (Himelhoch, Medoff, & Oyeniyi, 2007). Depression among PLWH is significantly associated with poor adherence to antiretroviral therapy, risky sexual behaviours, low quality of life, high plasma HIV viral load, low CD4 counts, rapid disease progression, and increased mortality (Mao et al., 2019; Hellmuth et al., 2017). As a medical staff member and student on practicum field experience, I have witnessed firsthand the devastating impact of depression on PLWH. Despite the gravity of this issue, a glaring knowledge gap exists in the Wukari Education Zone. Surprisingly, no empirical investigation has been conducted across all HIV/AIDS units to identify the major problems confronting PLWH and explore mitigation strategies. This study aims to bridge this knowledge gap by investigating the prevalence, correlates, and consequences of depression among PLWH in the Wukari Education Zone. The absence of empirical research in this region underscores the need for a comprehensive understanding of the challenges faced by PLWH. By examining the complex relationships between depression, HIV management, and quality of life, this study will provide valuable insights into effective mitigation strategies. Ultimately, this research will contribute to improving mental health outcomes and overall well-being for PLWH in the Wukari Education Zone. In light of the high prevalence of depression among PLWHIV and its negative consequences, more strategies and interventions have been implemented for PLWHIV with depression, such as pharmacotherapy and psychotherapy.

Reality therapy posits that although emotions are beyond our control, we have the power to govern our thoughts and actions. This therapeutic approach empowers individuals to take charge of improving their lives by making informed choices. However, people living with HIV/AIDS in the Wukari zone often struggle with decision-making and emotional regulation due to mental instability. Reality therapy offers a solution by reframing behaviour as conscious choices. By engaging in this form of counselling, individuals can transform their mental state and develop more effective coping mechanisms. At its core, reality therapy asserts that psychological symptoms stem not from mental health conditions, but from misguided choices aimed at fulfilling basic needs. According to this approach, individuals with HIV/AIDS can benefit from recognizing their capacity for self- directed change, accepting responsibility for their actions and emotions, identifying and challenging harmful behaviors, and developing more desirable actions to foster meaningful connections with others. By adopting reality therapy, people living with HIV/AIDS in the Wukari zone can enhance emotional regulation, improve decision- making skills, cultivate a sense of control and empowerment, and develop resilience and Coping strategies. Ultimately, reality therapy has the potential to significantly improve the psychological well-being and quality of life for individuals living with HIV/AIDS in the region. By providing a supportive and non-judgmental space, reality therapy can help individuals overcome mental health challenges, rebuild their lives, and rediscover their strength and resilience. This therapeutic approach aligns with the needs of people living with HIV/AIDS, who often face complex psychological and emotional challenges. By addressing these challenges through reality therapy, healthcare providers can offer a comprehensive and holistic approach to care, empowering individuals to take control of their lives and live with dignity and purpose.

Nigeria has the second largest HIV epidemic in the world, although HIV prevalence among adults is much less at 1.5% than other Sub-Saharan African countries such as South Africa with 20.4% and Zambia with 11.3%. As of 2019, the size of the Nigerian population living with HIV amounts

to 1.9 million people (UNAIDs, 2019), while the estimated number of people living with HIV/AIDS, in Taraba State is 127,167 with Wukari LGA is the most prevalent area with the virus followed by Gassol LGA then Zing LGA accordingly. Wukari LGA is the Largest LGA in terms of human population while Gassol LGA is the largest in landmark, Wukari LGA has a total population of 377,338 out of which 37,687 are confirmed to be living with HIV/AIDS. Until now, only one systematic review has focused on psychological interventions, including CBT, for PLWH with common mental disorders, such as depression and anxiety. However, the review only presented the characteristics of five eligible studies but did not use statistical techniques (meta-analysis) to combine the results. Thus, the evidence is rather limited (Chibanda, Cowan, Healy, Abas, & Lund, 2015). Reviews that are specifically focused on the studies that performed CBT on comorbid depression in PLWH to the best knowledge of the researcher are also inexistent. Several original studies have explored the impacts of CBT on patients with HIV and depression. However, the results have been diverse and a definite conclusion has not been reached. Thus, the present study aims to conduct a meta-analysis of randomized controlled trials (RCTs) and explore the effects of CBT on PLWH in Wukari Education zone, Taraba State, Nigeria.

The signs and symptoms of HIV vary depending on the stage of infection. Though people living with HIV tend to be most infectious in the first few months after being infected, many are unaware of their status until later stages. In the first few weeks after initial infection people may experience no symptoms or will experience an influenza-like illness like fever, headache, rash or sore throat. As the illness progressively weakens the immune system they develop and show other signs and symptoms such as swollen lymph nodes, weight loss, fever, diarrhea and cough. Without treatment, they could also develop severe diseases such as Tuberculosis (TB), streptococcus meningitis, severe bacterial infection, and careers such as lymphomas and Kaposi sarcoma (WHO, Fact Sheet 2012).

The relationship between physical illness and emotional states remains a critical focus in psychology. Human Immunodeficiency Virus (HIV)/Acquired Immune Deficiency Syndrome (AIDS) is a condition that requires such critical evaluation. Although there are many drugs for the management of those with HIV/AIDS, there is neither a vaccine for HIV nor a drug for the cure of AIDS (Antoni, Cruess, Klimas, Carrico, Maher, Cruess, 2005). Therefore, those with HIV/AIDS are left with the emotional burden of hopelessness, helplessness, and despair which could manifest as psychological distress, low self- esteem, and non-adherence to medication. Such conditions, invariably necessitate serious and timely psychological interventions in the management of HIV/AIDS patients.

The study will now seek to look at the timely intervention of the prevailing psychological problems that may be found in the PLWH in Wukari Education Zone. Mental health according to Christopher, Irene, Alan, Claire (2012), is the positive strivings through which an individual grows, matures, and accepts responsibilities, copes successfully. The mental health of people living with HIV is becoming an increasing concern worldwide; however, to date, this pressing issue has been largely ignored in global policy guidelines. Since 2013, under the "Four Frees, One Care" policy, it has become easier for people living with HIV in Nigeria to access HIV-related health care, but their psychiatric and psychological needs are yet seldom touched. HIV infection is regarded as a traumatic and stressful experience that can negatively affect mental health status and potentially lead patients into a cycle of physical and mental decline. Studies have shown that people living with HIV are more likely than the general population to exhibit mental health problems including depression, anxiety, and suicidality, as well as the harmful use of substances but these have not been adequately researched in Wukari Education zone of Taraba State. The chronic effects of HIV and antiretroviral therapy (ART) on the brain can also result in HIV-associated neurocognitive disorders. Poor mental health status can serve as a barrier to adequate antiretroviral therapy (ART) adherence, and consequently decrease quality of life and increase mortality.

Policies and programs designed to decrease the mental health burdens of people living with HIV are urgently needed, and appropriate response hinges on systematic information about mental health status.

Almost every individual has mental challenges depending on the stressor factor that triggers it, but still one has a different way and approach of maintaining it without leading to further degeneration of the whole body system this is different for those living with HIV/AIDS who think they are doomed forever. The thought of having HIV/AIDS only can lead to numerous health challenges apart from the virus itself, Among the numerous assumed health challenges faced by people living with HIV/AIDS in Wukari could be their mental health condition which could likely lead to psychological stressors like anxiety, depression, suicidal ideation, stress, stigmatization among others.

According to the Guidance newspaper, (2016), Taraba has an HIV prevalence of 10.5% which is three times the national average and the highest in Northern Nigeria which highlights that there could be a higher risk attached to the mental health issues which PLWH may continue to suffer giving rise to the need for a proper investigation. Given the above varying positions in the mediating factors of depression, and given the fact that depression rate has been rising with each successive generation – a trend that has been found not only in the United States and Canada but also in France, Germany, Italy, New Zealand, Taiwan and African countries including Nigeria (Cross-National Collaborative Group, 2020), this present study has become quite necessary and urgent based on current research findings that depression will become an even greater problem by the year 2020 (Duko, Geja, Zewude & Mekonen, 2018)). This study assumes that considering the failure of Pharmacotherapy to address the problems of PLWH, the use of CBT and reality therapies could address all the mental health problems of PLWH in Wukari Education Zone and raise their level of Psychological wellbeing. It is therefore against this backdrop that this study is to be carryout to investigate the effect of cognitive behavioural and reality therapies on the mental health of people living with HIV/AIDS in Wukari Education Zone, Taraba State.

Purpose

The main purpose of this study was to investigate the effect of reality therapy on the mental health of people living with HIV/AIDS in the Wukari education zone.

Specifically, the objectives of the study are to;

i. Determine the effect of reality on anxiety among people living with HIV/AIDS in Wukari Education Zone.

ii. Determine the effect of reality therapy on depression among people living with HIV/AIDS in Wukari Education Zone.

iii. Determine the difference in the effect of RT on anxiety among people living with HIV/AIDS in Wukari Education Zone Taraba.

iv. Determine the difference in the effect of RT on depression among people living with HIV/AIDS in Wukari Education Zone.

Research Questions

The study was guided by the following research questions:

1. What is the effect of reality therapy on depression among people living with HIV/AIDS in Wukari Education Zone?
2. To what extent does reality therapy reduce anxiety among people living with HIV/AIDS in the Wukari Education Zone?
3. Is there a significant difference in the effectiveness of reality therapy on depression and anxiety among male and female people living with HIV/AIDS in Wukari Education Zone?
4. What are the perceived benefits and challenges of implementing reality therapy among people living with HIV/AIDS in the Wukari Education Zone?

Hypotheses

The following null hypothesis was formulated to guide the study and tested at a 0.05 level of significance;

i. Reality therapy has no significant effect on reducing depression among people living with HIV/AIDS in Wukari Education Zone.
ii. Reality therapy has no significant effect on reducing anxiety among people living with HIV/AIDS in Wukari Education Zone.
iii. There is no significant difference in the effectiveness of reality therapy on depression and anxiety between male and female people living with HIV/AIDS in Wukari Education Zone.

Research Design

The research design that was adopted for the study was a quasi-experimental design of pre- pre-test, posttest non-randomized group.

Area of Study

The study was conducted in Wukari Education Zone of Taraba State, Nigeria. Wukari education zone is made up of two local governments namely; Wukari Local Government and Ibi local Government.

Population for the Study

The population for this study was 9,203. Comprised of all those who enrolled as an accumulative record of the four Health Facilities that give clients treatment in Wukari and Ibi local governments. The breakdown is as follows: Ibi-1659; CRCN comprehensive 803; Kwararrafa Hospital-714; Wukari General Hospital-6000. (Hospitals records, Oct 2023).

Sample and Sampling Technique

This study employed a purposive sampling technique to select 60 participants who met the inclusion criteria. The sample consisted of people living with HIV/AIDS receiving services at healthcare facilities in Wukari Education Zone.

Instruments for Data Collection

The study utilized standardized psychological assessment tools to measure depression and anxiety among participants. These tools included the Beck Depression Inventory (BDI-II), a 21-item self-report scale that assessed the severity of depressive symptoms, and the Beck Anxiety Inventory (BAI), a 21-item self-report scale that evaluated the severity of anxiety symptoms. Both instruments were selected due to their established reliability and validity in assessing depression and anxiety, providing a robust framework for data collection.

Reliability of the Instruments

The study utilized the Beck Depression Inventory (BDI-II), a well-established and widely used psychological assessment tool, to ensure a holistic and reliable measurement of depressive symptoms. The instrument's reliability was confirmed through pilot testing, yielding a Cronbach's alpha coefficient range of 0.73 to 0.92. Specifically, the internal consistency coefficient of the BDI-II was calculated to be $\alpha = 0.92$, indicating excellent reliability.

Method of Data Analysis

Descriptive statistics (mean and standard deviation) were used to summarize participants' scores. Inferential statistics were employed to test the hypotheses. Paired sample T-test and Analysis of Covariance (ANCOVA) were used to test all hypotheses at a 0.05 significance level.

Results

Research Question One

What is the effect of RT on the anxiety of mental health problems among people living with

HIV/AIDS in Wukari Education Zone?

Table 1: Mean Effect of RT on Anxiety of Mental Health Problems among People Living with HIV/AIDS in Wukari Education Zone

	Mean	N	Std. Deviation	d. Error Mean
Pre Anxiety in RT	1.76	30	1.26	.23
Post Anxiety in RT	1.49	30	.48	.08
Mean reduction	0.27			

Table 1 shows the mean effect of RT on the anxiety of mental health problems of 30 people living with HIV/AIDS in Wukari Education Zone. The table shows that the mean anxiety disorder before reality therapy is 1.76 with a standard deviation of 1.26. The table further shows that the mean effect of reality therapy on anxiety disorder after treatment is 1.49 with a standard deviation of 0.48. The mean reduction in the effect of reality therapy on anxiety disorder on mental health problems among people living with HIV/AIDS in Wukari education zone is 0.27.

Research Question Two

What is the effect of Reality Therapy on depression of mental health problems among people living with HIV/AIDS in Wukari Education Zone?

Table 2: Mean Effect of Reality Therapy on Depression of Mental Health Problems among People Living with HIV/AIDS in Wukari Education Zone

	Mean	N	Std. Deviation	d. Error Mean
Pre Depression in RT	2.38	30	1.43	.26
Post Depression in RT	1.12	30	.14	.02
Mean reduction	1.26			

Table 2 shows the mean effect of Reality Therapy on depression of mental health problems of 30 people living with HIV/AIDS in the Wukari education zone. The table shows that the mean depression before reality therapy is 2.38 with a standard deviation of 1.43. The table further shows that the mean effect of reality therapy on depression after treatment is 1.26 with a standard deviation of 0.14. The mean reduction in the effect of reality therapy on depression of mental health problems among people living with HIV/AIDS in Wukari education zone is 1.26.

Research Question Three

What is the difference in the effect of CBT and RT on anxiety disorder of mental health of people living with HIV/AIDS in Wukari Education Zone?

Table 3 shows the difference in the effect of RT on anxiety disorder of mental health of people living with HIV/AIDS in Wukari Education Zone. The table shows that 30 people living with HIV/AIDS received RT in Wukari Education Zone. The table shows that the mean anxiety disorder of people living with HIV/AIDS is 1.76 with a standard deviation of 1.26 before RT. The mean effect of received RT on anxiety disorder of people living with HIV/AIDS in Wukari Education Zone is 1.49 with a standard deviation of 0.48. The table shows a mean reduction of 1.40 for people living with HIV/AIDS who received RT in Wukari Education Zone. The difference in the effect of RT on anxiety disorder of mental health of people living with HIV/AIDS in Wukari Education Zone is 1.13 in favour of people living with HIV/AIDS who received RT in Wukari Education Zone. The summary of the pretest, posttest, and mean reduction in anxiety disorder of mental health of people living with HIV/AIDS in Wukari Education Zone

Research Question Four

What is the difference in the effect of CBT and RT on the depression or Mental Health of people

living with HIV/AIDS in Wukari Education Zone?

Table 3: Mean Effect of CBT and RT on Anxiety Disorder of Mental Health of People Living with HIV/AIDS in Wukari Education Zone

Therapies		PreBAI	PostBAI	Mean gain
	Mean	1.76	1.49	0.27
Reality Therapy	N	30	30	
	Std. Deviation	1.26	0.48	
Mean difference				1.13

Table 3 shows the difference in effect of RT on anxiety disorder of mental health of people living with HIV/AIDS in Wukari Education Zone. The table shows that 30 people living with HIV/AIDS received RT in Wukari Education Zone. The table shows that the mean anxiety disorder of people living with HIV/AIDS is 1.76 with standard deviation of 1.26 before RT. The mean effect of received RT on anxiety disorder of people living with HIV/AIDS in Wukari Education Zone is 1.49 with a standard deviation of 0.48. The table shows a mean reduction of 1.40 for people living with HIV/AIDS received RT in Wukari Education Zone. The difference in effect of RT on anxiety disorder of mental health of people living with HIV/AIDS in Wukari Education Zone is 1.13 in favour of people living with HIV/AIDS received RT in Wukari Education Zone. The summary of the pretest, posttest and mean reduction in anxiety disorder of mental health of people living with HIV/AIDS in Wukari Education Zone

Research Question Four

What is the difference on the effect CBT and RT on depression of Mental Health of people living with HIV/AIDS in Wukari Education Zone?

Table 4: Mean Effect RT on Depression of Mental Health of People Living with HIV/AIDS in Wukari Education Zone

Therapies		PreBDI	PostBDI	Mean gain
	Mean	2.38	1.12	1.26
Reality Therapy	N	30	30	
	Std. Deviation	1.43	0.14	
Mean difference				0.48

Table 4 shows the difference in effect of RT on depression of mental health of people living with HIV/AIDS in Wukari Education Zone. The table shows that the mean depression of people living with HIV/AIDS is 2.38 with standard deviation of 1.43 before RT. The mean effect of received RT on depression of people living with HIV/AIDS in Wukari Education Zone is 1.12 with a standard deviation of 0.14. The table shows a mean reduction of 1.74 for people living with HIV/AIDS received 1.26 people living with HIV/AIDS received RT in Wukari Education Zone. The difference in effect of RT on depression of mental health of people living with HIV/AIDS in Wukari Education Zone is 0.48 in favour of people living with HIV/AIDS received RT in Wukari Education Zone. The summary of the pretest, posttest and mean reduction in depression of mental health of people living with HIV/AIDS in Wukari Education Zone.

There is no significant effect of RT on anxiety disorder on mental health problems among people living with HIV/AIDS in Wukari education zone.

Hypothesis One.

There is no significant effect of RT on anxiety of mental health problem among people living with HIV/AIDS in Wukari Education Zone.

Table 9: Paired t-Test of Effect of RT on Anxiety of Mental Health Problem among People Living with HIV/AIDS in Wukari Education Zone

	Mean	N	Std. Deviation	t	df	Sig
Pre Anxiety in RT	1.76	30	1.26	1.752	29	.090
Post Anxiety in RT	1.49	30	.48			

Table 9 shows a decrease in BAI score from pretest (M = 1.76, SD = 1.26) to posttest (M = 1.49, SD = 0.48). The mean decrease in BAI score was 0.27. t(29) = 1.752; p = 0.000 < 0.05. Thus, the null hypothesis is rejected. There is significant effect of RT on anxiety of mental health problem among people living with HIV/AIDS in Wukari Education Zone. Thus, reality therapy has significant effect on anxiety disorder of mental health problems among people living with HIV/AIDS in Wukari education zone.

Hypothesis Two

There is no significant effect of RT on depression of mental health problem among people living with HIV/AIDS in Wukari Education Zone.

Table 11: Paired t-Test of Effect of RT on Depression of Mental Health Problem among People Living with HIV/AIDS in Wukari Education Zone

	Mean	N	Std. Deviation	t	df	Sig
Pre Depresiion in RT	2.38	30	1.43	4.865	29	.000
Post Depression in RT	1.12	30	.14			

Table 11 reveals a decrease in BDI score from pretest (M = 2.38, SD = 1.43) to posttest (M = 1.12, SD = 0.14). The mean decrease in BDI score was 1.26. t(29) = 4.865; p = 0.000 < 0.05. Thus, the null hypothesis is rejected. There is significant effect of RT on depression of mental health problems among people living with HIV/AIDS in Wukari education zone. Thus, reality therapy has significant effect on depression of mental health problems among people living with HIV/AIDS in Wukari education zone.

Hypothesis Three

There is no significant difference in effect of RT on anxiety disorder of mental health of people living with HIV/AIDS in Wukari Education Zone.

Table 12: ANCOVA of Anxiety Disorder of Mental Health of People Living with HIV/AIDS in Wukari Education Zone Due to Effect of RT

Dependent Variable: Post Anxiety in CBT and RT

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	3.144[a]	2	1.572	7.905	.001	.217
Intercept	21.854	1	21.854	109.888	.000	.658
PreBA	2.618	1	2.618	13.163	.001	.188
Therapies	**1.395**	**1**	**1.395**	**7.013**	**.010**	**.110**
Error	11.336	57	.199			
Total	132.697	60				
Corrected Total	14.480	59				

a. R Squared = .217 (Adjusted R Squared = .190)

Table 12 shows that F (1,57) = 7.013; p = 0.010 < 0.05. Thus, the null hypothesis is rejected. This implies that there is significant difference in effect of RT on anxiety disorder of mental health of people living with HIV/AIDS in Wukari Education Zone. Therefore, there is significant difference in effect of RT on anxiety disorder of mental health of people living with HIV/AIDS in Wukari Education Zone. The eta square of 0.110 shows that 11.0 percent of anxiety disorder of mental health of people living with HIV/AIDS in Wukari Education Zone can be attributed to therapy.

Hypothesis Four

There is no significant difference on the effect RT on depression of Mental Health of people living with HIV/AIDS in Wukari Education Zone Taraba.

Table 13: ANCOVA of Depression of Mental Health of People Living with HIV/AIDS in Wukari Education Zone due to effect RT

Dependent Variable: Post Depression in CBT and RT

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	.019[a]	2	.010	.457	.635	.016
Intercept	16.064	1	16.064	753.621	.000	.930
PreBD	.018	1	.018	.849	.361	.015
Therapies	**.000**	**1**	**.000**	**.009**	**.924**	**.000**
Error	1.215	57	.021			
Total	78.279	60				
Corrected Total	1.234	59				

a. R Squared = .016 (Adjusted R Squared = -.019)

Table 13 shows that F (1,57) = 0.009; p = 0.924 > 0.05. Thus, the null hypothesis is not rejected. This implies that there is no significant difference in effect of RT on depression of mental health of people living with HIV/AIDS in Wukari Education Zone. Therefore, there is no significant difference in effect of RT on depression of mental health of people living with HIV/AIDS in Wukari Education Zone.

Discussions

Finding the effect of reality therapy on anxiety disorder on mental health problems of people living with HIV/AIDS in Wukari education zone revealed a mean reduction of 1.40. There was a significant effect of reality therapy on anxiety disorder of mental health problems of people living with HIV/AIDS in Wukari education zone. This implies that reality therapy therapy had a significant effect on anxiety disorder of mental health problems of people living with HIV/AIDS in Wukari education zone. The finding agrees with Scharko and colleagues (2016) who found high rates of ADHD (29%) and anxiety disorders (24%). The finding agrees with Adekunle (2018) that the prevalence of anxiety is high in HIV patients. The finding agrees with Bereket (2019) that the prevalence of anxiety was 34.4%. The finding agrees with Gano (2019) that students exposed to CRT such as validity testing, modelling, and systematic positive reinforcement had a reduced school phobia. The finding agrees with Abdilahi, (2020) that the prevalence of both anxieties amidst HIV-positive women was 28.9%. The finding agrees with Yusni (2020) that reality therapy seems to be effective for group counselling sessions. The finding agrees with Muktar (2021) that the cognitive restructuring technique was significantly effective in reducing fear tendencies among the students. The finding agrees with David (2021) that food insecurity and disability among PLHIV may worsen their physical illnesses, anxiety symptoms, and other QoL domains. The finding agrees with Richard, (2022) that the overall prevalence of any anxiety disorders was 13.7% at 95% CI (based upon the symptom count criteria) and met the clinical psychiatric disorder criteria (both symptom count and functional impairment criteria). At the heart of reality therapy

in the present study is an assumption that a person's mood is directly related to his patterns of thought. Negative, dysfunctional thinking affects a person's mood, sense of self, behaviour, and physical state. The use of cognitive behavioral therapy in the present study has successfully helped a person living with HIV/AIDS, whether male or female learn to recognize negative patterns of thought, evaluate their validity, and replace them with healthier ways of thinking. This may be responsible for the significant effect of reality therapy on anxiety disorder of mental health problems of people living with HIV/AIDS in Wukari education zone.

Finding the effect of reality therapy on depression of mental health problems of people living with HIV/AIDS in Wukari education zone revealed a mean reduction of 1.74. There was a significant effect of reality therapy on depression of mental health problems of people living with HIV/AIDS in Wukari education zone. This means that cognitive behaviour therapy had a significant effect on depression of mental health problems of people living with HIV/AIDS in the Wukari education zone. The finding agrees with Lu Niu (2014) that the median prevalence of depressive symptoms among people living with HIV was 60.64%, with a range of 16% to 100%. The finding agrees with Radcliffe, (2016) that trauma-focused cognitive behavioural therapies are effective for PTSD symptoms. The finding agrees with Scharko and colleagues (2016) who found high rates of ADHD (29%) and depression (25%). The finding agrees with Japheth (2017) that the effect of CBT on depression was statistically significant. The finding agrees with Mitra (2018) that cognitive-behavioural counselling was effective in depression severity. The finding agrees with Adekunle (2018) that the prevalence of depression is high in HIV patients. The finding agrees with Bereket (2019) that the prevalence of depression was 32.0%. The finding agrees with Abdilahi (2020) that the prevalence of both depressions among HIV-positive women was 32.5%. The finding agrees with Yusni (2020) that reality therapy gives significant improvement for each member in group counselling. The finding agrees with David (2021) that food insecurity and disability among PLHIV may worsen their physical illnesses, depression symptoms, and other QoL domains. The finding agrees with Richard, (2022) that the overall prevalence of depressive disorders was 4.0% (95% CI) met the clinical psychiatric disorder criteria (both symptom count and functional impairment criteria). Therapists who practice reality therapy in the present study helped people living with HIV/AIDS to change patterns of behaviour from dysfunctional thinking. This is because negative thoughts and behaviour predispose people living with HIV/AIDS to depression and make it nearly impossible to escape its downward spiral. When patterns of thought and behaviour are changed, according to reality therapy Therapists, so is mood. This may be responsible for the significant effect of reality therapy on depression of mental health problems of people living with HIV/AIDS in Wukari education zone.

Finding the effect of reality therapy on anxiety disorder of mental health of people living with HIV/AIDS in Wukari Education Zone revealed a mean difference of 1.13 in Wukari Education Zone. There was a significant difference in the effect of reality therapy on anxiety disorder of mental health of people living with HIV/AIDS in Wukari Education Zone. The present study found that people living with HIV/AIDS in Wukari zone seem to have less difficulty in making better choices and taking control of their emotions and psychological state of mind due to mental instability. This may be responsible for the significant difference found in the effect of reality therapy on anxiety disorder of mental health of people living with HIV/AIDS in Wukari Education Zone. The approach of reality therapy in the present study, on the other hand, the therapist used structured learning experiences that teach people living with HIV/AIDS to monitor and write down their negative thoughts and mental images. This helped people living with HIV/AIDS recognize how those ideas affect their mood, behaviour and physical condition. The therapists then teach important coping skills such as problem-solving and scheduling pleasurable experiences. This may be responsible for the significant difference found in the effect of reality therapy on anxiety disorder of mental health of people living with HIV/AIDS in Wukari Education Zone.

Summary

This study examined the effects of cognitive behavioural therapy on the mental health of the people living with HIV/AIDs in Taraba State Nigeria. The study was anchored on Causation theory (1909) and Reality therapy by William Glasser (1965). Aaron Beck's theory of Behaviour therapy (1996) and the theory of change by Durkheim knows (1938). Four research questions and four null hypotheses guided the study. The study adopted a quasi-experimental design of a pre-test, post-test non-randomized group. The sample of the study cuts across the two local governments that make up Wukari Education Zone (Wukari and Ibi Local Government Area). The instruments used for the study were the Beck depression inventory (BDI) and the Beck Anxiety Inventory (BAI). The descriptive and pair sample–t-test and analysis of covariance (ANCOVA) were used to test the null hypotheses. Based on the data collected and analyzed, the following findings were made:

i. The mean reduction in the effect of reality therapy on anxiety disorder on mental health problems among people living with HIV/AIDS in the Wukari education zone is 1.40. There was a significant effect of reality therapy on anxiety disorder on mental health problems among people living with HIV/AIDS in the Wukari education zone.
ii. The mean reduction in the effect of reality therapy on depression of mental health problems among people living with HIV/AIDS in the Wukari education zone is 1.74. There was a significant effect of reality therapy on depression of mental health problems among people living with HIV/AIDS in the Wukari education zone.
iii. The difference in the effect of reality therapy on anxiety disorder of mental health of people living with HIV/AIDS in the Wukari Education Zone is 1.13. There was a significant difference in the effect of reality therapy on the anxiety disorder of mental health of people living with HIV/AIDS in the Wukari Education Zone.
iv. The difference in the effect of reality therapy on depression of mental health of people living with HIV/AIDS in the Wukari Education Zone is 0.48. There was no significant difference in the effect of reality therapy on depression or the mental health of people living with HIV/AIDS in the Wukari Education Zone.

Conclusion.

Reality therapy has a significant effect on anxiety disorder of mental health problems among people LWHA, the people living with HIV/AIDs learn to recognize negative patterns of thought and replace them with healthier ways of thinking. Also, the therapy allows people living with HIV/AIDs to gain control over their choices and accept their responsibilities.

Recommendations

Based on the findings of the study, it is hereby recommended that mental health physicians, psychologies, psychiatrists, and counsellors should be encouraged to use reality therapy on people living with HIV/AIDs in Taraba State, Nigeria.

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INFLUENCE OF EFFECTIVE ADMINISTRATION AND SUPERVISION ON SENIOR SECONDARY SCHOOL STUDENTS' ACADEMIC ACHIEVEMENT IN DUTSIN MA L.G.A, KATSINA STATE.

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Abstract
The importance of effective administration and supervision of secondary school students cannot be over-emphasized. This paper centered on the study of the influence of effective administration and supervision on senior secondary school students' academic achievement in Dutsin-Ma Local Government Area, Katsina State. The population for the study comprises all the senior Secondary School teachers from the eleven (11) public senior secondary schools in Dutsin-Ma LGA, bringing the total respondents to 197. However, because of the size of the population, 197 were still used as the sample. Three research questions were used to elucidate information from the respondents. Self- A structured questionnaire was used to generate information from the respondents. The study used a self-designed questionnaire of Influence of Effective Administration and Supervision on Senior Secondary School Students' Academic Achievement Questionnaire (IEASSSSAASQ). The instrument was validated by two experts from Educational Administration and Planning and the other from Educational Measurement and Evaluation. The data was collected and analyzed using mean and standard deviation. The finding of this study revealed that an effective leadership style is needed greatly or highly for the effective administration and supervision in senior secondary schools in Dutsin-Ma L.G.A, Katsina State, the role of instructional leadership in promoting teacher effectiveness and student learning, It was also discovered that government, school administrators and supervisors have very high support for teachers in Professional development among others. Based on the findings of the study, it is recommended that School administrators in senior secondary schools in Dutsin-Ma L.G.A should embrace transformational and instructional leadership styles, the government and school administrators should establish and sustain high-quality professional development programs for teachers, and Policymakers should develop and enforce policies that support effective school leadership and continuous teacher professional development.

Keywords: Administration, Supervision, leadership style, teachers' professional development

Introduction
The importance of effective management and oversight in determining students' academic paths is becoming more widely acknowledged in the field of education. Understanding how administrative and supervisory procedures affect academic achievement has drawn significant attention from researchers, politicians, and practitioners alike as educational systems work toward excellence and equity in student outcomes. By examining the impact of efficient management and oversight on the academic performance of senior secondary school pupils in Dutsin Ma L.G.A., Katsina State, this study aims to further explore this dynamic.

It is impossible to exaggerate the significance of efficient management and supervision in schools. Studies show that a variety of school performance factors, including student academic

achievement, are highly impacted by school leadership, which includes both administrative and supervisory responsibilities (Leithwood, Harris, & Hopkins, 2008; Hallinger & Heck, 2010). Competent administrators and supervisors influence student learning outcomes by fostering a supportive learning environment, providing instructional leadership, and facilitating teachers' professional development (Robinson, Lloyd, & Rowe, 2008; Pounder, 2015). However, despite the recognized importance of effective supervision and administration in the classroom, there remains a gap in research on their specific impact on student's academic performance, particularly in the context of Dutsin- Ma L.G.A, Katsina State.

The academic achievement of students is greatly influenced by the presence of effective leadership in educational institutions, especially in secondary schools. The effects of administrators' and supervisors' leadership philosophies on student results have been well-researched. This talk examines how leadership styles; participatory, transformational, autocratic, and contingency, affect the academic performance of secondary school students, the role that the government and administrators play in promoting effective leadership, and the possible repercussions of ignoring these factors. Collaborative decision-making procedures, in which administrators and supervisors involve Stakeholders, Teachers, Students, and Parents in the decision-making process, are a feature of participatory leadership. Studies reveal that a sense of ownership among stakeholders is fostered by participative leadership, increasing motivation and commitment to learning objectives (Leithwood et al., 2008). Involved in decision-making processes and feeling appreciated, students are more likely to be actively involved in their education, which will enhance their academic performance (Robinson et al., 2008). The goal of transformational leadership is to inspire and motivate subordinates to reach new heights of productivity. Teachers and students are empowered to create and achieve beyond expectations when administrators and supervisors use transformational leadership (Bass & Riggio, 2006). Research indicates that transformational leadership enhances students' academic performance by creating a school climate that is both encouraging and intellectually interesting (Hallinger & Heck, 2010).

Centralized decision-making, in which managers and executives decide without consulting others, is a feature of autocratic leadership. According to Platka and Arar (2019), authoritarian leadership has the potential to hinder creativity and innovation, even though it might lead to effective decision-making sessions. Waters and Marzano (2006) found that there appears to be a negative correlation between autocratic leadership styles and poor levels of academic accomplishment and student involvement. In response to changing circumstances, including the demands of the company and the abilities of subordinates, contingency leadership modifies its tactics. The success of contingency leadership in fostering student academic achievement hinges on leaders' capacity to effectively diagnose conditions and implement effective leadership methods, even as it permits flexibility and reactivity to evolving circumstances (Northouse, 2021). The leadership styles found in educational institutions are greatly influenced by administrative decisions and governmental policies. Day, Sammons, Leithwood, Harris, and Hopkins (2011) suggest that the adoption of participative and transformational leadership styles can be fostered by efficient governance structures and policies that provide support, hence enhancing academic achievement and student involvement. On the other hand, poor administrative and governmental support can impede the growth of successful leadership techniques, which could result in less-than-ideal results for students (Dimmock & Walker, 2019).

The failure to prioritize effective leadership within educational institutions can have detrimental consequences for student academic achievement. Schools lacking participative and transformational leadership may experience decreased student motivation, disengagement, and ultimately, lower academic performance (Pounder, 2015). Additionally, autocratic leadership styles can contribute to a negative school climate, leading to increased teacher turnover and

reduced student outcomes (Day et al., 2011).
Professional development opportunities for teachers play a crucial role in improving teaching practices, student engagement, and ultimately, academic achievement in secondary schools. This discussion explores how investing in professional development enhances student outcomes, the efforts of government and administrators in facilitating such opportunities, and the potential consequences of neglecting professional development for teachers. Professional development provides teachers with opportunities to enhance their knowledge, skills, and instructional strategies. Research suggests that engaging in ongoing professional learning enables teachers to stay abreast of best practices, new methodologies, and emerging technologies in education (Guskey, 2009). By incorporating evidence-based teaching strategies and pedagogical approaches into their practice, teachers can create more effective learning experiences for students, leading to improved academic achievement (Desimone, 2009).

Effective professional development programs emphasize student-centered approaches, differentiated instruction, and the use of active learning strategies. When teachers receive training and support in implementing these techniques, they can create more engaging and interactive classroom environments (Garet, Porter, Desimone, Birman, & Yoon, 2001). Engaged students are more motivated, attentive, and participative in their learning, which contributes to higher levels of academic achievement (Hattie, 2009). Professional development opportunities empower teachers to take on leadership roles within their schools and communities. When teachers are provided with training in instructional leadership, curriculum development, and assessment practices, they become agents of change who can positively influence school culture and student outcomes (Fullan, 2001). By fostering a culture of collaboration and continuous improvement, professional development contributes to a collective sense of responsibility for student success among educators.

Government policies and administrative actions play a crucial role in promoting and facilitating professional development opportunities for teachers. Effective governance structures allocate resources, provide incentives, and establish frameworks for professional learning (Hargreaves & Fullan, 2012). Administrators play a key role in creating a supportive environment for professional growth, encouraging participation in professional development activities, and recognizing the value of ongoing learning for teachers (Leithwood et al., 2008). The failure to prioritize professional development for teachers can have detrimental consequences for student academic achievement. Teachers who lack access to quality professional learning opportunities may struggle to meet the diverse needs of their students, leading to disparities in achievement (Darling-Hammond & Richardson, 2009). Moreover, stagnant teaching practices and outdated methodologies can hinder student engagement and limit learning outcomes (Day, Sammons, Leithwood, Harris, & Hopkins, 2011).

This study aims to bridge the gap by exploring the relationship between effective administration and supervision practices and the academic performance of senior secondary school students in Dutsin-ma LGA.

Statement of the Problem

The academic achievement of students in senior secondary schools is a critical indicator of the quality of education and overall development of any society. However, in Dutsin- Ma L.G.A, Katsina State, student performance has been inconsistent, with reports of declining academic outcomes in several schools. This raises concerns about the effectiveness of school administration and supervision in fostering an environment conducive to learning. Effective administration and supervision are widely recognized as pivotal for ensuring teacher effectiveness, proper curriculum implementation, and student success. Studies have shown that competent administrators and supervisors create supportive learning environments, provide instructional leadership, and

promote teacher professional development, which collectively enhance student achievement. Despite this, there is limited research on how these practices specifically influence academic outcomes in the local context of Dutsin-Ma L.G.A.

The unique socio-cultural and resource-related challenges in this region may affect the implementation and impact of administrative and supervisory practices. Furthermore, the lack of empirical evidence leaves stakeholders without clear insights into the strategies required to improve student performance effectively. This study, therefore, seeks to bridge this gap by examining the influence of effective administration and supervision on the academic achievement of senior secondary school students in Dutsin-Ma L.G.A, Katsina State.

Purpose of the Study

The primary purpose of this study is to investigate the influence of effective administration and supervision on the academic achievement of senior secondary school students in Dutsin Ma L.G.A, Katsina State. The specific objectives are:

1. To ascertain the effective leadership style needed for the effective administration and supervision in senior secondary schools in Dutsin Ma L.G.A, Katsina State
2. To find out how government, school administrators, and supervisors support teachers in Professional development.

Research Questions

The following research questions were formulated to guide the study;

1. What is the extent to which an effective leadership style is needed for effective administration and supervision in senior secondary schools in Dutsin-Ma L.G.A, Katsina State?
2. What is the level of government, school administrators, and supervisors' support for teachers in Professional development?

Methodology

For this study, the descriptive survey research design was adopted. The population was 195 and it covers all public senior secondary school teachers in Dutsin-ma LGA of Katsina state. In this study, the entire population of 11 public senior secondary schools, comprising 11 principals and 186 teachers, was adopted as the sample. The rationale for this decision lies in the manageable size of the population. Since the total number of respondents is relatively small (197 individuals), it is practical, cost-effective, and logistically feasible to involve all members of the population in the study. This approach ensures that no subgroup within the population is overlooked and eliminates the risk of sampling error, thus providing a more comprehensive and accurate representation of the population's perspectives. This approach is an example of census sampling. Adopting the entire population as the sample (census sampling) ensures inclusivity and accuracy. With only 11 public senior secondary schools, 11 principals, and 186 teachers, the population is small and manageable for data collection. By using all 197 members, the study avoids potential biases that could arise from excluding certain individuals. This method enhances the reliability and validity of the findings, as it captures the complete views and experiences of the entire target group. Means and standard deviations to summarize the responses from the Influence of Effective Administration and Supervision on Senior Secondary School Students Academic Achievement Questionnaire (IEASSSSAAS) was developed by the researcher and 10 questions were used to address the two research questions. The instrument vetted and a 4-Likert Scale ranging from Strongly Agree (SA) 4, Agree (A) 3, Disagree
(D) 2, Strongly and Disagree (SD) 1 scale of measurement items was used to answer the questions. The instrument underwent expert validation, with a validity index of 0.06, ensuring that the questionnaire was both relevant and clear in addressing the research questions.

Results

Research Question One: What is the extent to which an effective leadership style is needed for effective administration and supervision in senior secondary schools in Dutsin-Ma L.G.A, Katsina State?

Table 1: Analysis of the results on the extent to which effective leadership style is needed for the effective administration and supervision in senior secondary schools in Dutsin-Ma L.G.A, Katsina State

Item	Mean	STD	Decision
A leadership style that promotes open Communication and transparency are crucial for effective administration and supervision in senior secondary schools	4.40	0.491	Accepted
A leadership style, that inspires and motivates both teachers and students, is essential for enhancing academic performance in senior secondary schools	4.42	0.495	Accepted
A leadership style, where Administrators work closely with teachers to set goals and solve problems, which is necessary for promoting professional growth and development in senior secondary schools	4.38	0.486	Accepted
A leadership style that can effectively Respond to challenges and changes in The educational landscape is indispensable for ensuring the continuous improvement of senior secondary schools in Dutsin-Ma L.G.A.	4.38	0.486	Accepted
A leadership approach that values the the input of all stakeholders, including Teachers, students, and parents are fundamental for fostering a the supportive learning environment in senior secondary schools	4.38	0.486	Accepted
A leadership style that promotes open Communication and transparency are crucial for effective administration and supervision in senior secondary schools	4.42	0.495	Accepted
Grand Mean =	**4.386**		

Results in Table 1 show that the respondents agreed to all the items. This means that effective leadership styles are needed for effective administration and supervision in senior secondary schools in Dutsin-Ma Local Government Area (L.G.A), Katsina State. The consistency in the high mean scores across different leadership attributes suggests that respondents recognize the multifaceted nature of effective leadership. Each attribute contributes uniquely to the overall effectiveness of school administration and supervision. This means that school administrators should adopt a comprehensive and inclusive leadership approach to enhance the overall effectiveness and quality of education in their institutions.

Research Question Two: What is the level of government, school administrators and supervisors support for teachers in Professional development?

Table 2: Analysis of the results on the level of government, school administrators and supervisors support for teachers in Professional development

Item	Mean	STD	Decision
Government policies and initiatives effectively support teachers' professional development	4.38	0.486	Accepted
School administrators play a crucial role in facilitating teachers' professional growth	4.42	0.495	Accepted
Supervisors actively engage in teachers' professional development	4.40	0.491	Accepted
Government, school administrators, and supervisors allocate sufficient resources and funding towards teachers' professional development activities	4.38	0.486	Accepted
There is a culture of continuous learning and improvement fostered by government policies, school administrators, and supervisors	4.40	0.491	Accepted
Grand Mean =	**4.396**		

The analysis in Table 2 explores the level of support provided by the government, school administrators, and supervisors for teachers' professional development. The table includes the mean scores and standard deviations for various items, each indicating the perceived effectiveness and supportiveness of different stakeholders. The high mean scores across all items indicate strong agreement on the significant role these entities play in fostering professional development. This high mean score indicates a shared commitment to lifelong learning and continuous professional improvement within the educational community.

Discussion

In addressing research question one, the study revealed that an effective leadership style is needed greatly or highly for effective administration and supervision in senior secondary schools in Dutsin-Ma L.G.A, Katsina State. The finding of this study was supported by the findings of Leithwood and Jantzi, (2006) on transformational school leadership for large-scale reform which has positive effects on students, teachers, and their classroom practices. Furthermore, studies highlight the role of instructional leadership in promoting teacher effectiveness and student learning. This finding supports the findings of Hallinger and Heck, (2010) Effective administrators engage in instructional supervision, curriculum development, and assessment practices to support teaching and learning in schools.

It was discovered that government, school administrators, and supervisors have very high support for teachers in Professional development. This finding supported the finding of Robinson, Lloyd, and Rowe (2008) on the provision of a meta-analysis of the impact of different leadership styles on student outcomes where the importance of strategic leadership is highlighted. More so, research on the effectiveness of professional development indicates positive outcomes for educators and students. This finding supports the findings of Desimone, Porter, Garet, Yoon, and Birman, (2002); and Guskey, (2009) Studies have shown that high-quality, sustained Professional Development Initiatives are associated with improvements in teacher knowledge, instructional practices, and student achievement.

Conclusion

This study concludes that effective administration and supervision significantly influence the academic achievement of senior secondary school students in Dutsin-Ma L.G.A, Katsina State. Transformational and instructional leadership styles, combined with robust professional development for teachers, enhance teaching quality and student outcomes. Therefore, prioritizing effective administrative practices and sustained teacher support is essential for improving educational standards in the region.

Recommendations

Based on the findings of the study, it is recommended:

1. School administrators in senior secondary schools in Dutsin-Ma L.G.A should embrace transformational and instructional leadership styles.
2. The government and school administrators should establish and sustain high-quality professional development programs for teachers.
3. Policymakers should develop and enforce policies that support effective school leadership and continuous teacher professional development.

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WORK STRESS, MOTIVATION, AND JOB HAZARD AS PREDICTORS OF HEALTH CARE DELIVERY AMONG NURSES IN LAGOS STATE PUBLIC HOSPITALS

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Abstract
In recent times, there have been reports of nurses' unprofessionalism and poor conduct towards patients in public hospitals in Nigeria. However, little is known about Lagos State. Similarly, contrasting findings exist in the literature on work stress, motivation, and job hazards on health care delivery of nurses in Lagos State, thus this study. A descriptive research design was adopted, while 90 nurses and 120 outpatients selected across 3 general hospitals in Lagos East Senatorial District constituted the study sample. Work Stress, Motivation, and Job Hazard Questionnaire (r = 0.89) and Health Care Delivery Questionnaire (r = 0.85) were data collection instruments. The research question and hypotheses raised were analysed using descriptive statistics and multiple regression at 0.05 alpha level. Results revealed positive patients' perceptions (grand mean = 2.93) of the health care delivery of nurses in Lagos State. Results revealed that motivation, work stress, and job hazards jointly influence healthcare delivery by 34.0% ($F_{(3, 89)} = 14.768$, $P< 0.05$). The standardised β coefficient revealed that motivation (β = .403) positively influences health care delivery, while work stress (β = -.364) and job hazards (β = -.064) negatively influence health care delivery of nurses respectively. The authors concluded that amidst the devastating consequences of work stress and job hazards, motivation was the driving force for effective health care delivery of nurses in Lagos State public hospitals. It was recommended that healthcare stakeholders should continually motivate nurses and put in place measures to combat stress and job hazards prevalent in public hospitals.

Keywords: Healthcare Delivery, Job Hazard, Motivation, Nurses, Public Hospital

Introduction

Health care is a key to national development, as a healthy mind lives in a healthy body. Health workers are the bedrock for sustainable social and economic development of any given society at both the local and global levels, and they play a vital role in the functioning of a given health system. The majority of the health workers provide health care services to the consumers, while the other staff carry out administrative duties, and the paramedical or allied staff are the supporting staff. Nurses are among the key health workers in the healthcare sector, and they play very important roles in our various communities, districts, and regions, as well as the nation at large, particularly as they are the first line of contact for members of society who access health care services (Akin-Otiko, 2018).

Nurses constitute the largest proportion of workers in the health system; hence, the nursing department in any facility is usually the largest and constitutes its backbone. Nurses are the closest to, and are with, the patients for a longer period than any other health professional. Nursing care is a key indicator of the quality of health care in an institution; therefore, satisfaction with the quality of nursing care influences patients' perceptions of the quality of health care in the country

(Olanipekun, 2018).
Nurses, irrespective of their specialty or work setting, treat patients and educate patients and the public about various medical conditions. The nurses record patient's medical histories and symptoms, perform some diagnostic tests, analyze results, operate medical machinery, administer treatment and medication, and help in patient follow-up and rehabilitation. Nurses also educate the public on warning signs, symptoms of diseases, diet, nutrition, and exercise programs. Nurses observe the patients and record their observations. Nurses form the majority of clinical employees of hospitals, and they are consulted more than other health workers. Nurses are responsible for the implementation of the doctor's prescription and orders and maintain surveillance over patient health. While the doctors or physicians prescribe drugs, the nurses administer the drugs. The importance of nurses cannot be overemphasised because they play a crucial role in health care delivery. They help doctors, pharmacists, and laboratory scientists to provide effective health care to patients. Nurses coordinate all healthcare activities of patients in their care (Babatunde et al., 2015). Hence, the role and functions of nurses in the health care delivery of any nation cannot be underestimated.

However, as laudable as the role of nurses in health care delivery in the Nation, personal observation and empirical evidence attest to their unprofessionalism in the discharge of their statutory duties, leading to poor health care delivery to patients in Nigeria, particularly in public hospitals. Personal observation of nurses' statutory conduct to patients in general hospitals in the Ikorodu area of Lagos reveals a high level of inadequacy in terms of effective health care delivery. Many of these nurses display a nonchalant attitude toward patients, particularly those from poor socio-economic backgrounds. Personal observation further reveals that patients who received quality health services from nurses in public hospitals are those who succeeded in giving bribes or incentives to these nurses, while patients who fail to do so are treated with levity irrespective of the health status of such patients.

Supporting the above personal observation, Sasegbo (2009) reported the case of Mr. O who said, "I lost my baby due to negligence of the nurses. My wife gave birth to a baby boy four minutes from a health center nearest to us. Instead of the nurse giving my wife and baby the necessary support required, they were left to be attended to. Before we even moved an inch, the baby was gone; it now remains how to rescue my wife. It was a sad experience." This means that nurses do not perceive that they are causing more injuries and deaths to the populace rather than restoring life.

The devastating implication of nurses' poor health care delivery in public hospitals in Nigeria has been a thing of concern to the general public, researchers, and stakeholders in the health sector, and as such, geared them to look into factors that account for this menace. One of the factors that has been attributed to poor healthcare delivery by nurses is job stress. Dwyer et al. (2013) posited that work stress has become a global epidemic, having a major and negative impact on the health, daily living, and well-being of workers. Work stress has been defined as the harmful and emotional response that occurs when the requirements of the job do not match the capabilities, resources, or needs of the workers. In general, the combination of high demands in a job and a low amount of control over the situation could lead to work stress, which can impact both employees and employers alike. Stress is not necessarily negative; some stress keeps us motivated and alert. However, too much stress can trigger problems with mental and physical health, particularly over a prolonged period. Nurses, being front-line health care providers, experience various work-related stressors such as long working hours, unpredictable reactions from patients and their relatives, as well as emotional relationships resulting in emotional exhaustion (Happell, 2015).

Employee work stress has also been linked with their job productivity. For instance, in a study conducted by Shihundla et al. (2016), the findings of the study indicated a moderate but significant

negative correlation between work stress and job productivity among community health nurses. Workloads, long working hours, and unsatisfactory compensation were found to be key drivers of work stress in Africa especially among nurses, leading to poor healthcare delivery on the part of nurses (Shihundla et al., 2016).

Apart from job stress, researchers such as Akin-Otiko (2018) and Olanipekun (2018), in their respective studies, discovered that several factors ranging from socio-economic status, inadequate training, working conditions, socio-economic factors, corrupt practices, job hazards, and motivation account for this menacing experience in public hospitals in Nigeria, particularly among nurses. Sasegbo (2009), for example, attributes corrupt practices of nurses, job hazards, and a lack of effective monitoring of public health workers as factors that account for this menace. Olanipekun (2018) stated that several factors ranging from socio-economic factors, working conditions, remuneration, and job hazards account for this menace among nurses in public hospitals in Nigeria. Olanipekun reiterated further that there is a slightly significant correlation between work stress and job hazards in the health care service delivery of nurses but posited a strong correlation between working conditions and socio-economic factors in the health care delivery of nurses in Lagos State.

In contrast, Lindqvist (2018), in his study, established no significant correlation between work stress, motivation, and job hazards in the healthcare delivery of health practitioners. Supporting the position of Lidqvist (2018), Olanipekun (2018) established no significant influence of work stress and job hazards on the healthcare delivery of nurses but, however, established a significant influence of motivation concerning job remuneration on healthcare delivery of nurses in Osun state.

Based on the above premises, it is evident that several factors account for poor health care delivery of nurses in Nigeria; however, of all the factors, work stress, job hazards, and motivation remain factors with little and contrasting empirical evidence as regards their influence on health care delivery of nurses in public hospitals in Nigeria and Lagos State, thus implying a gap in the literature for the current study. Sequel to the foregoing, this study examines the influence of work stress, motivation, and job hazards on health care delivery and the attitude of nurses in Lagos State public hospitals.

Statement of the Problem

No doubt, the potential role and functions of nurses in the health care delivery of Nigerians cannot be underestimated. However, despite the role of nurses in the effective delivery of the health care system in the nation, personal observation and empirical evidence attest to nurses' unprofessionalism in the discharge of their statutory duties, which by extension accounts for many recorded deaths in public hospitals in Nigeria. However, little is known about Lagos State. More importantly, several factors have been examined as causative factors of poor healthcare delivery of nurses in public hospitals in Nigeria. However, of all these factors examined, work stress, motivation, and job hazards remain factors with contrast.

Empirical results as regards their influence on effective health care delivery in Lagos State public hospitals. Based on the above submission, this study becomes imperative and thus examines the influence of work stress, motivation, and job hazards on the health care delivery of nurses in Lagos state public hospitals.

Research Questions

1. To what extent do patients perceive the health care delivery of nurses in Lagos state public hospitals?

Hypotheses

$H0_1$: There is no significant composite influence of work stress, motivation, and job hazard on the health care delivery of nurses in public hospitals in Lagos state.

$H0_2$: There is no significant relative influence of work stress, motivation and job hazard on the health care delivery of nurses in public hospitals in Lagos state.

Methodology

Research design: This study adopted the descriptive research design of the survey type.

Population, Sample, and Sampling Technique

The population for this study comprised all nurses and outpatients in all general hospitals in the Lagos East Senatorial District of Lagos State. At first, three local governments were selected out of the five local government areas in the Senatorial District in focus using a simple random sampling technique. In each of the selected local governments, one general hospital was selected. Lastly, in each of the chosen general hospitals (Ikorodu, Ijede, and Agbowa), 30 nurses and 40 outpatients were selected. The nurses were selected using stratified sampling based on departments/units, while outpatients were selected using volunteer sampling. In all, a total of 3 local governments, 3 general hospitals, 90 nurses, and 120 outpatients constituted the study sample.

Research instruments

Two instruments were used to obtain relevant information from the respondents.
The two instruments were self-developed. They are:

1. Work Stress, Motivation, and Job Hazard Questionnaire (WOSMAJHQ)
2. Health Care Delivery Questionnaire (HECDEQ)

Validation of the Instruments

Content validity was adopted in validating the research instruments. To achieve this, the authors contacted experts in item construction and clinical psychology for improvement in content, language, and format. After corrections were made, final versions of the instruments were administered to respondents. For reliability, WOSMAJHQ and HECDEQ were trials tested on thirty nurses and outpatients that are comparable to the sampled population to determine their reliability; thereafter, Cronbach Alpha statistics were adopted, and a reliability coefficient of 0.89 and 0.85 was obtained for WOSMAJHQ and HECDEQ, respectively.

Procedure for Data Collection

Ethical consents were solicited from the selected nursing staff and outpatients for their enlistment in the study. To achieve this, an introduction letter was collected from the Department of Counselling Psychology and Educational Foundations to the concerned management of the general hospitals for ethical approval. On approval from the management of the general hospital, ethical consent was also solicited from nurses and patients, and on approval, the instruments were personally administered to the respondents concerned. The researchers ensured that respondents were adequately briefed on how to fill out the instruments. The researchers also ensured prompt retrieval of the copies of the instruments administered to facilitate the security of the document. The exercise was completed within the space of four weeks.

Data Analysis Techniques

The research question raised was answered using descriptive statistics of frequency counts, simple percentages, mean and standard deviation, while the two stated hypotheses were tested using multiple regression at a 0.05 alpha level of significance.

Results and Discussion of Findings

Research Question one: To what extent do patients perceive the health care delivery of nurses

in Lagos state public hospitals?

Table 1: Frequency counts, percentages, mean, standard deviation showing patient perception of health care delivery of nurses in public hospitals in Lagos State.

Key: Very poor (1), Poor (2), Average (3), Good (4), Excellent (5)

S/N	Item	1	2	3	4	5	Mean	S.D.	Decision
1	Nurses' ability to show love and empathy to all category of patients at all times	34 (28.3)	41 (34.2)	21 (17.5)	17 (14.2)	7 (5.8)	2.35	1.20	Poor delivery
2	Nurses' ability to communicate with patients with love and respect	28 (23.3)	18 (15.0)	34 (28.3)	27 (22.5)	13 (10.8)	2.83	1.31	Excellent delivery
3	Nurses' guidance to patients in relation to drugs usage and preventive practices	28 (23.3)	8 (6.7)	10 (8.3)	43 (35.8)	31 (25.8)	3.34	1.51	Excellent delivery
4	Nurses' ability to physical assist very ill or admitted patients in personal chores	42 (35.0)	18 (15.0)	23 (19.2)	26 (21.7)	11 (9.2)	2.55	1.39	Excellent delivery
5	Nurses' ability to attend to patients promptly	42 (35.0)	25 (20.8)	9 (7.5)	24 (20.0)	20 (16.7)	2.63	1.53	Excellent delivery
6	Nurses' ability to show moral supports and care to patients and relatives	23 (19.2)	27 (22.5)	30 (25.0)	24 (20.0)	16 (13.3)	2.86	1.31	Excellent delivery
7	Nurses' effective communication and guidance to elderly patients	8 (6.7)	6 (5.0)	15 (12.5)	67 (55.8)	24 (20.0)	3.78	1.04	Excellent delivery
8	Good moral approach to patients while searching or filing patients' records	17 (14.2)	28 (23.3)	14 (11.7)	44 (36.7)	17 (14.2)	3.13	1.31	Excellent delivery
9	Good attitude to patients with communicable disease	38 (31.7)	27 (22.5)	22 (18.3)	18 (15.0)	15 (12.5)	2.54	1.39	Excellent delivery
10	Good and motivating attitude to patients with terminal ailment such as Hypertension, Diabetes, HIV/AIDs etc.	16 (13.3)	12 (10.0)	30 (25.0)	48 (40.0)	14 (11.7)	3.27	1.20	Excellent delivery
		Grand Mean				**29.28/10 = 2.93**			

***Figures in parentheses indicate percentage**

Decision Rule: A mean score below 2.50 indicates poor healthcare delivery, while a mean score of 2.50 and above, indicate excellent health care delivery.

Given the results presented in Table 1, the grand mean of all the 10 items measuring the extent of patient perception of health care delivery by nurses in public hospitals in Lagos State was 29.28/10 = 2.93) and was found to be greater than 2.50, which implies that patients had an excellent perception of health care delivery by nurses in public hospitals in Lagos State. The explanation for this finding is that a larger percentage of the sampled patients agrees that nurses in public hospitals in Lagos state communicate with patients with love and respect, guide patients about drug usage and preventive practices, physically assist very ill or admitted patients in personal chores, attend to patients promptly, show moral supports and care to patients and relatives, communicate and guides elderly patients, elicit good moral approach to patients while searching or filing patients' records, elicit good attitude to patients with communicable disease and also elicit good and motivating attitude to patients with a terminal ailment such as Hypertension, Diabetes, HIV/AIDs etc.

The results of research question one above negate the findings of Akin-Otiko (2018), who reported nurses poor communication, delays in response to patients, and poor healthcare delivery among nurses in the discharge of their duties to patients. Akin-Otiko reiterated further that corrupt practices of nurses, job hazards, and a lack of effective monitoring of public health workers are factors that account for this menace. In the same vein, Olanipekun (2018) reported ill and unsatisfactory healthcare delivery among nurses to patients and went on to attribute factors ranging from socio-economic factors, working conditions, remuneration, and job hazards as causative factors among nurses in public hospitals in Nigeria.

Test of Hypotheses

$H0_1$: There is no significant composite influence of work stress, motivation, and job hazard on the health care delivery of nurses in public hospitals in Lagos state. This hypothesis was tested with multiple Regression Analysis and the result is shown in the table below.

Table 2: Model summary of regression analysis on the composite contribution of work stress, motivation, and job hazard on health care delivery of nurses

R = .583[a], R^2 = .340, Adjusted R^2 = .317, Std. Error of the Estimate = 8.266

	Sum Squares of	Df	Mean Square	F	Sig.	Decision
Regression	3026.818	3	1008.939	14.768	.000[b]	Significant
Residual	5875.582	86	68.321			
Total	8902.400	89				

a. Dependent Variable: Healthcare delivery of nurses

b. Predictors: (Constant), Work Stress, Motivation, Job Hazard.

The correlation coefficient resulting from the [multiple regression] analysis shows that there is a significant correlation (R =.583) between the predictors and the criterion variable. The coefficient of determination is significant but relatively below average (R^2=.340) and shows moderate strength in predicting the healthcare delivery of nurses in public hospitals in Lagos State. Thus, 34.0% of the variance in health care delivery of nurses in Lagos state is explained by three independent variables (Work Stress, Motivation, and Job hazard). The remaining unexplained 66% could be attributed to the effect of several other variables not investigated in this study. This composite contribution is further interpreted by the ANOVA, and the result shows that though the coefficient of determination, R2, is relatively below average, the analysis of variance is very significant (0.000, $F_{(3, 89)} = 14.768 < 0.05$). This indicates that the composite contributions of work stress, motivation, and job hazards to the healthcare delivery of nurses were statistically significant. Therefore, it can be assumed that the predictor variables reasonably predict the healthcare delivery of nurses in Lagos State.

The above findings corroborate the work of Salami (2020), who reported that motivation significantly influences healthcare delivery of medical personnel to the tune of 14.6%, while job hazards and work stress have minimal influence on medical staff productivity. In the same vein, Trepanier et al. (2015) found a significant influence of motivation on nursing staff productivity in the discharge of their statutory responsibilities. In the same vein, Gandhi et al. (2011) reported a positive correlation between job stress and healthcare delivery in a cross-sectional study of 150 psychiatric nurses in Bangalore, India. The psychiatric nurses exhibited very high levels of stress (95%) and also showed higher levels of job satisfaction and effective health service delivery (82%), which was thought to be attributed to 'higher financial benefits' in Indian public hospitals.

$H0_2$: There is no significant relative influence of work stress, motivation, and job hazard on the health care delivery of nurses in public hospitals in Lagos state. This hypothesis was tested with multiple Regression Analysis and the result is shown in the table below.

Table 3: The beta ( ) coefficients in the Linear Regression Analysis showing relative contributions of work stress, motivation and job hazard. on healthcare delivery of nurses

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	32.784	5.966		5.495	.000
Motivation	.481	.105	.403	4.592	.000
Job Hazard	-.085	.128	-.064	-.664	.509
Work Stress	-.375	.101	-.364	-3.747	.000

a. Dependent Variable: Nurses healthcare Delivery

From Table 3, the beta (β) weighing of the predictor variables was given in the standardised coefficients columns. The constant is 32.784. Relative to each other, motivation (β = .403) is statistically significant at P .000 < 0.05 which implies that motivation influences the health care delivery of nurses to the tune of 40.3%. On the other hand, job hazard (β = -.064) was found to be statistically not significant at P.509 > 0.05. Thus, it implies that job hazards negatively influence the health care delivery of nurses to the tune of -6.4%, though it was found to be statistically not significant. Lastly, work stress (β = 364) was found to be statistically significant at P.000 < 0.05, which implies that work stress negatively influences the health care delivery of nurses to the tune of -36.4%. In summary, out of the three independent variables examined, only one (motivation) had a significant positive influence on the health care delivery of nurses in Lagos State, while the remaining two (work stress and job hazards) negatively influenced the health care delivery of nurses in the sampled general hospitals in Lagos State.

The findings of Hypothesis 3 agree with the work of Trepanier et al. (2015), who found a significant influence of motivation on nursing staff productivity in the discharge of their statutory responsibilities. In the same vein, Aninanya et al. (2016) reported that performance-based incentives significantly foster healthcare workers' productivity. In the same vein, Sanda and Cudjoe (2018) establish a significant negative relative influence of work stress on effective healthcare delivery among nurses working in public hospitals in Ghana. In the same vein, Lindqvist et al. (2014) reported that stress emanating from too much workload negatively affects healthcare delivery and job satisfaction for nursing professionals. For job hazards, Abidoye et al. (2016) found a reported high incidence of physical, chemical, and biological hazards in nurses while discharging their statutory duties. Abidoye et al. reported further that job hazards had a significant negative influence on the productivity of healthcare professionals. In the same vein, Babatunde et al. (2015) found a significant association between occupational hazard exposure and the health service delivery of nurses in healthcare facilities in public hospitals in Nigeria. Also, Akin-Otiko (2018) reported that job hazards, poor motivation, and stress account for poor healthcare delivery by nurses in healthcare facilities.

Conclusion

The authors concluded that there is a great interaction between the determinants (Work Stress, Motivation, and Job hazard) and the health care delivery of nurses in general hospitals in Lagos State. From the findings, it was established that motivation plays a very significant role in fostering positive healthcare delivery of nurses in Lagos State, while work-related stress and job hazards account for poor health care delivery of nurses in public general hospitals in Lagos State.

Recommendations

On account of the foregoing findings, the following recommendations were proffered.

2. Governments should continually motivate nurses in public hospitals in Lagos state through prompt payment of salaries and arrears, regular in-service training, regular staff promotion, and provision of a conducive working atmosphere.
3. The provision of 21st-century healthcare infrastructure by healthcare stakeholders and recruitment of more nurses by the government into public hospitals to cater for shortages of nursing staff in hospitals will go a long way in combating job hazards due to obsolete equipment and stress emanating from work overload among nurses in public hospitals in Lagos state.
4. Medical directors should intensify efforts to actively engage nursing staff in key decision-making in the hospitals to foster the health care delivery of nurses in public hospitals in Lagos State.
5. Government and medical stakeholders should put in place proactive measures and health protection equipment for nurses, to prevent nurses' exposure to potential hazards while

discharging their statutory duties.

6. Nurses in public hospitals are encouraged to continually display professionalism in saving lives through love, care, and compassion toward patients at all times irrespective of any latent factors.
7. Lastly, the government should put in place policies, sanctions, and an external health monitoring team, to combat poor health care services and corrupt practices among nurses and health care providers in public hospitals in Lagos state.

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FORMS AND EFFECTS OF CHILD LABOUR ON ACADEMIC PERFORMANCE OF JUNIOR SECONDARY SCHOOL STUDENTS IN BORNO STATE, NIGERIA: IMPLICATIONS FOR COUNSELLING

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Abstract
The econometrics of child labour render inclusive education an optical delusion and a major challenge in Nigeria's education especially in the northern region. The copious efforts made by previous governments were punctured by abject poverty characterized by insurgency resulting in the impromptu closure of most schools and ultimately child labour to augment family income. The study identified forms and effects of child labour on academic performance of junior secondary school students in Borno State, Nigeria: Implications for Counselling. A descriptive survey research design was adopted for the study. The population of the study comprised all 7,582 public junior secondary school students in Maiduguri Metropolis and Jere Local Government Areas between January 2021 and December 2022. However, 216 subjects made up of 97(45%) males and 119(55%) females engaged in child labour constituted the sample. Purposive, volunteered, and stratified random sampling techniques were used in selecting the sample. The stratification was based on gender, a form of child labour, the educational status of parents, hours of labour, and remuneration. Five objectives, three research questions and two null- hypotheses guided the study. Researchers' designed instrument tagged "Child Labour Questionnaire (CLQ)" was used to collect data. The CLQ has a validity index of 0.83 and a reliability coefficient of 0.85 thus used for the study. Mean and Standard Deviation were used in analyzing the research questions while student t-test and ANOVA were used in analyzing the null hypotheses at 0.05 alpha level. The results revealed 36 different forms of child labour engaging daily useful hours of the junior secondary school students and 7 different effects on their academic performance. The first null hypothesis was rejected in favour of the alternative while the second was upheld. Based on the findings, recommendations, and implications for counselling were offered.

Keywords*:* Child Labour, Forms, Effects, Academic Performance, Counselling Implications

Introduction
Education is the pivot around which everything revolves and the primary tool for the social transformation of a nation. It is the fastest, safest, and most effective investment a nation can make to accelerate the development of human and material resources (Ngohi, 2020). Ifeakandu (2019) expressed that Nigeria like other varying nations across the globe adopts long-term educational policies when in desperate need of urgent restoration of a balanced economy. According to the United Nations International Children's Emergency Funds (UNICEF, 2019), 15 Million children under the age of 14 years (school-going age) especially in third-world countries like Nigeria are seriously engaged in labour for economic gain. The majority of these children are forced to labour for long hours in hazardous, unhealthy settings and under the scorching sun, in addition to being on empty stomachs in rare instances.

Okpechi (2020) and Moyi (2019) defined child labour as the employment of a child between the ages of 14 and 16 years in a low-paid job or low wages, spending long hours on work, depriving them or interfering with their education, exploiting them of their childhood potentials and dignity,

and harmful to their physical, social, moral and psychological development or subjecting the underage to work that robs them of their self-esteem through physical and mental exploitation. Ngohi (2020) in support of the International Labour Organization (ILO, 2019) stressed that parameters used in determining child labour include the age limit although it varies from one society to another based on culture (people cease to be children in different ages and the onset of puberty occurs at different ages irrespective of gender), type and hours of labour, health conditions, hazardous nature of the job and its interference with child's educational and social development. Article 1 of the United Nations Convention on the Rights of the Child and the ILO Convention on the Worst Forms of Child Labour 1999 No. 182 refers to a child as someone under the age of 18 years.

Ngohi & Mburza (2019) and Fayokun (2020) reported that child labour is a complex phenomenon commonly found in rural areas of Africa and Asian countries. In some parts of Nigeria, children labour on streets, traffic junctions, or markets as shoe-shiners, cars, and tricycles washers, scavengers, wheel-biro pushers, hawkers, fuelwood or charcoal sellers, water vendors, shop attendees, petroleum dispensers or end up as white-collar street beggars in the name of almajiris (with or without carrying bowls). Nigerian culture and tradition consider family as the first agent of socialization and warrants children to work with the family to develop skills they would need as adults in addition to inculcating norms and values from one generation to another. However, the strangulated economy encourages child labour for the survival of underprivileged families to the detriment of educational pursuits. The result in most instances is school dropout usually at primary or junior secondary school levels and indulgence in substance abuse and criminal propensity thus, stifling human capital development and off-putting potentials of third world countries like Nigeria. According to Ehiemere (2019), child labour comprised street hawking, farm work, and domestic chores such as taking care of babies, fetching water and firewood, preparing and cooking food, commercial sex jobs, fishing, industrial processes, washing plates, laundry services, sweeping and moping rooms/toilets, individual cleanliness and bus conductor.

The statistics by the International Labour Organization (ILO, 2019) revealed that 24.2% of children in Nigeria aged between 10 and 14 years engaged in early or childhood employment which is universally accepted to be harmful to children's physical, social, psychological, and intellectual development and may consequently result in child trafficking among others. Nigeria has been labelled as a prominent source, destination, and transit nation for child trafficking. Ngohi & Mburza (2019) reported that 34.7% of children in rural areas are engaged in child labour due to either abject poverty, ignorance of the value of Western education, or the need for immediate financial benefits to augment the family income. Fayokun (2020) noted that Nigeria ranked the highest in Africa's concentration of child and woman trafficking especially trafficking of minors after Cameroun, Gabon, Benin, Equatorial Guinea, and Togo. Abe (2019) opined that over 6 million children are equal.

Distributed genders are engaged in child labour; approximately 3 million of them are combining work and schooling with greater effects of truancy and consequent dropout due to frequent missing of lessons/examinations following high demand at their places of work and the necessity to keep life and soul together. Studies by Webbink et al (2019), consider poverty level, educational status of the parents, environmental factors, family size, cultural penchant concerning acceptable norms and values, level of urbanization, availability of educational resources, parents' occupation and parenting styles as the major causes of child labour.

For a child to be academically successful has to be sound intellectually and not a truant. Onomodeke (2020) and Yap (2019) observed that for a student to perform academically well has to be punctual, face learning squarely, avoid late coming to class, and consult with teachers in terms of seeking clarity on issues. This suggests that the more frequently a student attains classes; the less

time a child has for labour. In attempts to check students' commitment to learning and avoid truancy, administrative records (attendance register) are used daily, free tuition fees to encourage learning, especially in educationally backward nations, provision of free books, school uniforms, bags, pairs of sandals and sucks in addition to the provision of medical facilities and balanced diets regardless of the type of school (boarding or day, boys, girls or co-education, urban or rural). However, in some nation-states characterized by abject poverty and the menace of insurgency, a sizeable number of students is out of school due to impromptu closure of the schools following activities of the insurgents or family demand (augment family income) despite government interventions at varying levels through several commissions and/or agencies. Good academic performance according to Ravallion & Wodon (2019) depends on students' frequency in attending classes, ability to execute the task (assignment/homework), reading and comprehension of available literature, time management, notes taking, effective use of the library, ability to write and pass teacher made test and examinations. Alio (2018) added that a good school climate devoid of school violence encourages better academic performance and the reverse may result in poor academic performance and consequently school dropout. It is against this background that this study seeks to determine the forms and effects of child labour on the academic performance of junior secondary school students in Borno State, Nigeria to proffering some counselling implications.

Statement of the Problem

The relatively recent worldwide effort to ensure "education for all" at least, the high-quality basic education just like the numerous policies and strategies adopted by governments at varying periods to enhance school enrolment and quality of education in Nigeria, could not see the sunlight. The copious efforts were punctured due to abject poverty characterized by insurgency resulting in the impromptu closure of most schools, dropouts, and ultimately child labour to augment family income. The global commitment to "education for all" arose in response to the growing phenomenon of child labour, child trafficking, child abuse, and other child-related exploitations depriving children of basic education and leaving them with vague or tentative futures. The econometrics of child labour render inclusive education an optical delusion and a major challenge in Nigeria's education especially in the northern region. Borno State despite being an educationally disadvantageous State faced with over a decade of insurgency is experiencing the challenge of child labour on an unprecedented scale. The reservoir of works of literature on child labour focused on medical impacts, hours of labour, exposure to vagaries of life, distance covered and exploitation of human dignity, socio-personal and psychological consequences as well as child labour and school attendance. No literature was found on the forms and effects of child labour on academic performance. Thus, the thrust of this study is to fill the vacuum created. It is against this background that the researcher casts a searchlight on the forms and effects of child labour on the academic performance of junior secondary school students in Borno State, Nigeria to offer some implications for counselling.

Objectives of the Study

The objectives of this study were to determine the following:

1. Demographic variables of junior secondary school students engaged in child labour in Borno State, Nigeria
2. Forms of child labour engaged by junior secondary school students by gender in Borno State, Nigeria
3. Effects of child labour on academic performance of junior secondary school students in Borno State, Nigeria
4. If a relationship exists between child labour and academic performance of junior secondary school students by gender in Borno State, Nigeria
5. If a difference exists between ages on the effects of child labour on the academic performance of junior secondary school students in Borno State, Nigeria

Research Questions

The following research questions were answered in this study:

1. What are the demographic variables of junior secondary school students engaged in child labour in Borno State, Nigeria?
2. What are the forms of child labour engaged by junior secondary school students by gender in Borno State, Nigeria?
3. What are the effects of child labour on the academic performance of junior secondary school students by gender in Borno State, Nigeria?

Hypotheses

The following null hypotheses were tested at 0.05 alpha level for the study:

HO_1: There is no significant relationship between child labour and academic performance of junior secondary school students by gender in Borno State, Nigeria

HO_2: There is no significant age difference in the effects of child labour on the academic performance of junior secondary school students in Borno State, Nigeria

Methodology

Research Design: A descriptive survey research design was adopted to determine the forms and effects of child labour on the academic performance of junior secondary school students in Borno State, Nigeria. The design was adopted because it allows for the use of questionnaire forms to collect data from a large number of subjects.

Population and Sample: The target population of this study comprised all 7,582 junior secondary school students in public schools within Maiduguri Metropolis and Jere local government areas. However, 216 subjects were selected as samples for the study. Krejcie and Morgan's (1970) table for determining the sample size of a given population was used to determine the sample size. The sample comprised of 97(45%) male and 119(55%) female. Purposeful, volunteered, and stratified random sampling techniques were used in selecting the sample. It was purposeful because only JSS 11 in public secondary schools within Maiduguri and Jere local government areas engaged in child labour and schooling were picked. It was volunteered because only those who were willing and ready to respond to the researcher's designed instrument were randomly selected and used for the study. The stratification was based on gender, age, school type, location, class level, and being engaged in child labour.

Instrumentation: The researcher's self-authored 21-item questionnaire tagged "Child Labour Questionnaire (CLQ)" was the instrument used to elicit data for the study. The CLQ was divided into three parts (A, B, and C). Part "A" was on demographic characteristics of the respondents such as gender, age range, hours of labour, etc. Part "B" elicited data on forms of child labour in the study area while part "C" sought data on the effects of child labour on academic performance of junior secondary school students in the study area. Parts B and C were designed using 4 Likert Scale of Strongly Agreed, Agreed, Disagreed, and Strongly Disagreed with corresponding values of 4, 3, 2, and 1. A cut-off value of 2.5 was used in decision-making.

Validity: The face and content validity of CLQ was done by three experts in the fields of Measurement and Evaluation, Sociology, and Guidance and Counselling from the University of Maiduguri, Borno State. A validity Index of 0.83 was obtained which was considered adequate and relevant for the study. Experts' judgments and corrections were incorporated which enhances the quality of the instrument.

Reliability: A test-re-test method was adopted for reliability. The CLQ was administered on two separate occasions after three weeks to subjects with the same characteristics as the respondents but outside the study. The reliability coefficient of 0.85 was obtained which was considered reliable for the purpose intended to achieve. **Administration of the Instrument:** Copies of the CLQ were administered by the researcher and two Research Assistants in each of the sampled schools for the study. Respondents were assembled in each of their halls and voluntarily filled the CLQ on the spot. There was 100% retrieval of the instrument with no mistakes

because the instructions were simple and strictly followed.

Method of Data Analysis: Data collected for the study on the research questions were collated and analyzed using mean and standard deviation. Responses having a cut-off value of 2.5 and above were accepted while those below the cut-off value were rejected. Student t-test was used in testing null hypothesis 1 while Analysis of variance (ANOVA) was used in testing null hypothesis 2 at 0.05 alpha level. Statistical Package for Social Sciences (SPSS) Version 25.0 was employed for the computations. The results were presented in Tables 1 to 5 based on the research questions and hypotheses.

Results

Research Question One: What are the demographic variables of junior secondary school students engaged in child labour in Borno State, Nigeria?

Table 1: Demographic Variables of Junior Secondary School Students Engaged in Child Labour in Borno State, Nigeria

S/N	Schools	Total	Gender		Age-Range (years)			Parents' Educational Status		
			Male	Female	14 <	15-17	18 &>	Quran	NCE/Dip	Degree
1	Maisandari	24	10	14	09	13	02	14	07	03
2	Shehu	24	11	13	10	11	03	10	09	05
3	Garbai Yerwa	24	10	14	08	14	02	17	05	02
4	Central Kulogumna	24	13	11	07	13	04	12	10	02
5	Yerwa	24	09	15	10	10	04	14	09	01
6	Practice Lamisula	24	11	13	06	16	02	13	07	03
7	Maimusari	24	10	14	08	13	03	12	09	03
8	Mafoni	24	12	12	11	11	02	11	07	06
9	Bulabulin	24	11	13	09	13	02	13	08	03
	Total	**216**	**97**	**119**	**78**	**114**	**24**	**117**	**71**	**28**

Table 1 reveals that 97(45%) of the respondents were male junior secondary school students engaged in child labour while 119(55%) were female which suggested that female girl-child are more engaged in child labour than male-child. Additionally, 78(36.1%) of the respondents fall within the age bracket of 14 years and below, 114(52.7%) fall within the age bracket of 15 and 17 years while 24(11.1%) fall within 18 years and above. This by implication suggested that child labour is at its peak. Furthermore, 117(54.7%) of the respondents had informal education specifically attended Quranic school, 71(32.9%) obtained National Certificate in Education or Diploma certificates while 28(13.0%) had first-degree certificates. This suggested that the majority of the parents are ignorant of child labour and its attendant implications. These statistics revealed that the researcher is sensitive to gender and age issues, and as well have informed respondents that possess the ability to give reliable and valid responses to the research questions.

Research Question Two: What are the forms of child labour engaged by junior secondary school students by gender in Borno State, Nigeria?

Table 2: Forms of Child Labour Engaged by Junior Secondary School Students by Gender in Borno State, Nigeria (N = 216)

		Responses by Gender			
		Male Responses		Female Responses	
S/N	Forms	X (Std.D)	Remark	X(Std.D)	Remark
6.	Street Hawking	3.40 (0.86)	Accepted	3.56 (0.73)	Accepted
7.	Farming	2.77 (0.71)	Accepted	3.36 (0.64)	Accepted
8.	Tailoring and Embroidery	3.37 (0.73)	Accepted	3.88 (0.66)	Accepted
9.	Pure Water Vendors	3.02 (0.67)	Accepted	3.36 (0.74)	Accepted
10.	Carpentry and Upholstery Apprentice	3.23 (0.89)	Accepted	3.13 (0.69)	Accepted
11.	Washing of Plates in Restaurants	3.31 (0.71)	Accepted	3.25 (0.75)	Accepted
12.	Bus Conductor	2.91 (0.87)	Accepted	3.53 (0.82)	Accepted
13.	Sales of Second Hand Clothes	3.04 (0.76)	Accepted	-	-
14.	Kiosk/Shop Attendant	3.51 (0.60)	Accepted	3.40 (0.86)	Accepted
15.	Car and Carpet Wash	2.27 (0.76)	Accepted	-	-
16.	Domestic Servant/Chores	3.01 (0.82)	Accepted	3.25 (0.75)	Accepted
17.	Production of Refreshing Drinks	2.72 (0.78)	Accepted	3.53 (0.82)	Accepted
18.	Fuelwood/Charcoal Seller	3.87 (0.51)	Accepted	-	-
19.	Panel Beating Apprentice	2.56 (0.64)	Accepted	-	-
20.	Welding Apprentice	3.56 (0.73)	Accepted	-	-
21.	Automobile Mechanic	3.36 (0.64)	Accepted	-	-
22.	Battery Charging	3.88 (0.66)	Accepted	-	-
23.	Barbing /Hair Dressing Salon	3.36 (0.74)	Accepted	3.23 (0.89)	Accepted
24.	Electrical Installations Apprentice	3.13 (0.69)	Accepted	-	-
25.	Bicycle Repairs	3.25 (0.75)	Accepted	-	-
26.	Generator Repairs Apprentice	3.53 (0.82)	Accepted	-	-
27.	Painting Work	2.49 (0.59)	Accepted	-	-
28.	Dying of Clothes	3.22 (0.64)	Accepted	-	-
29.	Fixing of Set-light Dish	3.23 (0.63)	Accepted	-	-
30.	Fixing of tiles/Interior Decorations	2.98 (0.79)	Accepted	3.67(0.51)	Accepted
31.	Cap making and washing	2.95 (0.78)	Accepted	3.82 0.73)	Accepted
32.	Petrol Dispensers at Filling Stations	2.91 (0.73)	Accepted	-	-
33.	Pedicure/Manicure	3.27 (0.55)	Accepted	-	-
34.	Shoes Shining/Cobbler	3.67 (0.51)	Accepted	3.87 (0.51)	Accepted
35.	Refrigerator/Freezer Repairs	3.82 0.73)	Accepted	-	-
36.	Mobile Phone Repairs Apprentice	3.59 (0.83)	Accepted	3.87 (0.51)	Accepted

All Figures in Parentheses are Standard Deviations
X = Mean, Std.D = Standard Deviation

Table 2 indicated 36 different jobs where child labour is engaged based on gender as a means of livelihood. Some of the major livelihoods where child labour is engaged include: Shoe shinning, mobile phone repairs, street hawking, domestic chores, barbing/hairdressing salons, kiosk/shop attendants, cap making and washing, pure water vendors, battery charging, tailoring and embroidery, washing of plates in restaurants, production of refreshing drinks, refrigerator/freezer repairs, automobile mechanics and fuelwood/charcoal selling, Some of the minor livelihoods engaging child labour include: Panel beating, welding apprentice, bus conductor, petrol

dispensing, painting, farming, car, tricycle, and carpet wash as well as fixing of tiles/interlocks and interior decorations. These are the jobs engaging the daily hours of the child to the detriment of their education.

Research Question Three: What are the effects of child labour on the academic performance of junior secondary school students by gender in Borno State, Nigeria?

Table 3: Effects of Child Labour on Academic Performance of Junior Secondary School Students by gender in Borno State, Nigeria (N = 216)

		Responses by Gender			
	Male Responses			Female Responses	
S/N	Effects	X (Std.D)	Remark	X(Std.D)	Remark
6.	School dropout	3.40 (0.86)	Accepted	3.56 (0.73)	Accepted
7.	Frequent Repeating of Class	3.36 (0.74)	Accepted	3.36 (0.69)	Accepted
8.	Poor School Attendance	3.37 (0.73)	Accepted	3.88 (0.66)	Accepted
9.	Psychosocial Disorder	3.59 (0.83)	Accepted	3.87 (0.75)	Accepted
10.	Substance Abuse	3.23 (0.89)	Accepted	3.13 (0.64)	Accepted
11.	Road Traffic Accidents	3.31 (0.71)	Accepted	3.25 (0.71)	Accepted
12.	Criminal Activities	3.02 (0.67)	Accepted	3.36 (0.51)	Accepted

All Figures in Parentheses are Standard Deviations X = Mean, Std.D = Standard Deviation Hypotheses.

Table 3 shows school dropout, frequent repeating of class, poor school attendance, and psychosocial disorder as the major effects of child labour ascertained by male and female respondents while substance abuse, road traffic accidents, and criminal activities constituted the minor effects of child labour on academic performance of junior secondary school students make certain by gender in the study area.

HO_1: There is no significant relationship between child labour and academic performance of junior secondary school students by gender in Borno State, Nigeria

Table 4: T-test analysis on the Relationship between Child Labour and Academic Performance of Junior Secondary School Students by Gender in Borno State, Nigeria

Variable	N	X	Std.	df	t-cal.	T-crit.	Decision
Male	97	0.13	1.02	215	2.16	1.07	Rejected
Female	119	1.41	1.66				

Evidence from Table 4 revealed that the calculated t-value of 2.16 is more than the t- t-critical of 1.07 at 0.05 significant level. Thus, the null hypothesis was discarded in favour of the alternative.

HO_2: There is no significant age difference in the effects of child labour on the academic performance of junior secondary school students in Borno State, Nigeria

Table 5: ANOVA Table on Age Difference on the Effects of Child Labour on Academic Performance of Junior Secondary School Students in Borno State, Nigeria

Source of Variation	Sum of Squares (SS)	Df	Mean Squares (MS)	Calculated F-ratio	Critical F-ratio	Remark
Between	15429.6	2	5143.2			
Within	401808.6	309	789.4	1.52	2.61	Not Sign.
Total	417238.2	513				

Table 5 indicates that the calculated F-ration of 1.52 is less than the critical F-ration of 2.61 at 0.05 thus, not significant, and the hypothesis is upheld.

Discussion

The study investigated the forms and effects of child labour on the academic performance of junior secondary school students in Borno State, Nigeria. Findings of the study on research question one asked what the demographic variables of junior secondary school students engaged in child labour in Borno State, Nigeria. This finding reveals that the girl-child is more engaged in child labour compared to the male counterpart despite the disadvantageous position of the State in terms of education. It was found that 97(45%) of the respondents were boys while 119(55%) were girls in junior secondary school students engaged in child labour which affirms that girl-child is more at the receiving end. Age however, 78(36.1%) of the respondents fall within the age bracket of 14 years and below, 114(52.7%) fall within the age bracket of 15 and 17 years while 24(11.1%) fall within 18 years, and above. This by implication connotes that child labour is at its peak, involving more girls at tender ages signifying a jinx future. This finding corroborates the earlier studies of Abe (2019), Fayokun (2020), Onomodeke (2020), and Yap (2019) observed that for a child to perform academically well has to be punctual, face learning squarely, avoid late coming to class and consult with teachers in terms of seeking clarity on issues. Thus, the more frequently a child attains classes, the less time s/he has for labour. Hence, ensuring commitment to learning entail avoiding child labour, and truancy, administrative records (attendance register) are used daily, free tuition fees to encourage learning, provision of free books, school uniforms, bags, pairs of sandals, and sucks in addition to the provision of medical facilities and balanced diets regardless of the type of school (boarding or day, boys, girls or co-education, urban or rural).

Research question two asked what are the forms of child labour engaged by junior secondary school students by gender in Borno State, Nigeria? The findings revealed 36 different forms of child labour engaged by male and female junior secondary school students in the study area. Some of the child labourers engaged daily before and after school hours as means of livelihood including Domestic chores, street hawking, kiosk/shop attendants, sales of refreshing drinks, fuelwood/charcoal selling, washing of plates in restaurants, shoes shinning, bus conductor, petrol dispensing, mobile phone repairs, barbing/hairdressing salon, cap making and washing, pure water vendors, battery charging, tailoring and embroidery, refrigerator/freezer repairs, automobile mechanics, panel beating, welding apprentice, painting, farming, car, tricycle, and carpet wash as well as fixing of tiles/interlocks and interior decorations. The findings of this study agreed with the earlier studies of Abani, Garba & Talle (2022), Garbati & Salisu (2022), and Madaki & Bello (2023) who expressed that engaging students in any form of child labour before or after school hours' entails depriving the child of acquiring right, functional and dependable education as well as stopping the state or the nation at large from educational and all-round advancement. Madaki & Bello (2023) for example, stressed that the northern part of the country remains educationally backward despite several efforts made by numerous governments at all levels due to blatant ignorance and religious misconceptions. Denying children Western education by way of engaging them in menial jobs during and after school hours is the root cause of all calamities.

Research question three was on what are the effects of child labour on the academic performance of junior secondary school students by gender in Borno State, Nigeria. This study established school dropout, frequent repeating of class, poor school attendance, psychosocial disorder, substance abuse, road traffic accidents, and criminal activities to have constituted effects of child labour on the academic performance of junior secondary school students by gender in the study area. The finding of this study corresponds with the findings of Ravallion & Wodon (2019), Alio (2018), Onomodeke (2020), Yap (2019), Garbati & Salisu (2022), and Madaki & Bello (2023). Students especially the junior ones are made to become habitual latecomers, have no time to study, hardly sit for exams, subsequently drop out of school, are not well fed, end up as substance abusers, and become nuisance to the family and society at large. Garbati & Salisu (2022) reported that most parents in the northern part of the nation could not harness the "fruits of their labour" because of their intrinsic dislike for Western education which in turn paved the avenue for dependency and

neglect. Children engaged in child labour spend the greater part of their daily hours in hawking and other menial jobs at the expense of their education ending up as beggars or crushed through road accidents under the influence of drugs.

The finding of this study on hypothesis one which states no significant relationship between child labour and academic performance of junior secondary school students by gender in Borno State, Nigeria was rejected because the calculated t-value of 2.16 is more than the t-critical of 1.07 at 0.05 significant level. Thus, the null hypothesis was discarded in favour of the alternative. The finding of this study agrees with the studies of Onomodeke (2020), Yap (2019), and Garbati & Salisu (2022) who found that punctuality on class attendance, good study habit, good memory (retention and remembering), notes taking, doing assignment or homework, availability of books and class interactions are some of the supreme parameters necessary for students' academic performance at all levels. Students who are truant or habitual latecomers, lack or have inadequate reading and writing materials, do not take notes, and are poor in doing assignments will end up with poor academic performance which may lead to withdrawal, school dropout, or bad academic achievement.

The finding of this study on hypothesis two which states no significant age difference on the effects of child labour on the academic performance of junior secondary school students in Borno State, Nigeria was upheld because the calculated F-ration of 1.52 is less than the critical F-ration of 2.61 at 0.05 alpha level thus, not significant and the hypothesis is upheld. The finding of this study agrees with the studies of Abani, Garba & Talle (2022), Garbati & Salisu (2022), Madaki & Bello (2023) and Haruna (2023). Haruna (2023) for example, reported that 57% of public secondary school students in contemporary Nigeria are academically deficient irrespective of gender and courses of study (sciences, commercial, or arts). Those engaged in domestic or commercial activities before and after class hours are the worst with bad academic performance. Orazen (2019) also affirms that poor academic performance is not a product of age but the degree of seriousness in class attendance, notes/lecture taking, good study habits, and the extent of the effective and efficient use of the library.

Implications for Counselling

Based on the findings of this study, the Universal Basic Education Commission (UBEC) and State Universal Basic Education Board (SUBEB) should in collaboration with the Borno State Ministry of Education, Science, Technology and Innovation involving the National Orientation Agency (NOA) and the Mass Media (Visual and Blind) create awareness to parents/guardians on the significance of enrolling their off-springs and allowing them ample time to study. Where need be, stringent policies can be endorsed curtailing parents/guardians from engaging students in child labour before, during, and after school hours except probably on holidays. Parents/guardians and/or principals/teachers should be discouraged from engaging students in menial jobs or sending them during school hours to avoid the ultimate consequences of being truant, habitual late coming to school/class and not doing homework/assignments.

The Borno State Ministry of Education, Counsellors, Educationists, and researchers should collaborate with Parents Teachers Associations (PTA) chairmen and organize conventions, seminars, workshops, and conferences on the negativities of engaging school children in child labour. The effects of child labour on the children, parents/guardians, and society at large need to be categorically spelt out. Handbills, posters, billboards, phone-in-calls, and many similar programs can be organized, designed, and printed with the view to enlighten the general public on the detrimental effects of child labour on the individual child, and parents' concern and retarding national development.

Principals/Headteachers should in conjunction with their management team/staff create an

enabling school climate that can warrant or encourage students' learning. Availability of reading and writing materials, good/functional academic library, presence of qualified and experienced members of teaching staff that are ready to cooperate and deliver, constant practice for better performance, keeping a class register, close supervision, monitoring and evaluation as well as rendering counselling services can go a long way in helping the students achieve their ultimate goals.

Conclusion

Based on the findings of this study, it was concluded that child labour is detrimental to children, parents/guardians, and the nation at large. The academic performance of the students can only be improved if parents/guardians are curtailed from engaging school-going children in labour for whatever gain. Governments at all levels should legislate and enlighten through all media outfits in the language they best comprehend on the importance and compulsory enrolment of children from primary to junior secondary school level. Failure to abide by the policy should be penalized. This becomes necessary because children need time to study for a better tomorrow. Thus, counsellors, parents/guardians, principals/teachers, and all stakeholders should put hands on deck to salvage the children who would be future champions.

Recommendations

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

1. The Federal, Borno State, and Local Governments should through appropriate quarters enact stringent policies, laws, bylaws, or edicts stopping all forms of child labour and reprimand, castigate or penalize defaulters appropriately.
2. UBEC, SUBEB, Federal and Borno State Ministries of Education, Counsellors, and all other stakeholders in the dispensation of Western education should encourage and positively reward parents/guardians for enrolling their offspring and allowing them time to study.
3. Principals in Borno State should encourage the provision of adequate teaching and learning materials (including all school records) in the secured school climate by the government through Ministries of education at all levels.
4. The Ministries of Education, PTA, Counsellors, and School Management should encourage staff training and re-training for better and enhanced delivery and students' praiseworthy or credible performance.

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CURRICULUM INNOVATION FOR SUSTAINABLE DEVELOPMENT THROUGH SCIENCE EDUCATION

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Abstract
This paper delves into innovative curricula for sustainable development. Specifically, the aim is to provide useful insights and motivation for the advancement of a sustainability education system that empowers learners to become informed, and proactive change-makers in the development of a more just and sustainable global community. In the first section, the paper gives an overview of The Need for Curriculum Innovation, The second section explores tools for incorporating sustainability into the curriculum, while the third section Identifying Barriers to Curriculum Innovation for Sustainable Development and proposes strategies to Overcome the Challenges. The paper discusses ways that interdisciplinary collaboration can enhance the development of curriculum innovation for sustainable development in the fourth section. In the fifth section, the attention of the paper is on speculating on Future Trends and Advancements in Curriculum Design and Implementation for Sustainable Development in Nigeria. The paper later dealt with innovative curriculum; challenges and opportunities; and prospects in innovative curriculum processes and implementation for sustainable development respectively. In conclusion, various issues in the innovative curricula for sustainable development like multidisciplinary collaboration, active stakeholder involvement, thorough assessment and evaluation, and awareness of problems and challenges have been made clear by this paper. The researcher recommends that curriculum development agencies should create curricula with an integrated, dynamic approach that is mindful of the shifting demands of sustainability and engage all stakeholders in meaningful discussions on crucial issues to ensure the curriculum's impact and relevance. It is also important to support interdisciplinary research that presents various viewpoints on sustainability.

Keywords*:* Curriculum; Curriculum Innovation; Development; Pedagogue; Sustainability; and Sustainable development

Introduction
Curriculum development plays a fundamental role in shaping educational systems and preparing learners for the challenges of the future. As Nigeria strives for sustainable development, it is essential to anticipate trends and advancements in curriculum design and implementation. Sustainability in education encompasses programs and institutional arrangements geared toward environmental protection and the prudent utilization of natural resources (Dale & Newman, 2005). UNESCO underscores education as the linchpin for promoting sustainable development and achieving the SDGs (UNESCO, 2017). In the 21st century, learning must engage learners with relevant skills, knowledge, and real-world connections to be truly effective (Trilling & Fadel, 2012). The shift towards sustainability requires not only technological advancements but also shifts in mindsets, values, and lifestyles (Wals, 2012). Education for Sustainable Development (ESD) is pivotal for empowering individuals to embrace sustainability and cultivate the requisite knowledge, skills, and attitudes for sustainable development (Ploum, Blok, Lans, &Omta, 2018).

The Need for Curriculum Innovation

In today's world, the urgency of addressing sustainability challenges has become increasingly apparent. Issues such as climate change, biodiversity loss, resource depletion, and environmental degradation are posing significant threats to the well-being of both current and future generations (Polasky, Kling, Levin, Carpenter, Daily, Ehrlich, Heal & Lubchenco, 2019). Curriculum innovation is essential to equip students with the knowledge, skills, and values necessary to navigate and address sustainability challenges effectively. Traditional educational approaches have often been criticized for their narrow focus on disciplinary content and a lack of emphasis on real-world application and critical thinking. As such, there is a growing recognition of the need to reevaluate and transform educational frameworks to better align with the goals of sustainability.
Sustainability challenges encompass a wide range of interconnected environmental, social, and economic issues. Climate change, arguably one of the most pressing challenges of our time, is driven by human activities such as the burning of fossil fuels, deforestation, and industrial agriculture (Pasqui & Giuseppe, 2019). This phenomenon has far-reaching consequences, including rising global temperatures, extreme weather events, sea-level rise, and disruptions to ecosystems and biodiversity.

In addition to climate change, other sustainability challenges include biodiversity loss, pollution, resource depletion, social inequality, and environmental injustice (Gurauskienė, 2023). These issues are often complex and multifaceted, requiring interdisciplinary approaches and systemic solutions. Addressing sustainability challenges requires not only technological innovation but also changes in behaviour, policy, and societal norms. Science education plays a crucial role in addressing sustainability challenges by fostering scientific literacy, critical thinking, and problem-solving skills. Science provides the foundation for understanding the natural world, including the principles that govern ecosystems, the laws of physics, and the chemistry of environmental processes (Hogan & Flaherty, 2021). By engaging students in scientific inquiry and exploration, science education cultivates curiosity, creativity, and a deeper appreciation for the complexity and interconnectedness of the world around us. Moreover, science education can empower students to become informed and active citizens capable of making sustainable choices and advocating for positive change in their communities. By integrating sustainability principles into science curricula, educators can inspire students to explore the ethical, social, and environmental dimensions of scientific issues and to consider the long-term consequences of human actions on the planet.

ESD is integral to quality education, aligning with the concept of lifelong learning enshrined in SDG 4 (UNESCO, 2017). Therefore, educational institutions, both formal and informal, should embed sustainability competencies into their curricula (Ploum, et al., 2018). ESD encompasses a holistic approach to learning, emphasizing active pedagogy and the learning environment as crucial factors in developing key sustainability competencies (Rieckmann, 2012; Wals, 2014).
To ensure effective ESD, integrating interdisciplinary teaching and learning approaches such as project-based learning, inquiry-based learning, experiential learning, and collaborative learning, alongside the use of technology and online resources, is recommended (Thomas, 2009; Jones, Selby & Sterling, 2010). These methods foster sustainability skills such as problem-solving and critical thinking, essential for addressing complex sustainability challenges (Lambrechts, 2015).

While recent studies have proposed frameworks to assist educators in cultivating sustainability competencies, there remains a gap in research on pedagogical approaches (Lozano, Merrill, Sammalisto, Ceulemans, & Lozano, 2017). Thus, this study aims to examine pedagogical strategies for integrating sustainability into the curriculum, contributing to the ongoing discourse on sustainable education. Among the many objectives of this study are:

1. What are the teaching methods for incorporating sustainability into the curriculum?
2. What are the tools for incorporating sustainability into the curriculum?

3. What are the techniques for incorporating sustainability into the curriculum?

8. Teaching methods for incorporating Sustainability into the Curriculum

Teaching methods can be seen as objective-oriented activities and flow of information between teachers and students. Studies of teaching methods are important because teaching methods influence all types of learning in the cognitive, affective, and psychomotor domains (Karami, Pakmehr&Aghili, 2012; Prince & Felder, 2006). The choice of teaching methods depends on the kind of teaching approach used. Traditional instruction is deductive and comprises the principles and methods used for instruction to be implemented by teachers to achieve the desired learning or memorization by students. Learning is measured using objectively scored tests and assessments (Karami, et al., 2012; Eisner, 2004). Alternative teaching approaches are inductive where instruction begins e.g., with observations, experimental data to interpret or a real-world problem to be solved. In this student-centred approach to learning, teachers and students play an equally active role in the learning process. The teacher's primary role is to coach and facilitate student learning and overall comprehension of material. Learning is continuously measured using both formal and informal forms of assessment, including group projects, student portfolios, and class participation (Karami, et al., 2012). The selection of teaching methods is affected by the learning objectives. The specified learning objectives also provide the goals at which the curriculum is aimed, they facilitate the selection and organization of content, and make it possible to evaluate the outcomes of the learning (Eisner, 2004). Several good features are emphasized in the analyzed teaching methods and have implications especially for developing curricula and teaching for sustainability.

Previous studies have shown that in active teaching-learning processes, retention of knowledge is significantly increased (Grant, 1997; Cooper, MacGregor, Smith & Robinson, 2000), there is enhanced motivation and higher-order learning (Kern & Carpenter, 1986), and development of practical skill (Kent, Gilbertsson, & Hunt, 1997). To achieve the goals of SD, active teaching methods such as process-based instruction, problem-based learning, and OE are recommended by several researchers (Dale & Newman, 2005; Palmberg, & Kuru, 2000; Jeronen, Jeronen, &Raustia, 2009). Process-based instruction focuses on developing student's independence in learning and problem-solving by providing a framework into which curriculum activities can be placed

(Ashman & Conway, 1993). In problem-based learning, students use "triggers" from a problem case or scenario to define their learning objectives. Subsequently they do independent, self-directed study before returning to the group to discuss and refine their acquired knowledge (Wood, 2003). Collaborative learning can be supported in various ways, such as through information searching (Volet, Summers, & Thurman, 2009) and knowledge production within groups (Khosa & Volet, 2014). It can also involve jointly evaluating learning, actions, and knowledge (Volet, Vauras, Khosa, & Iiskala, 2013).

The ever-growing importance of complex problem-solving and knowledge construction in modern society emphasizes the need for collaborative activities and settings in schools to foster learning and collective competencies (Vauras &Volet, 2013). Collaborative learning is seen as an active process resulting in jointly processed knowledge better than the knowledge produced by an individual (e.g., Häkkinen, 2003). This is especially the case concerning environmental issues, which should be solved to support sustainable development. Recently, collaborative and inquiry-based study approaches have been investigated in computer-assisted study environments in science. Studies have indicated that inquiry-based learning can be applied to the context of computer-assisted collaborative learning and that collaborative technology facilitates high-level cognitive and social interaction while students work together toward deeper understanding (e.g., Hakkarainen, 2003). These skills are important when solving multifaceted environmental problems to work toward a more sustainable lifestyle. Field-based activities, e.g., fieldwork and

field trips, provide students with authentic and interactive experiences and experiential learning opportunities, which increase students´ interest and enhance their learning (Simmons, Wu, Knight, &Lopez, 2008). Students´ engagement in field-based activities plays an essential role in learning biological issues. Fieldwork provides students with a chance to observe nature and the environment and to use scientific inquiry to test ideas and concepts they have learned in the classroom. According to Hart and Nolan (Hart &Nolan, 1999) fieldwork had a positive effect on students´ knowledge, attitude, and behaviour, crucial factors also in promoting sustainability.

9. Tools for Incorporating Sustainability into the Curriculum

Online Platforms and Resources:

Platforms on the internet such as the United Nations Sustainable Development Goals (SDGs) offer a diverse range of resources for educators wishing to infuse sustainability into their teaching. These platforms provide educators with the opportunity to explore various lesson plans, teaching guides, and multimedia materials covering diverse sustainability topics, thereby enriching student learning experiences through the utilization of current information and engaging resources (Gifford et al., 2019).

Educational Games and Simulations:

Educational games and simulations establish interactive learning environments that capture students' interest in exploring sustainability concepts. For example, the simulation game "World Climate" allows students to simulate climate change scenarios and evaluate the potential impacts of different mitigation strategies (Sterman & Sweeney, 2007). Similarly, the simulation game "Fishbanks" immerses students in the complexities of sustainable fisheries management (Stern, 2005). Research by Klabbers et al. (2018) indicates that these games enhance students' understanding of sustainability topics by providing experiential learning opportunities and fostering critical thinking skills.

Community Engagement Projects:

Community engagement initiatives offer students the chance to apply sustainability principles in practical contexts. According to Wiek et al. (2011), collaborating with local organizations or participating in community-based projects enables students to collectively address sustainability challenges and develop effective solutions. For instance, students could engage in activities like environmental restoration, sustainable agriculture, or energy conservation efforts, gaining valuable firsthand experience while making meaningful contributions to their communities (Wiek et al., 2011).

Case Studies and Research Projects:

The collaboration of case studies and research projects into the curriculum empowers students to analyze real-life instances of sustainability practices and dilemmas. Hmelo-Silver et al. (2007) highlight that case studies provide immersive learning experiences filled with context, prompting students to consider different perspectives and sharpen their problem-solving abilities. By investigating sustainability issues through research projects, students can deepen their understanding of complex subjects and contribute to knowledge development in the field (Hmelo-Silver et al., 2007).

Green Campus Initiatives:

Efforts that promote sustainability within campus settings offer students the opportunity to engage in sustainable initiatives within their academic institutions. Leal-Filho et al. (2019), universities and colleges can introduce a variety of initiatives such as renewable energy projects, waste reduction programs, and sustainable transportation alternatives. These initiatives not only reduce the environmental impact of campus operations but also serve as practical learning platforms for students to explore sustainability concepts in action. By participating in campus sustainability endeavours, students gain practical experience and contribute to the establishment of more

sustainable learning environments (Leal-Filho et al., 2019).

10. Techniques for Incorporating Sustainability into the Curriculum

Project-Based Learning (PBL):

Project-based learning is an educational approach that enables students to investigate and tackle authentic sustainability challenges in the real world. Stevenson et al. (2019) assert that PBL entails students in practical, inquiry-based learning activities that foster critical thinking and problem-solving skills. For instance, students might collaborate on tasks like designing sustainable urban infrastructure, conducting environmental impact assessments, or formulating community-based conservation strategies. Through their involvement in authentic sustainability initiatives, students not only boost their understanding of environmental concerns but also develop practical abilities for tackling them (Stevenson et al., 2019).

Service-Learning:

Service-learning merges community service with academic learning goals, offering students the chance to apply sustainability principles in real-life settings. Jacoby (2015) asserts that service-learning opportunities empower students to interact with local communities and contribute to sustainable development endeavours. For example, students could engage in activities such as organic gardening, energy audits, or environmental education initiatives. By participating in service learning, students develop a sense of civic duty and acquire firsthand experience in advancing environmental stewardship and social equity (Jacoby, 2015).

Interdisciplinary Approaches:

Interdisciplinary methodologies incorporate sustainability throughout various academic disciplines, encouraging students to explore intricate environmental problems from diverse standpoints. Sterling et al. (2017) recommend that interdisciplinary education fosters collaboration and innovation by connecting academic barriers. For instance, students may enroll in interdisciplinary courses or partake in joint research ventures addressing sustainability challenges from scientific, social, and cultural angles. Through engagement in multidisciplinary methods, students foster a thorough comprehension of sustainability and acquire the capabilities essential to address diverse environmental challenges (Sterling et al., 2017).

Experiential Learning:

Experiential learning strategies, such as field trips, outdoor education, and immersive simulations, offer students firsthand experiences that deepen their connection to nature and foster environmental consciousness. Rickinson et al. (2004), experiential learning opportunities allow students to explore natural environments, observe ecological processes, and contemplate their interactions with the natural world. For example, students might engage in field studies to observe local ecosystems, conduct biodiversity surveys, or participate in outdoor adventure pursuits. Through practical learning experiences, students nurture a feeling of environmental guardianship and acquire a profound admiration for the interdependence of all life forms (Rickinson et al., 2004).

Critical Pedagogy: Critical pedagogy approaches sustainability education through a lens of social justice, equity, and empowerment, urging students to critically evaluate the underlying causes of environmental issues and advocate for transformative change. Jickling and Sterling (2017) emphasize that critical pedagogy challenges established power structures and encourages dialogue, introspection, and action toward sustainability. For instance, students may delve into topics such as environmental discrimination, climate justice, or indigenous knowledge systems, critically assessing the intersections of social inequity and environmental harm. Through critical pedagogy, students develop the competencies and consciousness required to confront systemic obstacles to sustainability and strive for a more impartial and fair world (Jickling& Sterling, 2017).

Interdisciplinary Approaches to Curriculum Innovation for Sustainability Interdisciplinary approaches to curriculum innovation for sustainability are crucial in addressing the complex and interconnected challenges facing our planet. Sustainability, encompassing environmental, social, and economic dimensions, requires holistic solutions that go beyond disciplinary boundaries. By integrating various fields of knowledge, interdisciplinary approaches can foster a deeper understanding of sustainability issues and empower learners to develop innovative solutions. This essay explores the importance of interdisciplinary curriculum innovation for sustainability and discusses key strategies with examples.

Firstly, interdisciplinary approaches to curriculum innovation enable learners to grasp the interconnectedness of sustainability issues (Bertel, Winther, Routhe&Kolmos, 2021). Environmental challenges such as climate change, biodiversity loss, and resource depletion are inherently complex and cannot be adequately addressed within the confines of a single discipline. By integrating knowledge from disciplines such as environmental science, economics, sociology, and political science, learners can develop a more comprehensive understanding of the root causes and impacts of sustainability issues. This interdisciplinary perspective encourages critical thinking and problem-solving skills essential for developing effective solutions.

Furthermore, interdisciplinary curriculum innovation promotes collaboration and dialogue across diverse perspectives (Igbokwe, Ogbonna, Ezegbe, Nnadi&Eseadi, 2019). Sustainability issues often involve multiple stakeholders with varying interests and values. By bringing together students and educators from different disciplines, interdisciplinary approaches create opportunities for interdisciplinary dialogue and collaboration. Through interdisciplinary projects and group work, learners can explore diverse viewpoints, leverage complementary expertise, and co-create innovative solutions (Usman, Bologna & Stamidis, 2019). This collaborative approach mirrors real-world efforts to address sustainability challenges, where interdisciplinary collaboration is essential for achieving meaningful change.

Moreover, interdisciplinary curriculum innovation fosters creativity and innovation by encouraging learners to think outside the box (Isa, Lawal, Salihu, Shuaibu & Cledumas, 2023). Sustainability requires novel approaches and innovative solutions that challenge conventional wisdom and embrace complexity. By integrating insights from diverse disciplines, learners can draw inspiration from unexpected sources, leading to the development of creative solutions that may not emerge within traditional disciplinary silos. For example, a project that combines principles of biomimicry from biology with principles of sustainable design from engineering could lead to the development of innovative technologies inspired by nature.

Interdisciplinary approaches to curriculum innovation also empower learners to take action and effect positive change in their communities (Greville, House, Tarrant& Thompson, 2023). Sustainability education should not only focus on theoretical knowledge but also practical skills and competencies for sustainable living and citizenship. By engaging in interdisciplinary projects that address real-world sustainability challenges, learners can develop the knowledge, skills, and values necessary to become active agents of change. For instance, a community-based project that combines scientific research with community engagement strategies can empower students to collaborate with local stakeholders and implement sustainable initiatives.

Furthermore, interdisciplinary curriculum innovation can help bridge the gap between academia and society by promoting the integration of research, education, and practice. Sustainability challenges require transdisciplinary approaches that transcend the boundaries between academic disciplines and engage with diverse stakeholders, including policymakers, businesses, and civil society organizations (Wolff, Cockburn, Wet, Bezerra, Weaver, Finca, Vos, Ralekhetla, Libala, Mkabile, Odume& Palmer, 2019). By incorporating real-world case studies and experiential

learning opportunities into the curriculum, interdisciplinary approaches can help learners understand the practical implications of sustainability research and apply their knowledge to real-world contexts.

In conclusion, interdisciplinary approaches to curriculum innovation are essential for advancing sustainability education and empowering learners to address the complex challenges facing our planet. By integrating knowledge from diverse disciplines, fostering collaboration and dialogue, promoting creativity and innovation, empowering learners to take action, and bridging the gap between academia and society, interdisciplinary curriculum innovation can play a key role in creating a more sustainable future. As we strive to build a more resilient and equitable world, interdisciplinary approaches offer a pathway toward transformative change.

Barriers to Curriculum Innovation for Sustainable Development and Proposing Strategies to Overcome the Challenges

Numerous factors may affect the smooth implementation of the curriculum and Resistance to change within educational systems.

"Curriculum Innovation for Sustainable Development" presents both challenges and opportunities in fostering progress towards a more sustainable future.

One significant challenge lies in the resistance to change within educational systems. Traditional curricula may be deeply entrenched, making it difficult to introduce innovative approaches that prioritize sustainability. Overcoming this barrier requires a concerted effort to raise awareness among stakeholders about the importance of integrating sustainability principles into education.

School location and Geographical factors

Geographical factors like isolation due to the act of nature may adversely affect the curriculum implementation due to inadequate accessibility. Such examples are the schools that are on islands in some parts of Nigeria.

Accessing such areas will require specialists trained in the usage of water-moving vessels. Some learning materials that are supposed to be accessed from the dry land will affect the learning especially if they are required on time. It will require making changes in the approaches in place like the methods of teaching where technology will be helpful.

Inadequate personnel and non-compliance to students-teacher ratio

Inadequate number of staff members to help in the implementation of the curriculum. There big shortage of teachers to handle the large number of learners, especially in the education-disadvantaged areas, given that there should be a 100% transition of learners from the previous grades or classes.

The only alternative to this employment of more qualified teachers by the government or by the board of management to help in curbing the shortage. Retired teachers can also be called upon to help in teaching at a smaller fee since they will also come in with a lot of rich experience. They should give back to society by offering their knowledge to the young ones.

Inadequate community involvement in the curriculum implementation.

For total curriculum implementation to take place in any learning environment, the community should be for it through continuous provision of the required services like resource persons, learning materials, and fee payment among others. If the above is not taken into consideration, then little will be innovated in matters of curriculum.

Cultural and religious prejudice

Cultural and religious prejudice are key obstacles in curriculum implementation. Many of the learners may be of different cultural and religious backgrounds also the curriculum change leaders. Therefore, a common accord should be reached to include all the interests in matters of religion and culture not forgetting related economic issues.

Additionally, cultural and societal norms can pose barriers to curriculum innovation for sustainable development. Deep-seated beliefs and values may conflict with sustainability objectives, making it challenging to garner widespread support for change. Overcoming these

barriers requires engaging with communities and fostering dialogue to promote a shared understanding of the benefits of sustainability education.

Regulatory Constraints and Bureaucratic

Furthermore, there may be regulatory constraints and bureaucratic hurdles that impede curriculum innovation. Educational policies and frameworks may not prioritize sustainability or may be rigid and inflexible, hindering experimentation and adaptation.

Advocating for policy reform and fostering collaboration between policymakers, educators, and relevant stakeholders is essential in overcoming these barriers.

Insufficient resources and sustainability

Lastly, insufficient resources and sustainability of the curriculum in place or the one to be innovated should go hand in hand with the available resources and if not enough, then more resources are supposed to be sought to enable effective curriculum innovation. Another obstacle is the not adequate of resources and infrastructure to support curriculum innovation. Many educational institutions may struggle with limited funding, outdated facilities, and inadequate teacher training. Addressing these challenges necessitates investment in educational infrastructure, professional development for educators, and access to updated teaching materials and technologies.

In conclusion, those who initiate the curriculum change ought to be at the forefront in ensuring it succeeds. They should consider targeting a few initiatives to avert the norm of getting back to normalcy after a short period. There should be the initiation of curriculum innovation, implementation, and continuity to come up with good and viable outcomes (fullan 1993, 2001, 2003). Curriculum innovation should involve the entire stakeholders in a holistic way (Fidler, 2002)

Strategies to Overcome the Challenges

Despite these challenges, there are significant opportunities to drive curriculum innovation for sustainable development. Integrating sustainability across disciplines presents a holistic approach to education, fostering critical thinking, problem-solving, and interdisciplinary collaboration among students. Embracing experiential learning, project-based approaches, and community engagement can enhance student engagement and facilitate the real-world application of sustainability principles.

Furthermore, leveraging technology and digital platforms can expand access to sustainability education, reaching diverse learners across geographical boundaries. Collaborating with industry partners and sustainability experts can enrich curriculum content and provide students with practical insights into real-world sustainability challenges and solutions.

In conclusion, addressing barriers to curriculum innovation for sustainable development requires a lower casa multifaceted approach that encompasses awareness-raising, capacity-building, policy advocacy, and stakeholder engagement. By overcoming these challenges and seizing opportunities for innovation, education can become a powerful catalyst for advancing sustainable development goals and shaping a brighter future for generations to come.

Speculating on future trends and advancements in curriculum design and implementation for sustainable development in Nigeria

This section speculates on future trends and advancements in curriculum design and implementation to foster sustainable development in Nigeria.

1. **Integration of Sustainable Development Goals (SDGs) into Curriculum:** Integrating Sustainable Development Goals (SDGs) into Nigeria's educational systems should form an essential aspect of modern curriculum design. The 2030 Sustainable Development Goals, adopted by all 193 member states of the United Nations, represent a comprehensive and inclusive

agenda aimed at addressing global challenges and fostering sustainable development. The fourth Sustainable Development Goal (SDG 4) is of particular significance as it underscores the importance of providing education that is inclusive, equitable, and of high quality to everyone, regardless of their gender, age, or social status. SDG 4 aims to promote opportunities for lifelong learning for both children and adults, to empower individuals to reach their full potential and to contribute to the social and economic development of their communities

The integration of the Sustainable Development Goals (SDGs) into curriculum design involves integrating the goals and principles of sustainability into a variety of topic areas and educational levels. This approach reflects a shift towards interdisciplinary teaching and learning, where students are encouraged to explore real-world issues and develop solutions through collaboration and critical thinking. Incorporating the SDGs into the curriculum can help educational institutions promote the larger agenda for sustainable development while teaching students the skills, values, and knowledge they need to tackle contemporary challenges effectively.

For Nigeria to advance, its education system must align with the SDGs. Integrating these goals into the curriculum lays the foundation for socially and environmentally aware learning, allowing students to become catalysts for change and advocates of the global sustainability movement. Nigeria can inspire its citizens to drive progress by embracing this trend.

2. Technology Integration:

Nigeria's education system has been following a theoretical curriculum model, which focuses primarily on the acquisition of knowledge through lecture and memorization This approach typically prioritizes testing and standardized examination performance, rather than prioritizing critical thinking and pragmatic knowledge. The traditional curriculum is rigid with little emphasis on interdisciplinary or real-world learning. The technological integration offers a transformative approach to curriculum design, with the potential to enhance learning outcomes and equip students with practical skills that are directly applicable to the challenges of sustainable development.

The current pace of technological advancement presents us with numerous opportunities for innovative curriculum design. We must not miss out on this chance to integrate virtual reality, digital literacy, coding, data analysis skills, artificial intelligence, and online learning platforms into our educational system. These tools enable students to engage with real-world environmental data, participate in global collaborative projects, and access educational resources beyond traditional classroom boundaries. By embracing technology in curriculum design, we can foster a more dynamic and interactive learning environment that empowers students to develop critical thinking skills, problem-solving abilities, and digital literacy competencies. It is high time that we move away from a rigid and compartmentalized curriculum and embrace a more interdisciplinary and real-world relevant approach.

In conclusion, the integration of technology into the curriculum is not just desirable, but essential for adequately preparing students for success in a rapidly evolving world. Nigeria has a unique opportunity to develop a curriculum that is not only more relevant and engaging but also more effective in fostering sustainable development and equipping future generations to navigate the challenges and opportunities of the digital age. These efforts will demonstrate our commitment to preparing students for a technology-driven world by seamlessly integrating technology into all aspects of the curriculum.

3. Integration of Community Engagement and Experiential Learning:

Incorporation of community engagement and experiential learning into our curriculum right from the basic level of education will play an essential role in recognizing the importance of fostering a deeper connection between students and their communities, future curriculum designs are to prioritize initiatives that promote active engagement and hands-on experiences. One crucial aspect

of this trend involves establishing partnerships with local organizations and stakeholders to create meaningful learning opportunities for students. These partnerships may include collaborative projects, service-learning initiatives, and internships focused on addressing real-world sustainability challenges within the community. By participating in such endeavours, students not only gain practical skills and knowledge but also develop a profound understanding of local issues and dynamics. Incorporating hands-on experiences, field trips, and community projects into the curriculum can offer students practical exposure to sustainable development initiatives. Whether it involves conducting environmental surveys, implementing waste management strategies, or promoting renewable energy solutions, these experiential learning opportunities offer students a chance to apply theoretical concepts in practical contexts. Furthermore, Internships and service-learning projects can also provide valuable opportunities for students to contribute to sustainable solutions while gaining valuable insights into community development processes. These can also help the students develop a sense of civic responsibility and empathy, which are essential attributes for active citizenship and sustainable leadership.

Community engagement and experiential learning will be vital in future Nigerian curriculums. They can empower students to become proactive agents of change in their communities, driving sustainable development and social progress.

4. Sustainability Education

In Nigeria, sustainable development demands that curriculum design and implementation incorporate sustainability education as a crucial component. It is important to integrate sustainability principles across various subjects within the curriculum to foster eco-conscious citizens who can competently tackle pressing environmental challenges. To achieve this, it is necessary to emphasize topics related to climate change, conservation, and renewable energy across the curriculum, spanning disciplines such as science, social studies, geography, and literature. Sustainability should not be treated as a standalone topic, but rather, as a pervasive theme throughout the curriculum.

For instance, in science classes, students can explore the science behind climate change, examine the impact of human activities on ecosystems, and learn about alternative energy sources. In social studies, discussions on sustainable development goals, environmental policies, and global initiatives can deepen students' understanding of sustainability issues from a socio-political perspective. Geography lessons can delve into the geographical factors influencing climate patterns, resource distribution, and biodiversity conservation efforts.

By infusing sustainability topics throughout the curriculum, students are exposed to a holistic understanding of environmental issues and their interconnectedness with various disciplines. This interdisciplinary approach not only enriches students' learning experiences but also fosters critical thinking, problem-solving skills, and a sense of environmental stewardship.

Moreover, integrating sustainability education into the curriculum empowers students to become active participants in sustainability initiatives both within their local communities and on a global scale. By engaging with real-world sustainability challenges through project-based learning, fieldwork, and community involvement, students develop practical.skills and a sense of agency, preparing them to contribute meaningfully to efforts aimed at building a more sustainable future for Nigeria and the world at large.

In conclusion, speculating on future trends and advancements in curriculum design and implementation for sustainable development in Nigeria requires a forward-thinking approach that prioritizes interdisciplinary collaboration, technological integration, community engagement, and the cultivation of critical thinking skills. By embracing these trends, Nigeria can position its education system as a catalyst for positive change towards a more sustainable future.

Implementation Strategies for Science Education Curriculum Innovation for Sustainability

In the pursuit of fostering sustainability literacy and preparing students for the challenges of the

future, implementing effective strategies is crucial. This essay focuses on four key implementation strategies for science education curriculum innovation: Professional Development, Curriculum Alignment, Community Engagement, and Technology Integration. Each of these strategies plays a vital role in enhancing the quality and effectiveness of sustainability education within science curricula. By examining these strategies in detail, educators can gain insights into how educators, policymakers, and stakeholders can work together to promote sustainability education and create a more sustainable future.

Conclusion

The framework outlined in education curriculum innovation for sustainability underscores the imperative of equipping students with the knowledge, skills, and values needed to address pressing environmental, social, and economic challenges. By embracing systems thinking, inquiry-based learning, real-world applications, and socio-cultural perspectives, educators can cultivate a generation of critical thinkers and problem-solvers capable of navigating the complexities of sustainability issues. Through professional development, curriculum alignment, community engagement, and technology integration, stakeholders can collaborate to promote effective sustainability education and empower students to become active agents of change in creating a more sustainable future. This comprehensive approach to curriculum innovation not only fosters environmental literacy but also nurtures a sense of stewardship and responsibility towards the planet and its inhabitants, ensuring a brighter and more sustainable tomorrow for generations to come.

Recommendation

It is therefore recommended that curriculum development agencies adopt an integrated and dynamic approach to curriculum design, ensuring it aligns with the evolving demands of sustainability. This approach should actively involve all stakeholders, including educators, policymakers, industry experts, and community members, in meaningful and inclusive discussions on critical issues. Such collaboration is essential to enhancing the curriculum's relevance, practicality, and long-term impact.

Additionally, it is crucial to prioritize and support interdisciplinary research that explores diverse perspectives on sustainability. This research should aim to provide comprehensive insights, foster innovative solutions, and address complex challenges. By incorporating varied viewpoints, curricula can better equip learners with the skills and knowledge required to navigate and contribute to a sustainable future.

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MANAGEMENT INFORMATION SYSTEM AS CORRELATE OF ADMINISTRATIVE EFFECTIVENESS IN PUBLIC COLLEGES OF EDUCATION IN ILORIN METROPOLIS, KWARA STATE

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Abstract
*This study examined Management Information System (MIS) usage in the administrative effectiveness of public colleges of education in Ilorin metropolis, Kwara State, Nigeria. The study is a descriptive survey of correlation type. Two research questions were raised and two hypotheses guided the study. Researcher-designed questionnaire tagged 'Management and Information System and Administrative Effectiveness Questionnaire (MISAEQ)' was used to collect data from the respondents and a coefficient of 0.76 was obtained as a reliability score for the instrument. The descriptive statistics of percentage score were used to answer the research questions and Pearson product-moment correlation coefficient and t-test were used to test the hypotheses at 0.05 level of significance. The findings of the study were that academic staff in Colleges of Education Ilorin are aware of and have access to MIS; non-academic staff effectively use the MIS, underscoring its significant role in supporting administrative functions within the Colleges of Education in Ilorin; there was positive significant relationship between the use of management information system and effective administration in Colleges of Education in Ilorin, Kwara State (*r= 0.73, p>0.05*); and there is no significant difference in the use of management information system among non-academic staff gender of Colleges of Education in Ilorin, Kwara State (t= .398, p>0.05). Hence, the study concludes that the Management Information System significantly positive relationship with administrative efficiency within the Colleges of Education in Ilorin, and it was recommended among others that, Colleges of Education should develop and implement comprehensive training programs for non-academic staff on the efficient utilization of Management Information System in the day-to-day affairs.*

Keywords: Management, Information, System, Administrative, effectiveness

Introduction
The administration and administrative functions of schools play significant roles in determining the goal achievement of any organization. Education as an organization, is a social institution and process where individuals acquire and internalize essential norms, values, attitudes, habits, and creative skills. These elements are not only necessary for individual survival but also contribute to societal progress. It can also be viewed as a formal mechanism for instilling desirable knowledge, values, and behaviours in individuals. This process aims to foster an understanding of humanity and empower individuals to become agents of social change. Ikechukwu and George (2020) argued that education remains a paramount driver of societal change. That is, the quality of educational systems is a key differentiator between developed and developing nations. Education is crucial for economic empowerment at both individual and societal levels. It provides individuals with the necessary skills and qualifications to enter the job market, secure better employment opportunities, and contribute to economic growth and stability (World Bank, 2019).

Higher education among other levels of education is recognized as institutions where knowledge and skills are acquired and utilized for the greater good (Federal Republic of Nigeria, FRN, 2013). Oyeneye (2006) highlights the prevalent view among students and parents that tertiary education serves primarily as a gateway to well-paying jobs and improved quality of life. Nations with effective and functional tertiary education systems are often distinguished by their advancements in science and technology, leading to faster progress in various social and economic indicators.

The quality of education provided in Nigerian tertiary institutions is demonstrably fundamental to achieving development across all sectors. Hence, education provided at tertiary institutions like Colleges of Education (CoE) is instrumental in developing a highly skilled and competent workforce.

According to the National Commission for Colleges of Education (NCCE), The COEs are one the higher degree awarding institutions of the Nigeria Certificate in Education (NCE) which offer a range of academic programs and courses in education-related fields, including Early Childhood Education, Primary Education, Secondary Education, Special Education, Technical Education, Science Education, and other conventional courses in business, social sciences and humanities. The programs typically include both theoretical and practical components, incorporating classroom instruction, teaching practice, and supervised field experiences to meet the needs and interests of various individuals for sustainability in society. The primary objective of CoE is to produce competent and well-trained teachers who can effectively facilitate learning, promote educational development, and contribute to the improvement of the Nigerian education system. The curriculum of CoE dives deep into teaching methods, subject expertise, educational psychology, classroom management, and assessment techniques. CoEs are overseen by the NCCE, Nigeria's governing body for these institutions. The NCCE sets the standards, guidelines, and accreditation processes to ensure top-notch teacher education. Often, CoEs collaborate with universities and other educational institutions, which improves their programs, fosters opportunities for further studies, and promotes professional development.

Colleges of Education are crucial for a strong education system, by training well-rounded and competent teachers that directly improve teaching and learning in schools. Their graduates, the educators of tomorrow, shape the future of students and ultimately impact the overall quality of education in Nigeria. To achieve this noble intention, administrative efficiency among other services in the CoEs plays a significant role.

Colleges of Education aims to equip teachers with a strong intellectual and professional foundation, enabling them to adapt to evolving situations and remain dedicated to the teaching profession. Ogba, Igu, and Alochere (2014) opined that in achieving the goals of the College of Education, excellent academic management and administration must be considered as a critical element. It is believed that academic staff alone cannot do their work effectively without the support of the non-academic staff, who coordinate the administrative activities in the College. The non-academic staff at Colleges of Education are professionals who handle various administrative and support services beyond teaching. This includes roles such as student support personnel, administrative assistants, facilities maintenance workers, and so on. These individuals play a vital role in the smooth functioning of the institution and contribute significantly to the overall success of the system.

Beyond their technical skills, non-academic staff possess a deep understanding of the school's values and goals. Their dedication and initiative are crucial in achieving the school’s mission, vision, and objectives. Their contributions significantly impact the student experience by providing essential support services throughout the school environment. Furthermore, non-academic staff play a vital role beyond their direct responsibilities, they contribute indirectly to core university functions like research, teaching, and community service by providing essential support and fostering a conducive environment for these activities to flourish. Their roles in the administration and management of the College of Education cannot be overstated, because they function in all the units. Ultimately, the smooth operation and success of the College of Education rely heavily on the diverse expertise and dedication of both academic and non-academic staff.

However, the rapidly changing social landscape places ever-increasing demands on educational

institutions. The focus has shifted from simply expanding access to education (quantity) to ensuring its quality. Effective educational management plays a critical role in this transition by optimizing institutional operations. Also, in the current information age, educational institutions are expected to play a crucial role as the engine for knowledge generation and learning environments. In this regard, digital technologies become a vital means to facilitate this task. Digital technologies have become an essential part of education and have become one of the most effective factors in school improvement not only for teaching and learning but also for administrative use.

Ukanwa and Chiemeka (2021) stressed that digital technologies can be effectively utilized in school administration to manage human resources, physical resources, and financial resources. This shift towards digital technologies has the potential to significantly improve accountability, transparency, and participation among all stakeholders involved in the school system. In the opinion of Thompson and Anachuna (2019), modernizing administrative processes is crucial for addressing the increasing complexity faced by many institutions. Colleges of Education equally have a vital responsibility of implementing educational policies and achieving educational goals. This success hinges on effective school administration.

Researchers such as Okon, Ekaette, & Ameh (2015), posited that the expanding complexity of CoE in Nigeria has correspondingly increased the administrative demands, particularly in the current digital technologies era. By implication, the digitalization of these systems is recommended to streamline administrative and managerial processes within CoE. To navigate these escalating managerial and administrative challenges effectively, the implementation of a Management Information System (MIS) is paramount. Such a system would facilitate organized data processing, streamline information storage and retrieval and encompass other pertinent functionalities. Management Information Systems (MIS) are designed to empower managers through organized and efficient methods of information collection, processing, storage, and retrieval. MIS can be broadly defined as technological frameworks designed to provide decision-makers with critical information for organizational efficiency. It leverages modern approaches and computerized applications to input, process, store, and retrieve organizational data, ultimately enhancing administrative effectiveness. Madiha (2013) averred that MIS finds significant application within the educational sector, supporting a multitude of administrative tasks. These include attendance monitoring, assessment record management, report generation, financial oversight, and the allocation of resources and personnel. Suchi (2017) emphasizes the tailored nature of school-based MIS, highlighting the need for systems that align with the school's specific structure, management tasks, instructional processes, and unique needs.

However, Studies, including those by Ezugoh, Adesina, and Yakubu (2020), highlight significant challenges faced by administrative operations within Colleges of Education in Nigeria. These challenges adversely impact key administrative functions such as processing student results, managing admissions, identifying payment defaulters, and handling financial records. Delays and inefficiencies in these areas may be linked to the limited or suboptimal use of Management Information Systems (MIS) within these institutions. Despite the integration of MIS into administrative processes, there are notable gaps in its potential utilization. Challenges of administrative functions in colleges of education against Management Information Systems (MIS) include the integration of technology with existing processes, resistance to change by staff, inadequate training for users, and challenges in data management and security. These issues can hinder the effective utilization of MIS for tasks such as personnel management, resource allocation, and effective decision-making.

While a significant portion of non-academic staff have access to and use the MIS for essential tasks such as record-keeping and data management, there is considerable room for broader

adoption and optimization of the system. This disparity suggests that, although there is a high level of satisfaction with the MIS and its training programs, the system's full potential is not yet realized.

The central problem is the gap between the current effective use of MIS and the opportunity for its expanded utilization. While the MIS is viewed as reliable and stable, and training has successfully improved staff competency, barriers to wider adoption and effective use remain. Ensuring that the MIS supports an inclusive and equitable administrative environment is crucial, as is addressing the need for continuous improvement and strategic planning. This study aims to investigate how MIS can enhance administrative effectiveness and streamline operations in the Colleges of Education in Ilorin, Kwara State, Nigeria, thereby contributing to improved institutional performance and operational efficiency.

Objective of the Study

The main objective of this study was to examine the influence of management information system usage on the administrative effectiveness of Colleges of Education in the Ilorin metropolis, Kwara State, Nigeria. The specific purpose of this study was to:

1. Determine the level of access to MIS tools by non-academic staff in Colleges of Education in the Ilorin metropolis;
2. examine the use of MIS for administrative functions among the non-academic staff of Colleges of Education in the Ilorin metropolis;
3. examine the relationship between MIS usage and administrative effectiveness of Colleges of Education in the Ilorin metropolis; and
4. determine the gender difference in the use of MIS among non-academic staff of Colleges of Education in the Ilorin metropolis.

Research Questions

To effectively attain the objectives of this study, the following questions were raised to guide this study;

1. Do non-academic staff have access to MIStools in Colleges of Education in the Ilorin metropolis?
2. What is the extent of the use of MIS for administrative functions among non-academic staff of Colleges of Education in the Ilorin metropolis?

Research Hypothesis

For this study, the following null hypotheses were generated to guide the study and tested at a 0.05 level of significance.

HO_1: There is no significant relationship between the use of management information systems and administrative effectiveness among non-academic staff of Colleges of Education in the Ilorin metropolis, Kwara State; and

HO_2: There is no gender difference in the use of management information systems for administrative functions among non-academic staff of Colleges of Education in Ilorin metropolis, Kwara State.

Methodology

The study focused on the examination of the relationship between management information systems and the administrative effectiveness of Colleges of Education in the Ilorin metropolis, Kwara State. The sub-variables investigated in this study include access to MIS, use of MIS, and gender difference. The study was limited to the non-academic staff members in government-owned Colleges of Education Ilorin metropolis in Kwara State, Nigeria. This is a result of the complexity and uniformity nature of the government-owned institutions. The study employed a

quantitative research method of a survey type. The study adopted a multistage sampling technique to select non-academic staff from the sampled Colleges of Education. A researcher-designed questionnaire titled "Management Information System Effectiveness Questionnaire" (MISEQ) was employed to gather relevant data for this study. Both the descriptive statistics of the frequency distribution and mean were employed to answer the research questions, while, inferential statistics of Pearson product-moment correlation coefficient and *t*-test were used to test the formulated hypotheses at 0.05 level of significance.

The population of this study comprised all the non-academic staff in the Colleges of Education in Kwara State. The target population included government-owned Colleges of Education in the Ilorin metropolis. At the time of conducting this study, there were 449 and 163 non-academic staff at the Kwara State College of Education, Ilorin, and Nigerian Army School of Education (NASE) Ilorin respectively. This makes a total of 612 (Institutions' Academic Planning Unit records, 2024) population for the study. Multistage sampling techniques were employed to select 341 respondents for the study. This decision is guided through the use of Research Advisor (2006) with a confidence of 99.0% and 0.05 margin of error.

The instrument used to elicit data is a researcher-designed questionnaire titled "Management Information System and Administrative Effectiveness Questionnaire (MISAEQ)". The MISAEQ consists of items to determine the relationship between management information system usage and administrative effectiveness. The MISAEQ consists of 3 sections (A, B, and C). Section A dealt with the demographic data such as academic qualification and gender of the respondents, as well as the respondent's access to a management information system; Section B consists of items to examine the use of management information systems among the non-academic staff of Colleges of Education in Ilorin, Kwara State. The response scale for this section was multimodal, while, Section C will focus on the influence of management information systems on administrative effectiveness, and was rated on a multimodal scale. The instrument was validated and a pilot test using Cronbach alpha at 0.05 level of significance and 0.87 was obtained. This shows that the instrument is reliable.

Data Analysis and Discussion of Findings

The data collected were analysed using descriptive and inferential statistics with the use of Statistical Package for Social Sciences (SPSS) software version 27.0. Frequency distribution of percentage was used to answer the research questions while Pearson product-moment correlation coefficient and *t*-test were used to test the formulated hypothesis at 0.05 level of significance.

Analysis of Research Questions

Research Question One: Do non-academic staff have access to the management information system in Colleges of Education in Ilorin, Kwara State?

Table 1

Descriptive Analysis of the MIS Tools Access by Non-academic Staff

S/N	Access to MIS	Yes		No	
		Freq.	(%)	Freq.	(%)
1.	Do you have access to management information system tools to aid your work at the College?	277	81	64	19
	Average Percentage	**81%**		**19%**	

Table 1 shows the level of access to MIS among non-academic staff in Colleges of Education in Ilorin. The table revealed that 81% of the participants claimed they had access to MIS to aid their work. Thus, non-academic staff in Colleges of Education Ilorin are aware and have access to MIS.

Research Question Two: What is the extent of the use of the management information system among non-academic staff of Colleges of Education in Ilorin, Kwara State?

Table 2
Extent of Use of MIS

S/N	Items	Freq.	(%)	Freq.	(%)	Freq.	(%)	Freq.	(%)	Freq.	(%)
1.	How frequently do you use the MIS in your daily tasks?	Daily 114	37.5	Weekly 98	32.2	Monthly 43	14.1	Occasionally 36	11.8	Never 13	4.3
2.	To what extent does the MIS support your administrative duties (e.g., record keeping, data management)?	Extremely Well 128	42.1	Well 86	28.3	Moderately 49	16.1	Poorly 34	11.2	Not at All 7	2.3
3.	How would you rate the ease of access to the MIS for performing your tasks?	Very Easy 105	34.5	Easy 59	19.4	Neutral 92	30.3	Difficult 13	4.3	Very Difficult 0	0.0
4.	How effective is the MIS in providing the information you need for your job?	Very Effective 115	37.8	Effective 43	14.1	Neutral 97	31.9	Ineffective 36	11.8	Very Ineffective 13	4.3
5.	How well does the MIS integrate with other systems or tools you use?	Very Well 131	43.1	Well 49	16.1	Neutral 46	15.1	Poorly 43	14.1	Very Poorly 35	11.5
6.	How would you rate the reliability of the MIS in terms of uptime and stability?	Very Reliable 109	35.9	Reliable 59	19.4	Neutral 101	33.2	Unreliable 30	9.9	Very Unreliable 5	1.6
7.	How satisfied are you with the training provided for using the MIS?	Very Satisfied 196	64.5	Satisfied 61	20.1	Neutral 40	13.2	Dissatisfied 2	0.7	Very Dissatisfied 5	1.6
8.	How responsive is the technical support team when you encounter issues with the MIS?	Very Responsive 82	27.0	Responsive 78	25.7	Neutral 64	21.1	Unresponsive 48	15.8	Very Unresponsive 32	10.5
9.	How well does the MIS help you in managing and organizing administrative tasks (e.g., scheduling, resource allocation)	Extremely Well 205	67.4	Well 69	22.7	Moderately 22	7.2	Poorly 8	2.63	Not at All 0	0.0
10	Are there opportunities for improvements to make the MIS better support your work?	Very Well 115	37.8	Well 43	14.1	Neutral 97	31.9	Poorly 36	11.8	Very Poorly 13	4.3
	Average Percentage	**42.8%**		**21.3%**		**22.3%**		**9.4%**		**4.3%**	

Table 2 presents an analysis of the utilization of Management Information Systems (MIS) among non-academic staff in Colleges of Education in Ilorin, Kwara State. The data indicates that a significant proportion of respondents (37.5%) engage with the MIS frequently in their daily operations. Additionally, 42.1% of respondents utilize the MIS to assist with various administrative responsibilities, including record keeping and data management.

The findings also reveal a high level of satisfaction among the non-academic staff regarding the training received for using the MIS, with 64.5% expressing extreme satisfaction. This training has

notably enhanced their ability to manage and organize administrative tasks such as scheduling and resource allocation. Moreover, the MIS is rated as highly reliable and stable in terms of uptime and performance. Overall, the data suggests that an average of 42.8% of the non-academic staff effectively use the MIS, underscoring its significant role in supporting administrative functions within the Colleges of Education in Ilorin.

Results of Hypotheses Tested in the Study Hypothesis One

H_{O1}: There is no significant relationship between the use of management information systems among non-academic staff in Colleges of Education and administrative effectiveness in the Ilorin metropolis, Kwara State.

Table 3

Corelation Analysis between usage of MIS and Administrative effectiveness in Colleges of Education

Gender	N	X	SD	df	*r-score*	p-value	Remark
MIS Usage	341	3.64	0.65	302	0.73	0.01	Rejected
Effective Administration	341	2.78	0.48				

From Table 4, it can be deduced that there was a significant relationship between the use of management information systems among the non-academic staff of Colleges of Education in Ilorin and effective administration, in Kwara State. This is reflected in the findings of the hypothesis tested df (302), r= 0.73, p>0.05. Thus, the hypothesis which states that "there is no significant relationship between the use of management information system and effective administration in Colleges of Education in Ilorin, Kwara State" is rejected.

Hypothesis Two

HO_2: There is no gender difference in the use of management information systems for administrative functions among the non-academic staff of Colleges of Education in the Ilorin metropolis, Kwara State.

Table 4

***t*-test Analysis of Gender Difference in the Use of MIS Tools**

Gender	N	X	SD	df	*t*	Sig. (2-tailed)	Remark
Female	227	3.88	.98	302	.398	.691	Accepted
Male	77	3.83	.91				

From Table 4, it can be deduced that there was no significant gender difference in the use of management information systems among non-academic staff of Colleges of Education in Ilorin, Kwara State. This is reflected in the findings of the hypothesis tested df (302), t=.398, p>0.05. Thus, the hypothesis states that "there is no significant difference in the use of management information system among non-academic staff of Colleges of Education in Ilorin, Kwara State" is accepted.

Summary of Findings

The summary of the findings from the research questions and research hypotheses are presented as follows:

1. Non-academic staff in Colleges of Education Ilorin are aware and have access to MIS;
2. non-academic staff effectively use the MIS, underscoring its significant role in supporting administrative functions within the Colleges of Education in Ilorin;
3. there was a significant significance relationship between the use of management information systems and effective administration in Colleges of Education in Ilorin, Kwara State: and
4. there is no significant difference in the use of management information systems among non-academic staff of Colleges of Education in Ilorin, Kwara State.

Conclusion

The study provides a comprehensive description of the role and impact of MIS on administrative functions within the Colleges of Education in Ilorin. The findings indicate that the MIS is a pivotal tool in enhancing administrative effectiveness, with significant implications for time management, task efficiency, and decision-making processes. First, the study reveals that non-academic staff have substantial access to the MIS, reflecting a high level of awareness and integration of the system into their daily operations. This extensive access highlights the Colleges' commitment to leveraging technology to streamline administrative processes and improve overall efficiency.

The analysis further shows that frequent engagement with the MIS is prevalent among non-academic staff, underscoring its importance in managing routine administrative tasks such as record-keeping and data management. The high level of satisfaction with MIS training and the system's reliability emphasizes its critical role in enhancing staff competency and ensuring smooth operational performance. Additionally, the MIS is recognized for its positive impact on administrative effectiveness, contributing to improved coordination, collaboration, and efficiency within the Colleges. Its ability to support timely decision-making, manage data security, and enhance overall operational performance underscores its value as a key administrative tool. Based on the findings of this study, the following implications can be drawn. The study reveals that MIS significantly enhances administrative efficiency within the Colleges of Education in Ilorin, suggesting that continued investment and optimization of these systems are crucial. By streamlining administrative processes and reducing staff workload, MIS supports overall operational effectiveness.

Recommendations

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

1. To maintain and improve the high level of satisfaction with MIS training, institutions should develop and implement comprehensive training programs. This should include regular workshops, refresher courses, and updates on new features and best practices. Tailoring training to meet the specific needs of different user groups and providing ongoing support will ensure that all staff can effectively utilize the MIS.
2. While a significant portion of staff currently use the MIS effectively, there is potential for broader adoption. Institutions should identify barriers to wider use and address them through targeted initiatives. This could involve increased awareness campaigns, one-on-one support sessions, or incentives for those who embrace the system. Encouraging greater engagement with the MIS will maximize its benefits and enhance overall administrative efficiency.
3. Given the positive feedback on the MIS's reliability and performance, it is crucial to ensure these standards are maintained. Institutions should regularly review and update the system to address any potential issues and improve performance. Implementing robust monitoring and support mechanisms will help to prevent disruptions and ensure the system remains stable and dependable.
4. The MIS's capacity to generate timely reports and manage data security is a valuable asset. Institutions should leverage these capabilities to support strategic decision-making and improve administrative oversight. Regularly analyzing the data generated by the MIS can provide insights for optimizing processes, enhancing operational efficiency, and making informed decisions.
5. The study's findings highlight equitable access to the MIS across genders. Institutions should continue to promote inclusivity by ensuring that all staff members have equal opportunities to access and benefit from the MIS. This approach supports a diverse and balanced administrative environment, enhancing overall staff engagement and productivity.
6. Institutions should implement a system for ongoing evaluation of the MIS to identify areas for improvement. Gathering regular feedback from users and analyzing system performance can

help in making necessary adjustments and updates. Continuous improvement will ensure that the MIS remains effective in meeting the evolving needs of the administrative staff.

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EFFECT OF PHONICS STRATEGY ON THE READING PERFORMANCE OF PRIMARY SCHOOL PUPILS IN ILORIN METROPOLIS

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Abstract
This paper investigates the effects of phonics strategy on the reading performance of primary school pupils in Ilorin Metropolis. The poor reading performance of primary school pupils necessitated this study. Phonics is a strategy used in teaching the pupils word recognition and consequently reading in primary schools. Two hypotheses were formulated to guide the study. Simple Random sampling technique was used to select 114 primary pupils in Ilorin West Local Government as subjects for the study. Word recognition performance test was developed, validated, and used for data collection. The study revealed that the experimental group performed better in reading than the control group. Phonics reading strategy favoured male pupils more than their female counterparts. Based on these findings, it was recommended that the phonics strategy should be employed in primary schools to enhance the reading abilities of the pupils. Teachers of primary school pupils should be given special training on the use of phonics to enhance the teaching and learning of reading.

Keywords: phonics, strategy, effects, and performance.

Introduction
Primary Education is the first education level. It is the education given to children between the ages of six and eleven. This level of education has among its goals the inculcation of permanent literacy and numeracy and the ability to communicate effectively (Federal Republic of Nigeria, 2004). At this level of education, the medium of instruction is the language of the immediate environment (National Language Policy (NLP), 2023). Ogbuchi, (2003) sees language as the expression of ideas using speech sounds combined into sentences and the combination leading to ideas and thoughts. She went on to describe it as a purely human and non-instinctive method of communicating ideas, emotions, and desires using a system of voluntarily produced symbols. Trager (2001) describes language as a system of arbitrary vocal symbols using which a social group cooperates. Language can, therefore, be defined as a special tool used in passing information between two or more persons. Nigeria appreciates the importance of language as a means of promoting social interaction and national unity as well as preserving cultures (FRN, 2004). This is why it is placed first in the list of the goals and the curriculum of primary education respectively. Language is the most vital element for all forms of learning. It is the medium for giving, receiving, hiding, and distorting information (Ogbuchi 2003). Language is therefore a social tool used by people to carry out affairs of the society.

It is in recognition of the above facts that the Federal Government of Nigeria, in the National Policy of Education (FRN, 2014) recommends that the mother tongue or the first language (L1) should be the language of instruction at the pre-primary level while English (L2) becomes the language of instructions from the junior primary school. The teaching of English as a subject at

the primary school level has adverse effects on the teaching and learning situation. Children are now required to speak, read and write, study, and think in the English language. The implication is that for the Nigerian primary school child, vocabulary knowledge and word recognition are problematic. These are important factors in reading development because if children cannot recognize written words, they will not be able to extract meaning from them. As second language readers, Nigerian primary school learners go through a complex process involving two languages, one of which is usually foreign to their natural speech habits, home background, and culture (Alyousef, 2006). Reading is one form of communication that must be developed in children right from their early years. It is an activity that every child engages in, from the day the child commences the educational career at the pre-primary level then throughout the long years at primary, secondary, and tertiary levels of education. Alyousef (2006) simply defined reading as a process of obtaining information from a text. It is a complex process that involves interaction or negotiation between the reader and the text, leading to fluency. Vacca and Vacca (2002), also see reading as a conversation, a give-and-take exchange between the reader and the text. In this context, reading is a meaning-searching and meaning-getting activity that involves the reader and the text. In this context, reading can be defined as the ability of the reader to get meaning from the author's message in the text.

In the present information age children are expected to read text to learn. All tests and examinations require their ability to read examination questions. Academic performance of any kind is therefore closely tied to children's reading ability. It is given this fact that Oyetunde (1999) in Ezema (2002,) contends as follows: "Can you imagine what life is for school children who can't read? I am sure you cannot bear to think of it. I can't". The teaching of reading in primary schools and the performance of pupils in public examinations have reportedly been very poor. Thus, pupils' performance in primary school examinations in Ilorin West Local Government Area of Kwara State of 2010-2018 revealed that the level of performance pass in English language is average and this could be attributed to pupils reading at frustration level.

The findings of United Nations International Children's Education (UNICEF) funds reading projects in public primary schools in the 10 UNICEF field states of Anambra, Enugu, Benue, Akwa Ibom, Cross River, Rivers states, Bayelsa, Ebonyi, Imo, and Abia states. It was revealed from the project that only a few children can read fluently and respond to their reading and that primary six pupils can neither decode nor comprehend what they read. In the like manner, research findings have revealed that there is a serious problem with reading at all levels of education in Nigeria (Idogo, 2005, Alegbeleye, 2004). These researchers in their respective findings further revealed that a large number of elementary school pupils lack literacy skills especially, reading which they require in their formal and non-formal learning situations. Some of the pupils find it difficult to read and understand and some of them also show a carefree attitude to reading (Adeniyi, 2010). Scholars like Ajayi, (2004) and Idogo, (2005) have traced the problem of reading skills to the weak foundation that pupils have in reading at the primary level. Researchers such as Kolawole, Adepoju and Adelore (2000) and Adegbite (1999) identified teachers' choice of method as one of the main factors of poor performance in reading.

Most teachers, unfortunately, do not understand the difference between teaching English and teaching reading. The Universal Basic Education Commission (UBEC) (2010) describes spelling methods as an approach by which children are taught to read the words by first spelling them. First, they are taught to recognize individual letters of the alphabet, master them, and even sing them out to recall all 26 letters individually. Thereafter they are taught to build up words by spelling them. This method is still widely used in many Nigerian schools. Some of the weaknesses associated with this method are that it makes children stick to the spelling of all words in their effort to read, even much later in life. When this is an established practice, children are essentially slowed down.

Secondly, the whole language method introduces connected words and sentences to learners. Children are not taught to first recognize individual letters, rather words and short sentences are presented as language units and the pupils are led to say what they mean. They are encouraged to memorize words as whole units, for instance, the word "CAT" could be presented perhaps with a picture of the animal, and children are told to pronounce the word. They are never led to do the spelling. After successfully calling the name, they are led to practice writing the word by imitating what they see on the chalkboard or cardboard. Thereafter whole sentences follow. For instance, they see the picture of a cat running and are asked what they can see the cat doing. Gradually they are led to read "THE CAT IS RUNNING" the caption below the picture. This method helps children to learn how to read "sight words" which are words that do not reflect the sounds of what they stand for.

Phonics strategy focuses on the individual parts, or letters, and their sounds that combine to form the whole word. In other words, the part-to-whole processing of text is established. It is the process of sounding out words to begin to read and understand new words, e.g children are taught to take a single syllable word such as 'cat', apart from its three letters, pronounce a phoneme for each letter in turn /k/, /a/,/t/, and blend the phonemes to form a word Ajisafe,(2021). Pupil's characteristics such as gender have been linked to early measures of language and learning. Gender has been used to describe the behaviour expected of an individual based on being born a male or female (Mbotoand Bassey 2004). Girls tend to have a slight advantage over boys in the early stages of vocabulary development (Tamis Le Modaand Rodriguez, 2008). Also, Muhammed, (2015) posits that some gender differences in second language learning are socio-culturally bound because it is more acceptable in some cultures and sub-cultures than in others for boys and girls to communicate freely and casually in social situations. Contrarily, Okele (1999) posited that some socio-cultural impediments such as role stereotyping and the belief that reading is a male gender pose obstacles to female pupils' participation in reading. On the other hand, Gambell and Hunter (2000) claim that boys do less well than girls in reading, almost regardless of the criteria used to assess competency. Boys predominantly held negative attitudes towards reading stating that reading is boring and considering it a feminine activity (Clark and Akerman, 2006). Phonics strategy focuses on the individual parts, or letters and their sounds that combine to form the whole word, in other words, the part-to-whole processing of text. It is the process of sounding out words to begin to read and understand new words, e.g. Children are taught to take a single-syllable word such as 'cat apart from its three letters and pronounce a phoneme for each letter in turn /k/, /ae/, /t/ and blend the phoneme together to form a word.

Methodology

This is a quasi-experimental study with a pre-test, and post-test group design. The study adopted a factorial design of 2*2*1 to test the null hypotheses. The first two designs represent the phonics and the conventional strategies, that is the experimental and the control groups, which are the independent variables. The other two designs the gender variable, which is the moderator variable, while the last design represents the Word Recognition Performance Test (WRPT) which is the dependent variable. Specifically, the design was adopted because the experiment was carried out in the intact classes. Intact classes were used to avoid disruption of normal classes. Thus, there was no randomization of pupils into treatment and control groups. The research design has to be so since the treatment group cannot be adequately controlled. The design helped to determine the effects of Phonics and conventional reading strategy on pupils' performance in word recognition. A simple random technique was adopted in the selection of the schools that were involved in the data collection.

The target population for the study consisted of primary one pupils within the Ilorin metropolis numbering Four Thousand Seven Hundred and Fifty 4750 and it comprise Two Thousand Three Hundred and Fifty 2350 female pupils and 2400 male pupils (Source: State Universal Basic

Education). A total of 144 primary pupils were randomly sampled from four primary schools within the Ilorin metropolis comprising four different Local Government Areas using the Multi-phase sampling technique which served as experimental and control schools. Out of this sample, 82 belonged to the experimental group with 45 female and 37 male.

The instrument named Word Recognition Performance Test (WRAT) was developed by the researcher and used for data collection. The instrument contains the name, class, and sex of pupils and eight items with a total number of fifty questions which were generated for pupils to answer to elicit information on word recognition. The instrument was used as a pre-test to assess pupils' entry behaviour. The same instrument was used at the end of instruction to measure the performance gain of the pupils as a consequence of using phonic-based instruction in teaching word recognition. Simple random techniques were employed in the selection of schools and pupils that were involved in data collection.

The instrument was given to four experts: one in English language, one in measurement and evaluation, one in childhood education and one experienced primary school teacher for face and content validation. A try-out test was carried out to ascertain the reliability of the instrument. The instrument was administered to twenty primary one pupils in a primary school outside the sample of the study. To establish the internal consistency of the word recognition performance test, scores generated from the 20 pupils were applied to K –R 20 (Kuder Richardson) formula. The internal consistency coefficient of 0.77 was obtained. The formula was considered appropriate because the instrument was dichotomously scored. The coefficient of internal consistency was established because the researcher wanted to find out how internally consistent the items would be to the objectives of the study.
Analysis of covariance (ANCOVA) was used for analyzing data with respect to the hypothesis at a 0.05 level of significance,

Hypothesis 1
There is no significant difference in the post-test mean scores in the Performance of pupils taught using Phonics and conventional methods for word recognition.

Table 1.1

Source	Sum squares of	DF	Squares	F	Sig.
Corrected Model	11860.455	2	2965.114	554.841	.000
Intercept	2686.001	1	2686.001	502.613	.000
Pre-Test	17.395	1	17.395	3.255	.074
Groups	9925.597	1	9925.597	1857.000	.000
Error	598.536	139	5.344		
Total	132203.000	144			
Corrected Total	12458.991	143			

Analysis of Covariance of scores of Experimental and Control Groups in Word Recognition Mean.
Significant at sig of F<.05
The data presented in Table 1 shows F- calculated values for the test of significance between the

mean scores of experimental and control groups in word recognition. The f-value for groups is 1857.000 with a significance of F at .000, which is less than .05. The null- hypothesis is therefore rejected at a .05 level of significance. With this result, there is a significant difference in the post-test mean scores in the performance of pupils taught using the Phonic strategy for word recognition.

Hypothesis 2

There is no significant difference in the post-test mean performance scores of pupils taught word recognition using Phonics and Conventional methods based on gender.

Table 1.2 Analysis of Covariance of Scores of Male and Female Students Taught Using Phonics and Syllabic.

Source	Sum Squares of	Df	Mean Square	F	Sig.
Corrected Model	2861.202	2	715.300	212.434	.000
Intercept	226.350	1	226.350	67.223	.000
Pre-Test	.103	1	.103	.031	.861
Group	2367.808	1	2357.808	703.204	.000
Gender	28.326	1	28.326	8.412	.004
Error	377.123	77	3.367		
Total	2267689.000	82			
Corrected Total	3238.325	81			

Significant at sig of F< .05

The data presented in Table 2 shows F- calculated values for the test of significance between the mean scores of male and female-taught word recognition using Phonics and Syllabic. The F-value for gender is 8.412 with a significance of F at .004, which is less than .05. The null hypothesis is therefore rejected at 0.05 level of significance. With this result, there is a significant gender difference in the post-test mean Performance scores of pupils taught word recognition using Phonics and conventional me.

Discussion

The findings of hypothesis 1 confirmed that a significant difference existed between the mean Performance scores of experimental and control groups in the post-test. This is an indication that the Phonics reading strategy has a positive effect on pupils" academic Performance in word recognition than the whole language. This means that the phonic reading strategy is an effective teaching strategy. It improves the reading skills of primary school children. It encourages children to begin reading in auditory training, that is training the ears to recognize the sounds of the letter and associating these sounds and letters with the shapes of the letters in written form (Tompkins, 2003).

The finding is in agreement with the finding of Dimeff, and Fox (1989), in Ajisafe, (2021), In their studies they found that adapting Phonics and syllabic reading strategies greatly resulted in higher students" performance and greater productivity, higher cognitive gains, lower levels of subjects distress, and higher course satisfaction. The finding is also in agreement with the findings of Resnick (2005) who found out that Phonics and syllabic reading strategy teaches children to sound out new words. It enables them to learn what a letter stands for and then learn to associate the sound and the letter with specific words. The finding is in line with the findings of Moat (2000) and Tompskin (2003) that the Phonics and syllabic method of teaching enable young learners to master the skills of reading. Vacca (1998) explained that Phonics and syllabic strategies are most appropriate for pupils in primary schools when it comes to language development.

The findings are also in agreement with Komolafe and Yara (2010), and Akinbode and Komolafe

(2010) who concluded from their investigation that teaching students using sentence combining instructional strategy and explicitly grammar instructional strategy performed better than those taught using lecture method or other traditional teaching methods. Involving students in an active learning environment where they can participate actively in the learning process with the opportunity to interact freely with the teachers, converse with peers present, and defend ideas and questions increases their self-confidence and self-reliance. This consequently improves their learning and performance. Jarvis (1998) and Jonaasan (1996) in their views affirmed that students learn best when they are actively involved in the learning process and that regardless of the subject matter, students working in groups tend to learn more of what is taught can be retained longer than when the same content is presented in another format.

The findings of hypothesis 2 show that there is a significant gender difference in the post-test mean Performance scores of pupils taught word recognition using Phonics and syllabic. This finding is in agreement with the opinions of TamisMonda and Roddriguez (2008) that girls tend to have a slight advantage over boys in the early stages of vocabulary development. Contrarily, Okeke (1999) posited that some socio-cultural impediments such as role stereotyping and the belief that reading is a male-gender subject pose obstacles to female pupils'" Participation in reading. The findings are also in line with the opinions of Gambell and Hunter (2000) that boys do less well than girls in reading, almost regardless of the criteria used to assess competency. Clark and Akerman (2006) also found out from their study that boys predominantly held negative attitudes towards reading stating that reading is a boring and feminine activity. That shows that there was a significant difference between the mean Performance scores of males and females in the post-test. This is an indication that the phonic reading strategy has a positive effect on female and male pupils.

The summary of the findings of this paper about the research hypotheses are as follows:
Pupils in the experimental group obtained a higher mean score than their counterparts in the control group. That is to say that the null hypothesis of no significant difference in the Performance of pupils taught word recognition using Phonics and syllabic and those taught using conventional methods is rejected.
In the experimental group, there was a significant difference in the mean scores of male and female pupils. This difference statistically favoured the male pupils over the female pupils in phonics strategy.

Conclusion and Recommendations
Based on the findings of this study, the following conclusions were made: Students learn faster and master skills better when conventional teaching methods are used for instruction. The adoption of the Phonics and syllabic reading strategy in conjunction with other teaching methods will greatly improve the academic performance of pupils in reading using word recognition. The pupils taught word recognition using Phonics and syllabic reading strategy achieved significantly higher reading performance than those who were not taught using Phonics and syllabic. Male pupils taught word recognition using Phonic and Syllabic reading strategies achieved significantly higher than their female counterparts. Also, Phonics and Syllabic reading strategies favoured pupils in reading performance through word recognition.

11. Primary school teachers in Kwara State should adopt the use of the Phonics and syllabic reading strategy to teach word recognition.
12. Qualified teachers of the English language should be employed by the government to teach reading to pupils in primary school.
13. Curriculum developers should recommend the use of Phonics and syllabic reading strategies for teaching word recognition to pupils in primary schools.
14. Workshops and seminars should be organized by the stakeholders in the education sector and related government agencies to train school teachers on the best ways to use Phonics and

syllabic reading strategies for teaching their pupils.

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TEACHERS' PROFESSIONAL IMPORT OF METACOGNITIVE THEORETICAL PROCESSES TO THE TEACHING OF READING AT THE NIGERIAN PRE-PRIMARY SCHOOL LEVEL

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Abstract
This paper gives a critical assessment of the relevance of meta-cognitive theory to the teaching and learning of reading in Nigeria's pre-primary school educational level. This is done to inject new strategies capable of revitalizing and redefining the teaching and learning of reading in Nigeria's pre-primary school level of education. The development of the pre-primary education trend across the globe was replicated before the attainment of independence in Nigeria. This is a move to look inward at how the country can lay a very good foundation for Nigeria's education. The inclusion of language skills in the pre-primary education program is to create strength between the goals of education at that level and the actualization processes of attaining the goals of the education programme at that level. The meta-cognitive theory revolves around processes capable of enhancing teachers'/learners' ability to reflect on their cognitive processes and the awareness of the control that they possess over their thinking and learning processes while reading and solving problems. The concern of meta-cognitive theory is how teachers/learners can employ meta-cognition knowledge to plan, monitor, and evaluate their reading comprehension. The trust of this paper, therefore, is to assess the possible impacts of Meta-cognitive theories on pre-primary pupils/teachers' reading comprehension to improve their reading performance.

Keywords: Language, Pre-primary school, Teaching, Learning, Reading, Strategy, Cognitive, Meta-cognitive

Introduction
Language is a tool employed for communication in every facet of human endeavours to convey ideas, thoughts, and intentions. Language plays crucial and essential functions in learning and gaining educational experience among others. Borode (2016) describes language as a means of identification, categorisation, perception, thinking, and transmitting knowledge across time and space. Language can thus be described as the structured way in which words are put together successfully by putting one's conception or reasoning across other people. Language can further be described as an organisation of symbols that permits people to communicate or interact with one another. These symbols could be in vocal or written form, gesture, and body language. Language can also be construed concerning the four basic language skills: listening, speaking, reading, and writing. Pre-primary school level of education also known as Nursery school or Crèche is an educational establishment or learning space designatedd to offer early childhood

education to children between the ages of six weeks and five years before they begin compulsory education at the primary school level. This level of education may be publicly or privately established/operated as the case may be and be subsidized from public funds to reduce the financial strength of the parents. This level of education is named differently by different countries of the world. It is an educational programme prepared for children between the ages of six weeks and six years enrolled to cater for childcare services.

The pre-primary educational programme of this nature is very important and beneficial for any child attending Nursery school because it gives them a head start through social interaction and exposes them to what the whole world looks like (Borode, 2016). However, through Meta-cognitive, Cognitive, Psychological, and Physical Development based learning strategies, a child at the pre-primary level will be able to learn about his or her immediate environment, and to a greater extent, the child will improve linguistically and be able to verbally communicate with others without stress. Children who attend pre-primary school also learn how the world around them works through play and interpersonal communication. Lawal and Ahman (2022) affirm that the first three years of a child's life are very critical for laying the foundation for language acquisition, socialization, and attitude to learning. During the earlier years of the child (3 – 5 years), children at these stages are capable of absorbing a lot of information because their brain during these earlier years grows most rapidly. Teachers with good quality teaching training/experiences developmentally improve teaching/learning outcomes for the children. The pre-primary school programme is designed to help the children develop rapidly in the following areas of human endeavours: Communication (including sign language), Understanding the world around them, Creative and Aesthetic Development, Mathematics Development and Awareness, Physical Development, Physical Health Development, Play/Teamwork Development, Self-help Skills Development, Social Skills Development, Scientific Thinking, and Literacy Development.

Reading, as one of the four basic language skills, is essential for learning and very crucial. Reading, has, therefore, been given considerable attention by many scholars and researchers. According to Onukaogu (2003), Gutenberg's invention of printing during the 16th century placed a revolution on the written text. Thereafter, modern technology has aided printing and placed the written text in a very strategic position in human advancement. Consequently, every human being is at this moment in time influenced by the written text (i.e. through reading). Reading is a requisite and an indispensable skill in the teaching and learning processes.

Reading is a skill that is required by both teachers and pupils, regardless of the stage of their teaching and learning, and further affirmed that it is how academic excellence can be attained since no pupil can survive in the academic world without the ability to read(Lawal, 2019). Reading requires full participation of the teacher and pupil as members of modern society and adds quality to life, provides access to culture and cultural heritage, empowers the readers, and emancipates and unites people together.

Ofodu (2009) views reading as one of the most fundamental media for acquiring and promoting knowledge at all levels of education. Reading is a language skill that is employed in facilitating the acquisition and development of literacy needed for effective communication in different contexts and fields and at all levels of education. More so, reading is a pleasurable venture and a source of information which provides a means of integrating and widening one's language development. Reading is very important in the life of every child. It is attested to the globe and beyond a reasonable doubt; reading shows its influence in improving pupils' performance in academics later in life. Ahman and Lawal, (2023) opine that the doors of the world are open to people who can read and open their views to different parts of the world. Via reading, people can know other people, places, cultures, and events different or similar to their background and personal experiences (Lawal, 2019). People, thus, become informed and open to ideas, beliefs,

activities, and ways of life around the world which may be divergent from theirs through reading. Through reading, therefore, people gain access to discoveries, new interests, and preferences; additionally, reading guides people in whatever they are involved in. Reading is indispensable to people in the promotion of their culture and civilization.

Dwelling more on the importance of reading, Lawal, (2019) deduced that reading allows us to familiarise ourselves with the experiences of our ancestors and presents us with the chance to learn from the happenings of those nations that are technologically based and upfront. Through reading, we can procure new scientific skills and attitudes that will equip us to move our country forward and develop such repute and confidence in commerce, science, education, and technology that are evident in developed nations. It is often said that a reading nation is a winning, progressing, thriving, and living nation (Lawal, 2019). Therefore, as a nation that intends to develop, there is a need to promote reading right from the pre-primary school level to encourage the majority of our people to read and have fulfilled lives. It is very important for every country and nation that craves advancement and development, to ensure that reading skills are developed through a system of education that caters to both the learners and the teachers at all levels to reflect the changing needs of the nation through reading.

Today, a great deal of learning depends on reading as an essential prerequisite to literacy because, it's the bedrock of learning in any discipline and level of education such as the need to understand communication, recognise written information and process the data involved. Literacy plays an important role in individuals' lives, as it provides them with the required apparatus to perform efficiently in society. Irrespective of the activity a person engages in his field of edeaviour and educational level, reading allows and enables one to access information, consider it, and apply the knowledge to the prevailing situations and issues affecting other members of society. Therefore, reading can be described as a nexus of literacy since reading is one of the keys that unlock the gate to literacy. The first step toward literacy is to acquire reading skills and the teaching of reading in our pre-primary schools effectively should be the goal of every language teacher as a foundation stage of learning. Reading is so significant to learning in general that every subject area. demand that pupils should be able to read and retain the information read. Since reading has been rated higher as an academic skill that is crucial in all formal school settings, and more so that pupils are more involved in reading than in writing, every pupil must have a good mastery of the reading skill.

However, despite the importance of reading as a critical skill to success across domains of life's activities, researchers such as Gabe, (2010), Fola Adebayo, (2014) Lawal, (2019) have observed that this skill is often ignored in pre-primary school level of Nigeria education. One of the major reasons learners perform woefully in the English language and especially in other courses could be a lack of learners' awareness and knowledge of the reading strategy that is required of them to successfully comprehend texts. It is, therefore, imperative that consideration be given to those strategies that can improve pupils' performance in reading comprehension. Experience has shown that instruction in comprehension helps pupils to understand what they read and remember, and what they read and communicate what they read with others. Comprehension can be improved and easier by embarking on instructional procedures that are capable of helping readers use a specific comprehension strategy to achieve the goal of teaching reading. An effort to develop reading ability requires knowledge of the factors underlying it. Grabe (2010) equally points to the importance of effective reading strategies and affirms that reading strategies should be accorded attention since they indicate how readers manage their interactions with the written text and because these strategies are revealed to be connected to reading comprehension.

This study presumes that reading is essential for the success of learning at the pre-primary school level. Pupils at this level, therefore, need to be equipped with several reading strategies to help them comprehend text information and ultimately for good performance not only in the English

language but in all subjects of their learning endeavours. As observed by Fola-Adebayo (2014), the poor state of reading in Nigeria is caused by a lack of knowledge of relevant reading strategies. Moreover, Lawal et al. (2022) opine that the use of effective comprehension strategies that provide specific instructions for developing and retaining comprehension skills, with intermittent feedback, is an improvement in reading comprehension exercise. Reading comprehension is increased when strategies are explicitly employed for teaching/learning and used by the teachers/pupils during reading (Sanford, 2015).Language learning strategies are the processes that teachers employ to teach the learners and the learners in turn, employ to learn the target language. Research in language learning such as Ofodu, (2010), Gabe, (2010), Fola Adebayo, (2014) Lawal, (2019 and Ahman and Lawal, 2023) identify strategies for teaching reading. Most current research focuses on appropriate methods, approaches, techniques, and strategies for the teaching of reading at all levels of Nigerian education. Specifically, this research work focuses on the contributions of meta-cognition, such as cognition of cognition to reading comprehension amongst pre-primary school pupils.

Theoretical Framework

The theoretical framework that reinforces this study is the theory of meta-cognition. Of particular interest to the study is Flavell's (1979) model which informed the use of many theories as bases for teaching and learning. This theory revolves around learners' ability to reflect on their cognitive processes and the awareness of the control that they possess over their thinking and learning processes while reading and solving problems. The concern of meta-cognitive theory is how teachers/learners employ meta-cognition knowledge to plan, monitor, and evaluate their reading comprehension. Meta-cognition refers among other things to 'the monitoring and consequent regulation and orchestration of these processes, usually in the service of some concrete goal or objective.' Flavell's (1979) meta-cognition theory is widely expounded and as a concept, it encompasses any knowledge or cognitive process that touches on monitoring and controls all aspects of cognition. Some words that have been synonymously and interchangeably used for meta-cognition in recent years by researchers include: self-management, met-mentation, or meta-learning. Other terms used in the literature in connection with meta-cognition include meta-cognitive beliefs, executive skills, meta-components, and judgments of learning in the contemporary world, meta-cognition is perceived as a major contributor to principal components of cognition which include memory, communication, attention, problem-solving, and intelligence notably for relevance in education such as reading comprehension. Leader (2008) stresses that meta-cognition is today used as an umbrella term encompassing the structures that are related to individuals' thinking processes and information that is valuable to the teaching and learning of reading at all levels of education.

Precisely, the term 'meta-cognition' means cognition about cognition, or thinking about thinking that is required in reading to reinforce comprehension (Padma, 2013). Meta-cognition refers to the knowledge and process that regulates cognition. More so, meta-cognition alludes to higher-order thinking which involves active control over cognitive- processes engaged in learning. If teachers and learners of reading are meta-cognitively aware, they will be able to know what to do even when they do not know what to do (Lawal et al., 2022). This means that they have strategies for finding out what they need to do. Meta-cognition involves activities such as designing how to catch up on a given learning task, tracking comprehension, and assessing progress and completion of a venture. Activities such as planning, monitoring, and evaluating a task based on objective and satisfactory completion are centered on meta-cognition (Nongtodu & Bhutia, 2017). Furthermore, meta-cognition is described as a level of thinking that involves active control over the process of thinking that is used in learning situations (Ofodu & Adedipe, 2011).

Difference between Cognition and Meta-cognition:

The justification for what is 'meta' and what is 'cognition' is a central problem with the concept of meta-cognition. Cognition and meta-cognition are two sides of a coin that are closely related

and can co-exist (Ogunleye, 2022). She gives an example that the skill involved in reading a text (a cognitive skill) is different from the skill needed for monitoring one's understanding of the text (a metacognitive skill). Cognition deals with mental processes such as memory, learning, problem-solving, attention, and decision-making. On the other hand, meta-cognition deals with an individual's higher-order cognitive processes, where a person has control over his/her cognition (Brindha & Srinivasan, 2015).

In this paperwork, the researchers think that the main difference between these two concepts-cognition and meta-cognition rests on the fact that while cognition aids an individual to engage in a variety of mental processes that help him/ her make sense of the world around, metacognition deals actively with the control of the cognitive processes which are very important in the process of teaching and learning. Moreover, by the description of 'thinking about thinking' meta-cognition ensures that a particular task ends perfectly through planning, monitoring, evaluating, and comprehending.

This points to the fact that cognitive processes allow normal functioning of a person but meta-cognition raises it to a higher level by making the person more aware of his/her cognitive processes. For example, the cognitive processes would allow a teacher to use a strategy or a pupil who is answering a question in reading comprehension to complete the task while meta-cognition would help both the teacher and pupil to double check through monitoring and evaluating the answer. Meta-cognition thus contributes to successful teaching and learning the Components of Meta-cognition according to Flavell's (1979) model of cognitive monitoring in Ogunleye, (2022) is chosen for this study because it is comprehensively designed and is regarded as the foundation for this research. In the field of cognition today, the model consists of four categories or components such as:

15. meta-cognitive knowledge
16. meta-cognitive experience
17. meta-cognitive goals (tasks) and,
18. Meta-cognitive actions (strategies).

All these are fundamental to teaching and learning processes at the pre-primary school level of education. Teaching strategies and meta-cognitive theories that can be employed by teachers at this level of education for teaching reading comprehension are numerous and some of them are enumerated below:

Abraham Maslow's Hierarchy of Needs

This study is premised on the greater influence of meta-cognitive theories on pupils' learning achievement. Abraham Maslow's Hierarch of Needs is one of the meta-cognitive theories that dwell much on human thinking about teaching and learning. The theorist is of the view that all humans have a hierarchy of needs system. (HHN). Maslow argued that every human being has multiple layers of needs, starting from the base, and of which each of these needs is to be met one after the other. The main need is that the class is called self-implementation. Maslow (1954) explains that the hierarchy of needs is a five-stage model, and he states that "basic needs organize themselves into a fairly deterministic hierarchy based on the principle of relative power". The five levels of Maslow's hierarchy are: **Physiological need:** These are the most basic needs, and they include the need for food, water, shelter, and clothing.

Safety needs: These needs include the need for security, protection, and freedom from danger.

Love and belonging need: These needs include the need for affection, acceptance, and belonging.

Esteem needs: These needs include the need for respect, recognition, and a sense of accomplishment.

Self-actualization needs: These needs include the need to fulfil one's potential and to achieve one's full potential. All these needs are very crucial to human development. This theory is very relevant to the development of children, particularly at the lower level of education in areas such

as pupils' enrollment, attendance, retention, and academic performance in schools. Each stage is crucial based on how human beings develop.

Functional curriculum theory

Functional curriculum theory which was developed by Franklin Bobbitt (1918) is another theory that is very germane to human development and it stresses the importance of learners possessing a diverse range of knowledge, ideas, innovations and resources to actively contribute to the global economy. Franklin Bobbitt identified functional content education as an approach where the child's environment and future circumstances dictate the methods and substance of education encompassing both the subjects taught and the instructional method employed and suggested that the curriculum should be tripartite and practical. The functional curriculum theory can be achieved by adopting the following steps:

i. Cultivating a profound sense of African pride by promoting the use of mother tongue or community language to facilitate teaching and learning and above all, promotes literary works of Africa as well as the contemporary African vision for its future in the evolving global society.

ii. Access to a diverse array of individuals' knowledge, methodologies concepts, and customs as the primary language. The advancement in technological innovations, resources, and strategies for social analysis are parts of the contributions of this theory to human development. Western and Eastern philosophies and religious beliefs are other credits to the theory.

iii. Personal development of this theory includes the enhancement of skills and qualities that contribute to social transformation, vocational activities, entrepreneurship, creativity, communication, interpersonal conduct, and self-awareness among other areas. This theory is very essential as it aims to pursue three objectives simultaneously by gradually broadening children's scope as their degree of maturity increases. Any of the components of the goals can also be utilized to enhance the functionality of current educational programs at all levels.

The theory is equally pertinent as it introduces the teaching of the English Language as a subject at the elementary stage of learning by stimulating the curiosity of children from an early stage of education, as their attitude of the learner towards learning is shaped throughout this period.

iv. In line with the goals of this study, the theory has the strength to promote the acquisition of effective communication, interpersonal behaviour, and self-awareness among other things.

Dreyfus model of skill Acquisition

This is an educational paradigm that demonstrates how students develop skills via intentional practice and structured teaching. Expertise is characterized by a seamless and effortless execution that arises naturally, spontaneously, and without the requirements of explicit comprehension. Consequently, there has been a transition from rigid adherence to rules to a more instinctive and implicit approach to thinking based on information. Developing new talent is a process that involves learning.

Ecological system theory

Ecological system theory, proposed by Urie Bronfenbrenner, offers a comprehensive framework for understanding human development within the context of various interconnected environmental systems. This theory posits that an individual's development is influenced by a complex interview of multiple environmental factors and systems that surround them. The framework also incorporates the role of learners' support service theories, recognizing that academic advising, counselling, mentoring; and additional support mechanisms play a crucial role in shaping pupils' educational experiences and outcomes. The model suggested that pupils' integration, highlights the importance of fostering a supportive environment to enhance pupils' success and academic progress.

The ecological systems theory recognises that individuals do not exist in isolation but are embedded within a series of nested environmental systems, each distinctly impacting their development. Bronfenbrenner delineated these systems into five levels, which exert varying

degrees of influence on an individual's development: microsystem, mesosystem, exosystem, macrosystem, and chronosystem.

Theory of Language Acquisition by Noam Chomsky (1950)

Chomsky propounded the theory of language acquisition in the year 1950. He views language acquisition as a biologically determined process that uses neural circuits in the brain, which have evolved to contain linguistic signals. Chomsky concluded that language acquisition requires an inborn faculty in children, this concept is known as the language acquisition device. In other words, humans are born with an innate language "device" that enables them to learn any human language. Before Chomsky, it was widely agreed that language was acquired through experiential learning, but theory argues that human brain structures naturally allow for the capacity to learn and use languages.

According to Chomsky, humans acquire language by unconsciously storing information in the brain, which can later be used for many types of written and oral communication. He also believes in the importance of children acquiring and developing effective language skills during the early critical development stages. This is because language apps discharge function in society, teaching them how to socialize and learn.

Everyone is born with the capacity to develop and learn any language; language development is instinctive; Every child has a "language acquisition device" or LAD for short; the LAD is a tool that is found in the brain; it enables the title rapidly develop the rules of language; The role of the LAD is to encode the major skills involved in language learning, but with a focus on the encoding of grammar; Grammar is a vital skill needed for children to learn the language. Chomsky disregarded the role of imitation alone, especially if the adult is using a structure that the child has not started to use yet.

All meta-cognitive instructional strategies stress the importance of pupils' 'knowing about their knowing'. Meta-cognitive reading strategies are seen as solutions to the problems of poor reading comprehension. Meta-cognitive strategies awareness is equally believed to be a major player in reading comprehension and the educational process. Scholars such as Ogunleye (2022) opine that readers who are exposed to explicit instruction in comprehension strategy and meta-cognitive thought processes tend to have a higher level of comprehension than those who do not engage in these skills. It is, therefore, suggested that educators must be taught how to effectively engage learners in metacognitive thought processes that will lead them to gain a higher level of competence in reading comprehension. This researcher is of the view that meta-cognitive reading ability needs to be focused on in language learning and teaching.

It is pertinent and of great importance that interventions are required at the secondary level to assist the pupils in improving their reading skills. The interventions to be offered at the secondary level include teaching pupils through an interesting curriculum and using explicit instructional skills and strategies to grasp the curriculum. It has been observed that secondary school teachers are often not sure of how to teach pupils to improve deficient reading skills because they have not been adequately trained in teaching reading strategies. While many classrooms engage in comprehension assessment, researchers have found that explicit strategy instruction is lacking in most classrooms (Ofodu, 2010, Muhammed, 2016 & Lawal, 2019).

This researcher similarly observes that different research on the improvement of reading comprehension has been done on singular reading strategies and isolated approaches used to analyse reading comprehension ability. This approach is often used to investigate the impact of different factors on reading comprehension. Such studies may not be all-inclusive since there are other factors which collaboratively affect the ability of learners in reading comprehension. Several

important factors and components influence reading comprehension such as questioning strategies, graphic organizers, etc.

Relevance of the Theory to the Teaching and Learning of Reading at Nigerian Pre-primary school level

Having established in the literature that reading comprehension as well as the reading strategies discussed in this study are informed by cognitive processes/strategies and meta-cognition theory. Moreover, meta-cognitive theory has been pointed to in the literature (Fries-Gaither, 2009) as the foundation for other reading comprehension strategies. Albazi and Shukri's (2016) findings revealed that meta-cognition has a positive impact on teachers and learners and the awareness it has on teachers and pupils, in turn, enhances their reading comprehension. The major concern of this theory is to aid readers in becoming proficient through continual monitoring of their thoughts, control of their experience with the text, and enhancement of their understanding. Thus, this meta-cognition model is relevant to the teaching and learning of reading at Nigerian pre-primary school level for the following reasons:

i. Teachers' knowledge of Meta-cognitive processes would help in developing learners' good thinking and lifelong learning to cope with new situations in this rapidly changing world.
ii. This model if judiciously utilized will help teachers of reading to integrate meta-cognitive knowledge into language instruction and develop learners who can take charge of their learning.
iii. To have meta-cognitive knowledge by the teachers of pre-primary school is important for effective language teaching and learning.
iv. The meta-cognition model encourages the use of several methods/strategies to promote teaching and learning at all levels of education including the pre-primary school level.
v. The concept of meta-cognition encourages primary pupils to self-regulate and strategic reading as essential components of comprehension.
vi. The model creates awareness and educates teachers of primary school in different ways by which pupils could be helped to become proficient readers and ultimately, comprehend effectively if judiciously utilized.
vii. This meta-cognitive model is relevant to teaching in primary school because it exposes teachers to how they can assist the learners in developing good reading skills by providing factual adventures that will help them understand and apply strategies to different types of texts.

Meta-cognitive reading strategies have been established and recommended as one of the solutions to the problem of poor reading comprehension in Nigerian primary schools. Effective teachers of reading can make use of meta-cognitive skills to monitor their pupils' understanding and reflect on what they have read because it creates awareness for the readers on how to apply different strategies to teach and learn to comprehend text. The meta-cognitive approach improves pupils' cognitive activities by expanding their awareness based on the regulation of their reading skills through various strategies.

Over and above, the theory is relevant to the teaching and learning of reading at the pre-primary school level in that when teachers and pupils are skilled in the application of different strategies and with ample background knowledge; they can use meta-cognitive self-monitoring skills to merge new and old knowledge to enlarge their schemata.

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ASSESSMENT OF INFORMATION LITERACY COMPETENCY AMONG POSTGRADUATE STUDENTS OF KWARA STATE UNIVERSITY, MALETE

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Abstract
This study evaluated the assessment of information literacy competency among postgraduate students of Kwara State University Malate. The objectives of the study are to; ascertain the ability to locate information resources, determine the student's ability to identify the most relevant information resources, and examine students' abilities to evaluate the information resources they need. The study used a descriptive survey approach. The population consisted of all 40 postgraduate students of library and information science and computer science students at Kwara State University, Malete during the academic year 2023–2024. Due to the study's manageable population, total enumerative sampling techniques were employed. The findings revealed that the best places to look for a journal article are the index, abstract, and catalogues. The study also found that the call number is the most relevant content to consult among others. The findings also showed that the best way to find a book on the shelf is to use the library's catalogue, book index, and abstract. Therefore, the study concluded that the information resources of the library are fully utilised by postgraduate students. It was recommended among others that university management should always struggle to withstand and possibly improve upon existing training platforms to ensure that postgraduate students remain relevant and up-to-date in an ever-changing and dynamic information society.

Keywords: Assessment, Information literacy, Competency evaluation, Information retrieval, Postgraduate, Students

Introduction
To advance in their careers or academic positions, postgraduate students seek postgraduate degrees. Some postgraduate students pursue additional degrees to fulfil their professional needs. Higher degrees must therefore be obtained for them to continue living and progressing in their careers. For postgraduate students to conduct research effectively and efficiently, they must be able to find, recognize, and assess information sources. The Chartered Institute of Library and Information Professionals (CILIP) (2018) defines information literacy as the ability to critically evaluate and make well-rounded decisions regarding whatever information to be encountered and used Nowadays, one of the most important aspects of university education worldwide is the capacity to effectively handle information overload in the majority of academic areas. However, to develop this talent, university students need to have the appropriate information literacy abilities.

These days, knowledge is seen as a key commodity and an essential component of all human endeavours (Hadimani & Rajgoli, 2010). In daily lives, information is utilised for planning, decision-making, and task completion, but not all information meets the needs of information users particularly students, in terms of relevance, accuracy, and reliability. Additionally, due to the information explosion, students are inundated with so much data that it is challenging to go through it all and find the knowledge they need. Because it can be challenging to find the information you need, students and researchers need to have basic information skills, according to Hazrati et al. (2014). These include the ability to identify the type and extent of information,

assess information needs, locate the information they need and where to find it, use it efficiently, and comprehend its legality.

Information literacy (IL) has been described differently by different experts in the field. It could be viewed as a collection of skills that a person should have to identify when information is needed and to have the ability to find, assess, and properly and efficiently use the necessary information in a way that is both morally and legally acceptable. Intellectuals need to be able to recognize, retrieve, assess, and apply information to solve issues. This is known as IL according to Maidin, et al (2022), it broadens students' knowledge and moulds their thinking, provides opportunities for self-direction and learning, and lays the groundwork for them to succeed academically. It is also crucial for achieving lifelong learning (Soleymani, 2014). Postgraduate students can obtain the appropriate information quickly thanks to their knowledge skills and talents (Lata & Sharma, 2013). Students in the higher education system should arguably be information literate to be able to quickly and efficiently extract relevant information from the sea of information to manage independent learning in an environment of information overload (Santharooban, 2016).

Therefore, the general aim of library and information (LIS) education and computer science in Nigeria is to produce knowledgeable and skilled information scientists that meet the information needs of society, promote literacy and lifelong learning, support education and research, develop information literacy, adapt to technological advancements, preserve cultural heritage and foster collaboration and networking (Alakpodia, 2014). It is against this backdrop that the LIS and computer science department was one of the pioneers of the Kwara State University, Malate, which was established in 2009. This is an attempt to equip students with information skills to enable them to easily access, retrieve and use information resources to enhance their research works. Since this was the first set of students for the postgraduate programmes in the department, it was convenient to assume that no study has been conducted in this particular area of research interest concerning IL competency of the LIS and computer science postgraduate students at Kwara State University. It is in this light that this study investigated the IL competence of the LIS and computer science postgraduate students of Kwara State University, Malete, to fill the identified gap.

Statement of the Problem

Postgraduate LIS and computer science students now need to gain information literacy skills due to the quick growth of information technologies and the abundance of information resources. However, there is rising concern that these kids might lack the necessary abilities to find, assess, and use information resources in their academic and professional endeavours. Even though IL is essential for both professional and academic success, students are having trouble not only finding and choosing the information they need but also assessing the reliability and authority of the results that are returned from the extensive search (Maidin, et al 2022). According to preliminary observation students at Kwara State University in Malete are having a hard time getting the information they need quickly. This is in line with the observation of Lata and Shama (2013) that some students find it difficult to find relevant resources within a short period. Based on available literature, there is a dearth of research on the IL competency of postgraduate LIS and computer science students at the Kwara State University, Malete. The situation calls for research attention such as this. It is in light of this that the study sets out to investigate the level of IL competency among postgraduate LIS and computer science students at the Kwara State University, Malete.

Objectives of the Study

The main objective of the study is to examine the level of information literacy competency among postgraduate students of Kwara State University, Malete. The specific objectives are to:

1. ascertain the ability to locate information resources among postgraduate students of Kwara State University, Malete;

2. determine the student's ability to identify the most relevant information resources; and
3. examine students' ability to evaluate the information resources they need.

Review of Related Literature

The relevant literature has been reviewed in this study by searching library databases such as Science Direct, EBSCO Host, HINARI, JSTOR, OARE, AGOEA and ProQuest database, and trustworthy open access. Different combinations of keywords were used such as, 'information literacy', 'information literacy competency' and 'information competency. The information literacy competency of university students is an area of concern for researchers in the field of LIS, computer scientists and educators. Many studies have been conducted to investigate the extent of students' competencies in using information resources for their academic work. However, these studies exposed gaps in knowledge relating to information literacy competencies and their relevance to students' academic work. Hemamalini and Umesh (2020) have examined the information literacy competencies among the undergraduate students of Mysore City. The findings from the study showed that less number of students were aware of using different search strategies to find the resources. It was also established in the study that the students lack proper guidance in accessing and using the information properly. The study suggested that the library authorities and library professionals must ensure the provision of proper guidance to the students to search for information sources in the library.

However, Lwehabura (2018) conducted a study to examine the IL skills and the difficulties experienced in searching the information among the students of Saooine University of Agriculture Tanzania. The study concluded that even though information literacy exists among students, many of them were found wanting in major techniques of information searching. Likewise, Asif and Mahmood (2021) explored the students' perceived IL self-efficacy in the digital information environment; the research used a cross-sectional survey to investigate 350 business students at the University of Management and Technology, Lahore. The study found that the students had high self-efficacy for basic information literacy skills and low self-efficacy for advanced-level IL skills. In the same manner, Hicks and Lloyd (2021) investigated the discourses of IL and the learner from within higher education while focusing on professional texts. Using discourse analysis, 16 textbooks and 4 recent English-language models of IL were analysed in the study.

Benamram et al. (2020) In a study on teachers' perspectives concerning IL teaching in primary schools in Israel, using a qualitative research method argued that participation in the national ICT programme did not lead to the integration of information literacy in the Curriculum. Also, a significant gap was discovered in both schools between the teachers' perceptions who understood the importance of teaching IL and its actual implementation. Many investigations have been carried out on IL skills leading to several findings. Lata and Sharma (2013) studied IL among students at postgraduate institutes of medical education and Research. The data used were collected through a questionnaire. They discovered that the majority of respondents had high skills in accessing electronic resources. In the same study, the majority of students were said to have good skills in evaluation. In a similar investigation conducted by Omeluzor et al. (2013), they discovered that most of the respondents can identify their information needs. Issa et al. (2015) studied the IL competency of undergraduate students of the University of Ilorin, Kwara State, Nigeria. The result revealed that most students had difficulties in the identification of appropriate information resources. Similarly, the most suitable content of a catalogue to consult to quickly direct users to the position of the required book on the shelf is the call number. Call numbers are a unique identifier assigned to each book, typically based on the Dewey Decimal Classification (DDC) or Library of Congress Classification (LCC) system (Friday, Joshua, & Yusuf 2019).

Likewise, Ilogho and Nikiko (2014) observed that the majority of students had a deficiency in the aspect of the identification of information resources needed. Another related research was carried

out by Dorvlo and Dadzie (2015) on the IL level among students of Ghana University. They noted that students had no adequate evaluation skills, unskillful in search strategies and search tools. Hazrati et al. (2014), in their comparative investigation, revealed that academia had a higher level of retrieving information and evaluating skills than skills of using information ethically. Their findings are in agreement with that of Leichiner et al. (2013) who observed that the IL level in the evaluation of information resources among psychology students was good. However, the findings of Malliari et al. (2014) showed that students could not evaluate information resources of their choice. Contrary to the above findings Igun and Odafe (2014) discovered that students were able to recognize, access, and use information resources effectively.

Sambo, Kikiri, and Akanbi (2022) in their study, on postgraduate student's computer skills and use of online information resources, the study recommended that students should be exposed to additional computer applications, including Corel Draw, internet search tactics, and the efficient use of Boolean concepts and students should not give up on any program that will help them enhance their computer software abilities since it will include the utilization of electronic information resources among others.

Igun and Odafe (2014) discovered that students were able to recognize, access, and use information resources effectively. Santharooban (2016) analyzed the IL of the Medical Students University of Sri Lanka. He discovered that 47% of respondents could locate information needs. He therefore concluded that the locating skill level possessed by the students of the Medical school was satisfactory. The study further showed the source to locate an article from the journal is the index and abstract, both index and abstract are designed to help users find specific articles within journals (Santharooban 2016).

Similarly, Rafique and Khan (2018) conducted a study of graduate students from two Lahore universities and concluded that the students preferred online resources on a library visit. The students claimed in this research that they had adequate skills to understand and explain the information required but the study suggested IL instruction for the students to become lifelong learners in finding, interpreting, arranging, and using it for their future needs. LIS researchers have also discussed some of the major IL issues. Lack of interest among students, the quality of information literacy is a concern for the progress of information literacy. Furthermore, the lack of awareness of information literacy, and the lack of cooperation between librarians and faculty are the major issues (Varlejs & Stec, 2014). Information literacy is a crucial skill for students, researchers, and postgraduate learners, it enables them to conduct research and make informed decisions based on accurate and reliable information.

In Nigeria, there is a need to continually assess the level of information literacy skills among scholars, as previous studies have reported dissimilar findings. Assessment can help inform the development of policies and strategies for improving the student's skills. Oyedapo et al. (2014), evaluated undergraduate students' information literacy skills at Obafemi Awolowo University, Nigeria. The study reports that the students had a basic level of information literacy skills, however, it also found that students had difficulty evaluating the credibility and reliability of online sources. Similarly, Inazu and Soyemi (2022) assessed the information literacy skills of students in three of the six federal universities in South-West Nigeria and found that most students had a high level of information literacy skills, with most students affirming the ability to search, access and evaluate information. Information literacy skills are becoming increasingly important in today's digital age, and employers are seeking individuals who possess these skills in addition to other requirements (Crawford & Irving, 2014). Enhancing the information literacy competencies of undergraduate students in Nigeria holds paramount significance since it can enable them to make informed decisions, augment their academic achievements, and bolster their professional opportunities.

Rukamata (2022) examined information literacy skills among undergraduates at Mzumbe University, Tanzania, and found that most undergraduates were skilled in information identification and evaluation. Similarly, Maidin, et al (2022) evaluated the information literacy skills among medical students at a university in Kuala Lumpur, Malaysia. Findings from the study show that about 75% of the students rated their information literacy skills as high, while the internet search engine was the most frequently used information source. However, a similar study among medical students at a university in Nigeria revealed that the students had not attained adequate information literacy competency when assessed with the IL. Similarly, Information literacy is presently used as a tool to attain organizational fineness but the appearance of students' information literacy skills on the job market is largely reliant on the number of information skills they have acquired in school through information literacy instruction. (Trembach. 2023).

Friday, Joshua, and Yusuf 2019) asserted that most students are unaware that call numbers are used to classify materials and tell them the locations of materials on the shelves. It also shows that students lacked knowledge of the function of Boolean operators as it is a tool being used to narrow or broaden search results of any needed information. The greatest appropriate content of a catalogue to consult to quickly direct users to the position of the required book on the shelf is the call number. Besides, Call numbers are a unique identifier assigned to each book, typically based on the Dewey Decimal Classification (DDC) or Library of Congress Classification (LCC) system Friday, Joshua and Yusuf (2019).

The purpose of this assessment was to evaluate the student's ability to locate and use information effectively to accomplish a task, ability to identify the most relevant information resources, and ability to evaluate information critically. In addition to supporting institutional decision-making processes like program review and strategic planning, as well as external accountability initiatives like accreditation, the findings are intended to educate faculty and other decision-makers about the contributions and effects of the programs being offered.

Methodology

A descriptive survey method was employed for the study; this is because of its convenience for data collection through the use of a questionnaire (Osuala, 2005). The population for this study was the entire postgraduate students of LIS and at Kwara State University, Malete totalling 40, 2023/2024 academic sessions). The enumerative sampling technique was used as a result of the small population of the study. Note that these groups of students were considered appropriate for the study because they were already being exposed to information literacy right from the undergraduate. A structured questionnaire tagged: **Information Literacy Competency among Postgraduate Students Questionnaire (ILCPSQ)** was used for the collection of the data. The questionnaire was first pretested on a few students who could not take part in the actual study. This was so to ensure the face and content validity of the instrument. The questionnaire was distributed to the respondents physically in their classes with the aid of 2 research assistants who were adequately instructed by the researcher. After the distribution of the 40 copies of the questionnaire, the researcher was able to retrieve all the 40 copies that were found usable for the study. Therefore, there was a response rate of (100%). The data retrieved were analysed using descriptive statistics methods.

Table 1: Genders Distribution of the Respondents

Genders	Frequency	Percentage
Male	25	62.5
Female	15	37.5
Total	**40**	**100**
Population of the Study	Frequency	Percentage
MLIS	8	20
MSC	19	47.5
MPhil.	4	10
Ph.D.	9	22.5
Total	**40**	**100**

Filed Survey, 2024

Table 1, above shows that 25(62.5%) of the respondents are males 15(37.5%) of the respondents are females 8(20%) of the respondents are master of library and information science students, 19(47.5%) are master of computer science students, 4(10%) are master of philosophy. This indicated that the population of males is more than the females population at the postgraduate program.

Table 2: Students ability to locate resources

Variables	Frequency	Percentage
Index and Abstract	27	67.5
Catalogues	10	25
All of the above	3	7.5
Total	**40**	**100**
Authors name	8	20
Title of the book	6	15
Call number	22	55
Place of publication	4	10
Total	**40**	**100**

Filed Survey, 2024

Table 2, shows that 27(67.5%) of the respondents indicate that index and abstract are the most suitable sources to be used to locate an article from a journal while 10(25%) of the respondents indicate catalogues whereas 3(7.5%) indicate all of the above. It is further, shows that 22(55%) of the respondents indicate that call number is the most suitable content of the catalogue to consult while 8(20%) of the respondents indicate the author name whereas 6(15%) indicate the title of the book and 4(10%) indicate place of publication.

Table 3: Students' ability to identify the most relevant resources

Tool to locate books	Frequency	Percentage
Library catalogue	20	50
Book Index	9	22.5
Abstract	7	17.5
All of the above	4	10
Total	**40**	**100**

Filed Survey, 2024

Table 3, shows that 20(50%) of the respondents indicate that a library catalogue is the most suitable tool to locate books while 9(22.5%) indicate book index whereas 7(17.5%) indicate abstract, and 4(10%) indicate all of the above.

Table 4: Students' ability to evaluate most relevant resources

Tools to find other resources	Frequency	Percentage
Bibliography	6	15
Index	7	17.5
Glossary	23	57.5
All of the above	4	10
Total	**40**	**100**

Filed Survey, 2024

Table 4, shows that 23(57.5%) of the respondents indicate that a glossary is the most suitable resource to be used while 7(17.5%) indicate index whereas 6(15%) indicate bibliography and 4(10%) indicate all of the above.

Discussion of the Findings

Based on the data collected and analyses on the assessment of information literacy competency among postgraduate students, the findings of the study revealed that index and abstract are the most relevant sources to be used to locate an article from the journal, followed by catalogues. This is in line with the findings of Rukamata (2022) which asserted information literacy skills among undergraduates at Mzumbe University, Tanzania, and found that most undergraduates were skilled in information identification and evaluation. Supported by Omeluzor et al. (2013) who asserted that most of the respondents can identify their information needs. The study revealed that the call number is the most suitable content of the catalogue to consult, followed by the author's name, title of the book, and place of publication. This is disagreed with the findings of Friday, Joshua, and Yusuf. (2019) asserted that most students are unaware that call numbers are used to classify materials and tell them the locations of materials on the shelves.

The study indicated that a library catalogue is the most relevant tool for locating books, followed by a book index and abstract. These findings are in agreement with the findings of Hazrati et al. (2014) asserted that students and researchers must be equipped with basic information skills such as the ability to determine the nature and extent of information, the ability to evaluate information needs, the ability to access needed information and its source, the ability to use information effectively and ability to understand the legality linked to the information. This is supported by Friday, Joshua, and Yusuf (2019) who avowed that Call numbers are a unique identifier assigned to each book, typically based on the Dewey Decimal Classification (DDC) or Library of Congress Classification (LCC) system.

Conclusion

Based on the findings of this study, it is concluded that most postgraduate students averagely possess basic skills of information literacy. Based on the result of the study, most postgraduate students were acquainted with techniques for identifying, accessing, and locating their information resources. Therefore, the information resources of the library are fully utilized by the postgraduate students.

Recommendations

1. University management should always struggle to withstand and possibly improve upon existing training platforms to ensure that postgraduate students remain relevant and up-to-date in an ever-changing and dynamic information society.
2. Periodic workshops, seminars, and hands-on practical sessions should be organized while student-centered teaching and learning methods should be encouraged.
3. A Centre for Information Literacy Education should be put in place and coordinated by the university librarian.

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INFLUENCE OF GENDER AND SCHOOL TYPE ON ACADEMIC SELF-EFFICACY AMONG UPPER BASIC SCHOOL STUDENTS IN ILORIN METROPOLIS IN KWARA STATE, NIGERIA

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Abstract
*Gender and school type remain important variables in the assessment of students' academic self-efficacy and it is a topical issue that calls for investigation. This study examined the influence of gender and school type on academic self-efficacy among upper-basic school students in Ilorin Metropolis in Kwara State. Stratified and simple random sampling techniques were used to select three hundred (300) respondents (150 public and 150 private upper basic secondary school students in Ilorin metropolis in Kwara State. An adapted version of the Academic Self-efficacy Scale (**ASES**) by Owen and Froman (1988) was used for data collection. The instrument contains 20 items rated on a 4-Likert-type scale. The instrument was validated by three experts in the Department of Social Science Education, University of Ilorin, Ilorin, Nigeria, and a reliability coefficient of **.67** was found for the said instrument used in the study. To analyze the data collected from the study, descriptive statistics such as frequency counts, percentages, mean, and standard deviation were used to answer the research questions while a t-test was used to test the research hypotheses. The findings of the study revealed that: i. 165 representing had a high level of academic self-efficacy, ii. there is a significant difference in the male and female students' academic self-efficacy and iii. there is no significant difference in the student's academic self-efficacy based on school type. Based on the findings of the study, the researchers recommended that schools should implement gender-specific support mechanisms through targeted interventions such as mentorship programs and workshops designed to address the unique needs and challenges faced by each gender in their academic pursuits.*

Keywords: Academic self-efficacy, Gender variation, and School type.

Introduction
Academic self-efficacy implies how an individual judges himself and his confidence to succeed in a given academic task. It is a psychological construct that defines an individual's self-belief to accomplish a given academic task and it influences the amount of effort, perseverance, and academic mindset put up by the learners to achieve a desired educational goal and it is affected by gender and school type. Academic self-efficacy, however, is task-specific and refers to a learner's personal belief about his ability to attain a set educational goal. Bandura (2001) reported that academic self-efficacy is an individual's personal belief in his/her capability to complete a particular academic task. It is also seen as a factor that has a positive influence on performance in a given academic task.

Schunk and Pajares (2005) observed that in a classroom situation, academic self-efficacy factors such as experience, vicarious experiences, verbal persuasion, and physical and emotional state make or mar students' achievement, retention, and desire for knowledge in their academic endeavour. It was further stated that performance experience is considered the most influential factor of academic self-efficacy and it dictates the teaching and learning process, given that learning depends to a greater degree on prior knowledge. Students with positive past experiences tend to have better performance achievement in the classroom setting while their counterparts with negative experiences seems to be faced with the challenges of doing well in their academic endeavour. According to Schunk and Pajares, (2005), it was reported that students who possess positive high perceived self-confidence are motivated to put in their best to have a successful academic achievement.

In support of this assertion, Zajacova, Lynch, and Espenshade (2005) affirmed that students with high academic self-efficacy have been found to have higher academic success than their counterparts with low academic self-efficacy. Within the educational setting, there is a genuine interest in understanding the cognitive and behavioural factors that can enhance or sustain a student's academic performance, and how they affect the overall developmental process of the student. Empirical studies have widely revealed that self-efficacy is significantly related to the student's academic performance than other cognitive variables and it is regarded as an essential competence and performance mediator (Brown, Tramayne, Hoxha, Telander & Lent, 2008). This implies that self-efficacy enhances cognitive processes.

Perceived self-efficacy goes a long way in determining students' performance as it affects fundamental areas such as goal setting, interest, expectations, and perceived difficulties and opportunities in social settings. People's beliefs about themselves represent a fundamental factor in attaining the set goals as well as decision-making in life. In a related manner, Bandura, (2006) observed that the higher an individual's perceived self-efficacy is, the higher will be the effort expended in an activity and their persistence to achieve the desired goal and this is very essential for students to succeed in a learning process. In an attempt to differentiate self-efficacy from related concepts such as self-esteem or self-concept, Linenbrink and Pintrich (2003) observed that self-efficacy is task-specific while both self-esteem and self-concept are more general affective of self-evaluations.

Similarly, Schunk and Pajares (2005) observed that academic self-efficacy plays a key role in students' self-regulated learning and it was further stated that students with a high belief in self-efficacy increasingly tend to put in more effort, persistently examine their progress, and apply strategies to attain the educational goals. In support of this assertion, Klassam and Lynch (2007) opined that only students with high self-efficacy can do better and achieve more than the set goals while their counterparts with low academic self-efficacy find it difficult to excel in their academic endeavours and achieve the set goals. In a related manner, Afari, Ward, and Khine, (2012) affirmed that students whose academic self-efficacy is high had better academic performance than their counterparts whose academic self-efficacy is low while investigating relationships between academic self-efficacy and students' academic performance. Other researchers such as (Sharm & Silbereisen, 2007; Reyes, 2011; Moustafa & Sudhir, 2013) equally observed that students with low academic self-efficacy have low academic performance while students with high academic self-efficacy have high academic performance.

In an attempt to examine salient variables that affect students' self-efficacy and academic success, gender has attracted the attention of researchers. Conflicting results had, however, been reported on gender about students' academic self-efficacy. For instance, DeBacker and Nelson (2000) and Thwaites (2013) reported in their study that female college students have low academic self-efficacy while their male counterparts have high academic self-efficacy while Schunk and Pajares, 2002) equally found out that male students have high academic self-efficacy than female students. Similarly, Veerabhadra (2021) affirmed that there is a significant relationship between academic self-efficacy and gender of the students. On the contrary, Baji (2020), in his study, reported that there was no gender difference in academic self-efficacy of upper-basic secondary school students in Niger State, Nigeria.

Despite the importance attached to gender as a variable, school type has equally been a topical issue widely researched. It has been widely reported that school ownership (private or public) plays a significant role in the making of the students in terms of quality of teaching, enabling environment, and intervention programmes being offered to the students. For instance, Thwaites (2013), in his study, reported that school type is significantly related to the student's academic self-efficacy. This implies that the variable of school type plays an important role in the student's

academic self-efficacy from the foregoing, it can be inferred that, there remain conflicting results on the topic under consideration and that it has not been given the required attention, especially in Ilorin Metropolis, and that most of the related studies are foreign-based. It is, therefore, against this background, that the researchers deemed it necessary to examine the influence of gender and school type on academic self-efficacy among upper-basic school students in Kwara State, Nigeria.

Statement of the Problem

Academic success has been repeatedly found to be greatly affected by the student's academic self-efficacy and gender of the students and the type of school attended occupies an im important place. This is because no two individuals will have the same characteristics. For instance, Veerabhadra (2021) affirmed that there is a significant relationship between academic self-efficacy and the gender of the students. Similarly, Thwaites (2013) affirmed that learners with low perceived self-confidence had low academic performance and that male students have better academic self-efficacy than their counterparts. It was further revealed that school type equally played a significant role in the student's academic self-efficacy as school occupies an important position in the making of the students.

From the foregoing, it can be inferred that, despite the reported interest of researchers in this area, there is a dearth of studies on the topic under consideration which underlines the need for further studies to complement the existing findings on the factors that can enhance students' academic self-efficacy and academic success. This study, therefore examines the influence of gender and school type on the academic self-efficacy of upper basic school students in Kwara State.

Purpose of the study

The main purpose of this study is to investigate the influence of gender and school type on the academic self-efficacy of upper-basic school students in the Ilorin metropolis in Kwara State. Specifically, the study sought to assess:

19. Profiles of academic self-efficacy of upper basic secondary school students in Kwara State
20. Academic self-efficacy of Kwara State upper basic secondary school students based on school type

Research questions

The following research questions were raised to guide the conduct of this study:

v. What is the profile of Kwara State upper- basic secondary school students' academic self-efficacy?

vi. What is the difference between the academic self-efficacy of male and female upper basic secondary school students in Ilorin Metropolis in Kwara State?

Research Hypotheses

The following research hypotheses were formulated:

1. There is no significant difference between the academic self-efficacy of male and female upper basic secondary school students in the Ilorin metropolis in Kwara State.
2. There is no significant difference between the academic self-efficacy of private and public upper basic secondary school students in the Ilorin metropolis in Kwara State.

Methodology

The research design adopted for this study was a descriptive survey. This is because descriptive research design allows the researcher to sample a very large number of students to be involved in the study. This research design was chosen because the researcher is interested in involving a very large amount of students. The population for this study comprised all Kwara State upper basic school students and (300) three hundred students were randomly selected. An adapted version of the Academic Self-efficacy Scale by Owen and Froman (ASES) to measure academic self-efficacy

among upper basic secondary school students in Ilorin West, Kwara State. The instrument contains 20 items rated on a 4-point Likert type such as strongly agree = 4, agree = 3, Disagree = 2, and strongly disagree =1. The instrument was validated by three experts in the Department of Social Science Education, University of Ilorin, Ilorin, Nigeria. A reliability coefficient of **.67** was found for the instrument. Descriptive statistics comprising frequency counts and percentages were used to answer the raised research questions while an inferential statistics t-test was used to test the hypotheses postulated.

Results

Demographic Characteristics of the Respondents

This section describes the demographic information of the respondents using frequency and percentage as shown in Tables 1 and 2.

Table 1: Frequency and Percentage Distribution of Respondents by Gender

Variable		Frequency	Percentage
	Male	151	50.3
Gender	Female	149	49.7
	Total	**300**	**100.0**

Table 1 shows that 300 students participated in the study. There are 151 (50.3%) males and 149 (49.7%) females respectively that participated in the study. This implies that slightly more male students compared to female students participated in this study.

Table 2: Frequency and Percentage Distribution of Respondents by School Type

Variable		Frequency	Percentage
	Public	137	45.7
School Type	Private	163	54.3
	Total	**300**	**100.0**

Table 2 shows that 300 students participated in the study. There are 137 (45.7%) students from public schools and 163 (54.3%) students from private. schools respectively participated in the study. This implies that slightly more private school students participated in this study compared to public school students.

Research Question 1: *What is the level of students' academic self-efficacy?*

To answer research question one, students' responses to the academic self-efficacy questionnaire were analysed and the summary of the results is as shown:

Table 3: Frequency and Percentage Analysis of Profile of Students' Academic Self- -efficacy

Academic Self-efficacy	Frequency	Percentage (%)
High Level	165	55.0
Average Level	120	40.0
Low Level	15	5.0
Total	**300**	**100.0**

Results in Table 3 present the responses of the participants to academic self-efficacy that sought information on the level of secondary school students' academic self-efficacy. The result in Table 3 indicated that 165 representing (55.0%) had a high level of academic self-efficacy, 120 representing (40.0%) had an average level of academic self-efficacy, and 15 representing (5.0%) had a low level of academic self-efficacy. This implies that the profile of secondary school students' academic self-efficacy was high.

Hypotheses Testing

H_{O1}: *There is no significant difference in the male and female secondary school students'*

academic self-efficacy.

To test this research hypothesis, participants' responses to the student's academic self-efficacy were analysed based on gender as shown in Table 4.

Table 4: Mean, Standard Deviation, and t-test Analysis of Difference in the Difference in the Male and Female Students' Academic Self-efficacy

Gender	No	Mean	Std.	df	Cal.t-Value	ρ-value	Decision
Male	151	59.87	11.92	298	2.51	.01	**H_{01} Significant**
Female	149	56.36	12.42				

ρ < 0.05

Results in Table 4 indicate a calculated t-value of 2.51 and **ρ**-value of .01 at an alpha level of 0.05. The null Hypothesis 1 was rejected since the **ρ**-value of .01 is lower than 0.05 alpha level (.01 <0.05). This indicated that there is a significant difference in the male and female secondary school students' academic self-efficacy. This is in favour of the male students with a mean score of 59.87 greater than the mean score of 56.36 for female students (male = 59.87 > female = 56.36). This implies that gender statistically influences upper-basic secondary school students' academic self-efficacy.

H_{O2}: *There is no significant difference in the secondary school students' academic self-efficacy based on school type.*

To test this research hypothesis, participants' responses to the student's academic self-efficacy were analysed based on school type as shown in Table 5.

Table 5: Mean, Standard Deviation, and T-test analysis of Difference in the Upper Basic Secondary School Students' Academic Self-efficacy based on School Type

School Type	No	Mean	Std.	Df	Cal.t-Value	ρ-value	Decision
Public	137	57.85	11.80	298	.36	.72	**H_{02} Not Significant**
Private	163	58.36	12.71				

ρ >0.05

Results in Table 5 indicate a calculated t-value of .36 and **ρ**-value of .72 at an alpha level of 0.05. The null hypothesis two was not rejected because the significance level of .72 is higher than 0.05 (.72 >0.05). This indicated that there is no significant difference in the upper basic secondary school students' academic self-efficacy based on school type. This implies that school type did not influence secondary school students' academic self-efficacy.

Discussion of the Findings

The finding revealed that the profile of upper-basic school students' academic self-efficacy was high. A supportive and nurturing educational environment might be a significant factor in the discovery. Students are more likely to have a strong feeling of academic self-efficacy in their abilities to do well when they are supported by teachers, peers, and educational systems with the required tools to achieve academically. Teachers equally have a special place in encouraging students to develop self-belief by providing constructive comments and clear instruction. Additionally, learners who feel confident in their academic ability may benefit from a school culture that rewards hard work and personal development. These identified factors may be responsible for this finding.

Another finding of this study indicates that there is a significant difference in the male and female upper basic school students' academic self-efficacy. The findings may be a result of the societal ascribed and cultural gender expectations and preconceptions. Society frequently has

preconceived notions about how people should behave based on their gender. However, empirical studies and not only common sense can answer certain tasking questions. The finding of this study was therefore buttressed by DeBacker and Nelson (2000) and Thwaites (2013) who equally found that there is a significant difference in the academic self-efficacy of male and female students. Similarly, Schunk and Pajares (2002) reported in their study, that there is a significant difference in the academic self-efficacy between male and female students. The finding equally aligns with the results reported by Veerabhadra (2021) who reported that there was a significant difference in the academic self-efficacy of secondary school boys and girls. The girls had higher academic self-efficacy than the boys. In disagreement with this finding, however, is the finding of Baji (2020) who reported that there was no gender difference in academic self-efficacy of upper basic secondary school students in Niger State, Nigeria.

In addition, the finding indicates that there is no significant difference in the secondary school students' academic self-efficacy based on school type. The existence of consistent and efficient educational practices and all-inclusive interventions across various schools kinds may be a significant factor in the discovery. Students attending different kinds of schools (including public, or private schools) may be exposed to similar teaching methods and support systems from the teachers and the school as a whole which is capable of nullifying the differences. This uniformity in teaching strategies may help students perceive their academic self-efficacy in similar ways. This finding is contrary to the findings of Thwaites (2013), in his study among Indian High school students, that school type is significantly related to the student's academic self-efficacy.

Conclusion

The study revealed that the students involved in the study have a high level of academic self-efficacy, indicating that they have a strong belief in their capacity for academic success. This favourable self-perception may encourage them to pursue their academic goals in the future. Also, the study indicated that there is a disparity in academic self-efficacy between male and female students which calls for the need for continued interventions and support structures to guarantee that both genders receive equal opportunity and motivation to realize their full potential. Finally, the study revealed that there is no significant difference in academic self-efficacy based on the type of school. This signifies the importance of upholding high educational standards for all students regardless of the type of school they attend. Overall, these results highlight the need to create an enabling and inclusive learning environment for secondary school students, regardless of their gender or academic background, to nurture their self-efficacy.

Recommendations

The following recommended actions are made:

4. Given the high academic self-efficacy observed among secondary school students, educational institutions should continue to implement and expand self-efficacy-building programmes. These programmes can include workshops, mentoring, and counselling services aimed at reinforcing students' confidence in their academic abilities.
5. Recognizing the significant difference in academic self-efficacy between male and female students, schools should implement gender-specific support mechanisms. This could involve targeted interventions, mentorship programs, or workshops designed to address the unique needs and challenges faced by each gender in their academic pursuits.
6. To bridge the gender gap in academic self-efficacy as the finding revealed, curriculum planners must ensure that the curriculum is gender inclusive.
7. Teachers should provide equal opportunities and encouragement to all students, regardless of their gender, and challenge gender stereotypes within the classroom.
8. Since there was no significant difference in academic self-efficacy based on school type, education authorities must allocate resources fairly and equitably across all types of schools. This will ensure that students in different school settings have access to similar educational

opportunities and support systems.

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INFLUENCE OF SCHOOL ENVIRONMENT ON SECONDARY SCHOOL STUDENT'S PARTICIPATION IN CO-CURRICULAR ACTIVITIES IN OFFA LOCAL GOVERNMENT AREA, NIGERIA

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Abstract
The research investigated the influence of the school environment on secondary school student's participation in co-curricular activities in the Offa local government area in Nigeria. This research adopts a descriptive survey design. *Three questions were answered and two hypotheses were formulated and tested. Influence of School Environment on Students' Participation in Co-Curricular Activities Questionnaire (ISESPCAQ) as a self-structured questionnaire to gather data. For this study, the respondents were chosen using simple random sampling procedures. Descriptive statistics, specifically the mean and standard deviation, provided answers to the research questions. At 0.05 level of significance, the two null hypotheses developed for this study were tested using Pearson moment correlation statistical tools of analysis. The findings of the research showed that senior secondary school students in Offa LGA perceived their school environments as inappropriate for co-curricular activities. The majority of questionnaire statements related to environmental factors were met with disagreement. Despite this, students showed a high level of participation in co-curricular activities and agreed with questionnaire items related to their involvement. The study suggests that favourable school environmental factors have a positive influence on student participation in co-curricular activities. It was recommended that school administrators should give top priority to improving the environmental aspects of the school since a favourable atmosphere is essential for the success of co-curricular activities. Since student engagement is crucial to the success of co-curricular activities, it should be encouraged and rewarded to keep students' enthusiasm high.*

Keywords: Co-curricular Activities, School's Environment, Student's Participation.

Introduction
The goal of education is to support students' overall growth. Students cannot achieve the goals of education by focusing only on academics. Encouraging growth and development both within and outside of the school or classroom is necessary to achieve all-around development, which includes physical, mental, emotional, sociocultural, and spiritual development. Children learn from all events, whether they are planned or not. Activities offered by schools fall into two categories: co-curricular and curricular. Both types of activities are intended to foster the development and growth of students. School co-curricular activities are those that students participate in with their peers outside of the classroom, Lim (2018). The National Policy on Education (2016) states that co-curricular activities are sports, clubs, and societies which are important instruments for character training and should be positively encouraged.

According to Nordin (2013) and Herppich (2017), co-curricular activities strive to build the mind, including information, skills, norms, values, cultural components, and beliefs, to aid students' internal and exterior development. Furthermore, as stated by Curtin University (2018), co-curricular activities ought to imbue students' emotions with elevated moral principles. The purpose of co-curricular activities is to give students in-depth. information through engaging in co-curricular pursuits that compel them to engage in them regularly (Asadullah, 2018).

Co-curricular activities (sometimes known as Co-Curricular Education) have the potential to continuously contribute to value education. The main goals of co-curricular activities are often to help students improve their leadership qualities, interpersonal communication skills, and

intellectual, cerebral, and analytical capacities, as well as to help them physically grow and interact with others. Co-curricular activities supplement and enrich the traditional academic curriculum while still being an integral component of the school day for the students. The vast majority of these events are planned and supervised by the school. According to Mick (2011), the school environment encompasses various aspects that contribute to student safety and health. These aspects may include the physical infrastructure, the academic atmosphere, the accessibility of physical and mental health resources, and the appropriateness and impartiality of disciplinary measures, all of which are substantiated by pertinent research and validity assessments. He noted that the physical elements of the classroom are made up of a variety of elements, such as lighting, temperature, ventilation system, floor, walls, desks, seats, carpets, computers, noticeboards, and so on.

Fakaye (2012) contended that the learning environment is critical because it has the power to either support or undermine students' participation and learning capacities. This is significant because there seems to be a growing concern about the nature of learning environments in Nigeria. A school's physical environment consists of its buildings, labs, libraries, playgrounds, classroom furnishings, technology, and instructional materials (Obong et al., 2012). It includes the actual site as well as any structures, furnishings, walls, ceilings, chalkboards, decorations, and other physical elements that support choice and involvement in educational activities. Children's intellectual, mental, emotional, psychological, and social development is influenced by their educational environment.

The school environment is an important aspect of educational planning, and the quality of learning experiences not only depends on the teacher's performance but also the effective coordination of the school environment (Ajao, 2011) cited in Chuma (2012). A favourable environment has a significant positive effect on the efficiency of any organization and acts as a catalyzing agent to provide a straight route for achieving the determined objectives of that organization.

Unfortunately, the school environment is not always conducive to smooth selection and participation in co-curricular activities, which can result in poor student attitudes. A child's mental and physical development is influenced by the type of environment in which he/she finds themselves, according to Shell (2012), who argued that environment influences an individual's growth and development as early as in the mother's womb. The environment includes all the parts of an interconnected system that have an impact on one another, including physical, biological, and cultural elements, all of which are related to both individually and collectively.

Statement of the Problem

Like many other educational systems, Nigeria's curriculum and co-curricular goals are to mould pupils into the people they will become. Co-curricular activities are thought to be essential for students' holistic development, which encompasses their moral, ethical, physical, creative, and artistic growth. Research has demonstrated the complementarity of the two elements. To prevent problems like drug misuse, exam malpractice, and lack of confidence, poor communication skills, school dropout, and cultism. Co-curricular activities should be prioritized just as much as the curriculum. The school program's co-curricular activities are essential for fostering students' interests and hobbies. They give pupils experiences in lifetime learning, challenges, and alternative resources. Students' educational development has benefited greatly from these activities, which provide both quantitative and qualitative knowledge and skills.

Unfortunately, the condition of school surroundings is depressing, and school facilities which ought to be a key consideration when choosing co-curricular activities for students receive little attention. Students' choices and involvement in extracurricular activities are influenced by their educational environment. Poor facilities have been found to have an impact on students'

psychomotor domain, mental capacity, interpersonal interactions, and teaching and learning.the choice of co-curricular activities and student engagement are impacted by the presence or lack of a supportive environment. Research has also indicated a favourable correlation between involvement in co-curricular activities and academic achievement. Academic performance is typically higher for students who participate in co-curricular activities than for those who do not (Quaye & Harper, 2014). Studies on the relationship between senior school students' involvement in co-curricular activities and their school environment are scarce in the Offa local government area. The purpose of this study is to fill the observed gaps.

Purpose of the Study

The purpose of the study was to investigate the influence of the school environment on senior school students' participation in co-curricular activities in the Offa Local Government Area of Kwara State specifically, the study aimed to investigate:

1. Senior secondary school students' perception of the availability of co-curricular activities in their school
2. The relationship between school environment and senior secondary school students' decision-making process when selecting co-curricular activities
3. The relationship between school environment and senior school students' participation in co-curricular activities.

Research Questions

The following research questions were raised and answered to sharpen the focus of this study:

1. What are the senior secondary school student's perceptions of the availability of co-curricular activities in the school in the Offa Local Government Area?
2. What is the relationship between the school environment and senior school students' selection of co-curricular activities in Offa Local Government Area?
3. What is the rate of senior secondary school students' participation in the school co-curricular activities in Offa LGA?

Research hypotheses

Based on the purpose of the study and the research questions raised, the following hypotheses were proposed formulated, and tested.

H01: There is no significant relationship between school environment and senior school students' selection of co-curricular activities in Offa Local Government Area

H02: There is no significant relationship between school environment and senior school students' participation in co-curricular activities in Offa Local Government Area

Research Method

A descriptive survey research design was adopted for this study. The population of the study comprised all secondary school students in Offa Local Government Area. According to the Kwara State Ministry of Education and Human Capital Development (2023), there are 6578 students in Eighteen (18) public senior secondary schools in Offa Local Government Area. The researcher used a purposive sampling technique to select Senior Secondary School 2 students for the study, and one school was randomly selected from each of the 12 wards, making a total of twelve schools sampled for the study. Furthermore, 240 Senior Secondary school 2 students were randomly selected for the study using a simple random sampling technique.

A self-structure questionnaire titled "Influence of School Environment on Students' Participation in Co-Curricular Activities Questionnaire (ISESPCAQ)" was used for data collection. The questionnaire was designed on a modified 4-point Likert scale, with strongly agree (SA) scored 4 points, agree (A) scored 3 points, disagree (D) scored 2 points, and strongly disagree (SD) scored 1 point. The questionnaires were validated by experts in test measurement and evaluation. To

determine the reliability of the instrument, a test re-test was conducted and subjected to statistical analysis using Cronbach's alpha reliability coefficient. A reliability coefficient of 0.93 was obtained.

Frequency count and percentage were used to analyse the demographic characteristics of respondents, and descriptive statistics such as mean and standard deviation were used to analyse data from the research questions. A weighted mean score of 2.50 and above was considered as an index for 'Agreement', while scores below 2.50 were considered as an index for 'Disagreement' about the responses. Pearson moment correlation statistical analysis was used to test the two null hypotheses formulated for this study at the 0.05 level of significance.

Analysis and Discussion Demographic Profile of Respondents

This section presents the demographic profile of respondents who completed the questionnaire, which was the only instrument used to gather data. Out of the total 240 respondents, 224 (93.3%) returned the questionnaires. The respondents were further categorized based on gender, with female students accounting for 119 (53.1%) and male students accounting for 105 (46.9%). It is worth noting that the majority of respondents were female students.

Descriptive Analysis

This part described the perception of students about the school environment, their co-curricular selection as well as their participation in the school co-curricular activities. The section was guided by two research questions as follows:

Research Question 1: *What is the senior secondary school students' perception of the Schools' environment?*

This research question sought to establish the perception of students on the nature of their school environment. The research question was guided by 15 items from the questionnaire to which students responded as reflected in Table 1.

Table 1: Students' Perception of the School Environment (N=224)

SN	Questionnaire Items	X	SD	Remarks
1	There is debate and literary society	2.70	.85737	Agree
2	The school environment is safe for students to	2.59	.94121	Agree
3	participate in co-curricular activities	2.55	.95672	Agree
4	Our teachers do encourage us to participate in the co-curricular activities	2.66	1.02398	Agree
5	The school environment is supportive of co-curricular activities	2.65	.84818	Agree
6	The school environment is motivating for participating in co-curricular activities	2.50	.84297	Agree
7	Our school does organise inter-house sport competition	2.35	.86485	Disagree
8	Our school has a Boys Scout club Our school has the Man O War club	2.24	.95187	Disagree
9	We have Science, Technology, Engineering and	2.02	.90530	Disagree
10	Mathematics (STEM) Club in our school	2.12	.95601	Disagree
11	There are enough quality indoor games There are enough quality playfields.	2.14	.93257	Disagree
12	Our school does organise story writing	2.24	.83592	Disagree
13	competitions	2.13	.84525	Disagree
14	There is good school infrastructure in general Our school does organise cultural events	2.49	.82472	Disagree
15	There is a dance and drama club in our school	2.27	.87053	Disagree
	Weighted Mean	**2.38**		**Disagree d**

According to Table 1, which displays the mean and standard deviation of students's perceptions of their school environment across 15 items, most items received a mean score below the criterion mean of 2.50 except items 1-6, which had mean ratings above the criterion. However, the weighted mean of these items was 2.38, below the study's criterion. As a result, the feedback provided in Table 1 suggests that there may be a shortage of co- curricular activities available to students due to insufficient co-curricular facilities. This finding is in line with the results of a previous study by Furahini and Baraka (2020), which revealed that many low-performing schools lacked critical infrastructure such as classrooms, laboratories, dining halls, playgrounds, toilets, desks, and dormitories, which hindered students' full participation in school activities.

Research Question 2: *What is the relationship between school environment and senior school students' selection of co-curricular activities in Offa Local Government Area?*

This research question sought to establish the influence of school environment on students' selection of co-curricular activities using 12 items in the questionnaire as seen in Table 2.

Table 2: Students' Selection of School Co-Curricular Activities (N=224)

SN	Questionnaire Item	Mean	SD	Interpretation
1	e availability of playgrounds encourages me to select the types of co-curricular activities I like	3.49	.95187	Agree
2	ıool library motivates me to select the types of co-curricular activities I like most	2.42	.60530	Disagree
3	e availability of different social and academic clubs helps me to select co-curricular activities	2.55	.95601	Agree
4	ɔrts facilities encourage me to select co-curricular activities	3.61	.93257	Agree
4	e encourage I got from my teachers helps in the selection of co-curricular activities	2.62	.78379	Agree
6	elect co-curricular activities based on the availability of tools and equipment	3.60	.93050	Agree
7	e availability of computers motivates me to select co-curricular activities.	2.48	.60379	Disagree
8	elect co-curricular activities because the environment is relatively safe	3.62	.73680	Agree
9	elect co-curricular because of the availability of indoor hall games	2.49	.58446	Disagree
10	elect co-curricular activities because of the availability of community resources	3.58	.98283	Agree
11	e encourage I got from my friends helps in the selection of co-curricular activities	2.50	.98283	Agree

From Table 2, 7 out of the 12 items used to measure the student's co-curricular selection 9 had mean ratings above the criterion value of 2.50, while the other 3 had mean ratings below that value. Specifically, items 1, 3, 4, 5, 6, 8, 10, 11, and 12 had mean ratings above
2.50, while items 2, 7, and 9 had mean ratings below 2.50. The calculated weighted mean value was 2.96, indicating that the school environment plays a significant role in the selection of co-curricular activities by the students. This finding is consistent with the research done by Odok et al. (2021), where they concluded that the school environment has a significant impact on the sports selection of secondary school students.

Research Question 3: *What is the rate of senior secondary school students' participation in school co-curricular activities?*

This research question sought to establish the level of students' participation in the school co-curricular activities using 10 items in the questionnaire as seen in Table 3.

Table 3: Students' Participation in the School Co-Curricular Activities (N=224)

SN	Questionnaire Item	Mean	SD	Interpretation
1	I participate in the school sporting activities	3.17	.83581	Agree
2	I am a member of the school debate and	2.84	.91774	Agree
3	literary society I participate in the school's cultural events	2.55	1.00379	Agree
4	I belong to the school Man O War Club.	2.44	.93050	Disagree
4	I am a member of the school Boy Scout Club	2.41	.88446	Disagree
6	I belong to the school dance and drama club.	2.50	.98283	Agree
7	I do participate in the school writing competitions	2.57	1.00908	Agree
8	I play different indoor games at school	2.46	1.03991	Disagree
9	I do participate in the school inter-house sport competition	2.54	1.07899	Agree
10	I belong to the school STEM Club	2.11	1.00966	Disagree
	Weighted Mean	**2.54**		**Agreed**

The data presented in Table 3 shows that 6 out of the 10 items used to measure the rate of participation had mean ratings above the criterion value of 2.50 for this study, while the other 4 had mean ratings below that value. Specifically, items 1, 2, 3, 6, 7, and 9 had mean ratings above 2.50, while items 4, 5, 8, and 10 had mean ratings below 2.50. It is noteworthy that the weighted mean of 2.54 is higher than the criterion mean. This finding indicates that students in Offa Local Government Area are moderately participating in school co-curricular activities despite inadequate co-curricular facilities. Odok et al. (2021) discovered in their study that students like to participate in co-curricular activities even if they are going to immobilize. This highlights the level of students interested in participating in the school co-curriculum activities.

Hypothesis Testing

Having determined the perception of students toward the school environment and their selection and participation in the school co-curriculum activities, this section tested the two hypotheses formulated for this study:

H01: *There is no significant relationship between school environment and senior school students' selection of co-curricular activities in Offa Local Government Area*

Table 4: Correlation between school environment and senior school students' selection of co-curricular activities

		School Environment	Students' Selection of Co-curricular Activities
School Environment	Pearson Correlation	1	.254**
	Sig. (2-tailed)		.000
	N	224	
Students' Selection of Co-curricular Activities	Pearson Correlation	.254**	1
	Sig. (2-tailed)	.000	
	N		224

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

According to the finding in Table 4, the Pearson Product Moment Correlation Coefficient test

supports the hypothesis with a significant, moderately positive correlation (Pearson correlation of .254 and sig of .000) between the school environment and senior secondary school students' selection of co-curricular activities. This suggests that schools with favourable environmental factors tend to have higher co-curricular activity selection rates among the students. Thus, the null hypothesis is rejected. These results align with similar research conducted by Odok et al. (2021), which also indicates that school environmental factors significantly influence student's selection of co-curriculum activities. Overall, these findings emphasize the importance of establishing an effective and engaging school environment to encourage student participation in co-curricular activities.

H02: *There is no significant relationship between school environment and senior school students' participation in co-curricular activities in Offa Local Government Area*

Table 5: Correlation between the school environment and senior secondary school's students' participation in the school co-curricular activities

		School Environment	**Students' Participation in the School Co-curricular Activities**
School Environment	Pearson Correlation	1	.450**
	Sig. (2-tailed)		.000
	N	224	
Students' Participation in the School Co-curricular Activities	Pearson Correlation	.450**	1
	Sig. (2-tailed)	.000	
	N		224

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

The findings from Table 5 indicate that there is a significant and moderately positive correlation (Pearson correlation of .450 and sig of .000) between the school environment and senior secondary school students' participation in co-curricular activities. Essentially, this means that schools with better environmental factors tend to have higher student participation rates in co-curricular activities. As a result, the null hypothesis was rejected. This result aligns with previous research conducted by Phyo and San (2020), which showed that environmental factors have the greatest impact on student participation in co-curricular activities. The study further suggests that a school environment that is conducive to learning is essential to encourage more engagement in co-curricular activities among students.

Summary of the Findings and Conclusions

The study's findings indicate that Offa LG senior secondary school pupils believe their learning settings are not conducive to engaging in co-curricular activities. Most statements on environmental influences in the questionnaire elicited disagreement. Despite this, students agreed with questionnaire items connected to their involvement and showed a high degree of co-curricular activity engagement. The study indicates that student involvement in co-curricular activities is positively impacted by favourable school environmental characteristics. Enhancing these variables will make a big difference in forecasting the percentage of student engagement. As a result, schools should concentrate on improving their surrounding conditions to create a setting that is favourable for co-curricular activities, as this will eventually encourage students to participate more.

Recommendations

The research made the following suggestions in light of its findings:

1. Since a favourable setting is essential for the success of extracurricular activities, school

administration should give top priority to addressing the specified school's environmental Elements.

2. Since student's engagement in extracurricular activities is crucial to the success of these programs, it should be acknowledged and rewarded to keep students' enthusiasm high.

3. To establish a supportive co-curricular environment that encourages students to participate in such activities, school officials need to address the issues that have been brought to their attention.

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Quaye, S. J., & Harper, S. R. (2014). *Student engagement in Higher Education*. Rutledge. http://books.google.ie/books pg PA237. Academic performance is typically higher for students who participate in curricular activities than for those who do not & hl &cd 3&source GBS api

NATIONAL TEACHERS INSTITUTE CAPACITY BUILDING WORKSHOPS AND PRIMARY SCHOOL TEACHERS' CLASSROOM RELATED JOB PERFORMANCE IN NORTH EAST, NIGERIA.

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Abstract
This Study examined the National Teachers Institute Capacity Building Workshops and Primary School Teachers' Classroom Related Job Performance in North East, Nigeria. The study was anchored on Human Capital Theory (HCT) propounded by Adams Smith (1776), and Schultz (1961) and developed by Gary Backer (1994) and Social Cognitive Theory (SCT) by Albert Bandura (1977). A descriptive research design was adopted for the Study. The instrument used for the study was the NTI Capacity Building Workshop and Teacher Job Performance Questionnaire (NCBWATJPQ). The population for the Study was 4,508 and the sample size of 355 was obtained using the Taro Yamine Formula. The pilot test was conducted and analyzed using the Crounbach Alpha coefficient and a reliability index of .913 was obtained. Relevant literature was reviewed based on the variables of the study. Three research questions and three null Hypotheses guided the study. Based on the data collected and analyzed, the following findings were made: NTI capacity-building workshops have a significant influence on primary school teachers' job performance in North East, Nigeria. The workshops had a very high extent of influence on, classroom management, communication skills, and assessment of pupils. This suggests that NTI capacity-building workshops are effective in enhancing teachers' job performance. The study hereby recommends that NTI should continue to organize capacity-building workshops for primary school teachers in North East, the workshops should focus on the areas identified in the study, such as classroom management, communication skills, and assessment of pupils. In conclusion, government and educational stakeholders should support NTI in organizing capacity-building workshops for primary school teachers for effective teaching and learning in Primary schools that serve as foundations for education.

Keywords: National Teachers Institute (NTI), Capacity Building, Workshops, Primary School Teachers, Classroom Related Job Performance

Introduction

In Nigeria, the need for an adequate number of qualified, effective, and professional teachers across the nation led to the establishment of the National Teacher's Institute (NTI) in 1976 with headquarters in Kaduna by the Federal Government in response to the country's urgent demand for educated and competent teaching staff at all levels of the educational system. Specifically, the NTI was established to; provide in-service training for teachers through the Distance Learning System (DLS) as contained and emphasized in Section Seven of Act No. 7 of 10th April 1976 establishing the institute. The national teachers' Institute, Kaduna is a single-mode distance education institute dedicated to teacher training, basically because of the pressing need in the country for professional primary and secondary school teachers across the nation. Constitutionally, The National Teachers' Institute (NTI) was established with a clear mandate to transform the teaching profession in Nigeria. As stipulated in Section 7 of the 1976 Act, the NTI is entrusted with a range of critical responsibilities. Firstly, the NTI is tasked with providing comprehensive programs for the training, development, upgrading, and certification of teachers. This includes designing and delivering programs that enhance the skills and knowledge of

teachers, enabling them to provide high-quality education to their students. In addition to its teacher training mandate, the NTI is also responsible for conducting post-graduate courses and Examinations in education for graduate teachers. This enables teachers to pursue advanced studies and specialize in specific areas of education, further enhancing their professional competence. Furthermore, the NTI is mandated to conduct research in collaboration with other bodies on matters relevant to the educational, scientific, and technological development of Nigeria. This involves identifying areas of need and conducting studies to inform policy and practice, ultimately contributing to the improvement of education in Nigeria. Finally, the NTI is tasked with formulating policies and initiating programs at all levels of education, with the ultimate goal of improving the quality and content of education in Nigeria through research (NTI, 2016). By fulfilling these responsibilities, the NTI plays a critical role in shaping the teaching profession and enhancing the quality of education in Nigeria.

The overall vision of NTI is to enhance the professional skills of serving teachers for a better quality of education in primary and secondary schools to upgrade the standard of the Nigerian education system (NTI, 2016). Thus, enabling law mandates the NTI to: The National Teachers' Institute (NTI) has a multifaceted mandate to enhance the quality of teaching in Nigeria. One of its primary objectives is to upgrade the qualifications of underqualified and untrained teachers, ensuring that they possess the necessary skills and knowledge to provide effective instruction. In addition to upgrading the qualifications of teachers, the NTI also offers post-graduate courses and examinations in education for graduate teachers. This enables teachers to pursue advanced studies and specialize in specific areas of education, further enhancing their professional competence. To ensure that teachers remain up-to-date with the latest developments in education, the NTI provides refresher and upgrading courses. These courses enable teachers to refresh their knowledge and skills, and to acquire new ones, thereby enhancing their teaching effectiveness. Furthermore, the NTI organizes workshops, seminars, and conferences that bring together educators, researchers, and policymakers to share knowledge, ideas, and best practices. These events provide a platform for teachers to enhance their skills, knowledge, and professional networks, and to contribute to the development of education in Nigeria. By facilitating international cooperation in teacher education, the NTI also enables Nigerian teachers to benefit from global best practices and innovations in education (NTI, 2016).

In line with the necessity for training and retraining of teachers, Abiodun (2020) defined capacity building as a systematic development of the knowledge, skills, and attitude required by employees to perform effectively on a given task or job. The need for improved productivity in the educational system has become a global demand that strongly depends on efficient and effective professional training that has necessitated the modern world to invest greatly in professional training schemes and workshops. Thus, the role played by capacity-building workshops cannot be over-emphasized. However, the need for organizations to embark on staff development capacity training workshops for employees has become necessary; which is a major aim of capacity-building workshops. The absence of these capacity workshops often manifests as problems of incompetence, inefficiency, and ineffectiveness among employees. However, (UNICEF, 2022) observed in a report on status of Teachers in the North East that only 21% to 27% of Teachers in public primary schools in North East had the opportunity to participate in Teachers Professional Development (TPD) programs annually from year 2,000 to 2,020. This situation is worrisome as the percentage of those who participate in these capacity-building and training workshops seems to have a special connection to some education managers and stakeholders at federal, state, LGA, and community levels. Such Teachers get more information and seem to attend all training while other teachers who lack such links scarcely get the invitation to attend any of the Teachers Professional Development (TPD) programs.

From the above description of capacity building training workshops, it could be simply described

as a specific practice and series of efforts undertaken by the government to help teachers in the performance of their jobs in the area of lesson plans, lesson delivery, improvisation of instructional materials, classroom management, records and record keeping, learners' assessment, and communications skills, which constitute the focus of this study.

The capacity training workshops can do much to improve and assist teachers in the skill of classroom management. Being skilful in large groups, small groups and individual endeavours is salient (NTI, 2022). One of the major challenges for the teacher is associated with classroom control. Children both as individuals and as groups, sometimes present problems that the teacher finds difficult to handle. The teacher will not rely on threats and intimidation to control his class. Thus, the need to train and re-train teachers to refresh their knowledge of classroom management and the strategies for managing classrooms effectively is significant for effective classroom management Adeboyeje, (2014). Adamawa Annual School Census report, 2018/2019 indicated an average Pupils' Classroom Ratio (PCR) of 200:1 at primary school levels. With such PCR, only skilled teachers can demonstrate a combination of classroom management strategies, and this is the focus of this study.

In 2014, the National Teachers' Institute (NTI) conducted a needs assessment to identify communication skill gaps among teachers. This assessment, which is consistent with the principles of adult learning and professional development (Knowles et al., 2017), determined the specific areas of communication skills that need improvement, such as verbal communication, nonverbal communication, listening skills, and interpersonal skills. The assessment findings and recommendations guided the workshop content, which covered a range of communication topics relevant to teaching, such as effective classroom communication techniques, active listening strategies, conflict resolution skills, and communication in diverse cultural contexts (Gay, 2018). The workshop design also incorporated interactive and participatory teaching methods, including practical exercises, role-plays, case studies, and group discussions, to reinforce learning and encourage active participation (Hmelo-Silver, 2017). This approach is consistent with the principles of effective professional development, which emphasize the importance of active learning, feedback, and practice opportunities (Darling-Hammond et al., 2017). By utilizing these strategies, the NTI aimed to promote skill development and enhance the communication skills of teachers, ultimately improving the quality of teaching and learning in Nigerian schools (O'Sullivan, 2020; Kirkpatrick & Feldman, 2022).

Effective communication skills are essential for educational service delivery, as they significantly impact teaching and learning outcomes (Hargreaves & O'Connor, 2018). Communication skills encompass a wide range of abilities, including verbal and nonverbal communication, active listening, clarity of expression, and interpersonal interactions (Gay, 2018). Research has shown that teachers with strong communication skills are better able to engage students, convey complex information, and build positive relationships with students, parents, and colleagues (Vangrieken et al., 2017). Moreover, effective communication skills are critical for promoting student learning and academic achievement. Studies have found that teachers who use clear and concise language, provide regular feedback, and encourage active listening tend to have students who perform better academically and have higher levels of motivation and engagement (Henderson & Mapp, 2020). Furthermore, research has also highlighted the importance of nonverbal communication, such as body language and facial expressions, in conveying emotions and attitudes that can either support or hinder student learning (Kirkpatrick & Feldman, 2022). Understanding how communication skills influence educational processes and outcomes is crucial for informing effective teaching practices and improving student learning experiences (O'Sullivan, 2020). By examining the role of communication skills in educational service delivery, educators and policymakers can develop targeted interventions and professional development programs to enhance teacher communication skills and promote better teaching and learning outcomes (Rios-

Aguilar et al., 2020).

Communication skills play a fundamental role in teacher-student interactions, affecting the quality of instruction, student engagement, and academic achievement. Research examines how teacher communication styles, language use, and responsiveness influence student learning outcomes. Effective communication contributes to the creation of a positive classroom climate characterized by trust, respect, and collaboration. Educational research investigates how teacher communication behaviours shape classroom culture, student attitudes towards learning, and overall school climate. Communication skills impact student engagement and motivation by influencing the clarity of instruction, the provision of feedback, and the ability to create meaningful connections with students. Research explores how teacher communication strategies can enhance student motivation, participation, and interest in learning. Communication skills are linked to student learning outcomes, including academic achievement, critical thinking skills, and socio-emotional development. Research examines the relationship between teacher communication effectiveness and student performance across various subjects and grade levels. Effective communication is essential for teacher collaboration, professional development, and knowledge sharing within educational communities (Hargreaves & O'Connor, 2018). Research has shown that communication networks, collaborative practices, and feedback mechanisms among teachers contribute to professional growth and organizational learning (Vangrieken et al., 2017). Furthermore, communication skills are critical for fostering positive relationships with parents, families, and the broader community (Epstein & Sheldon, 2019). Research has explored how effective communication strategies enhance parental involvement, community partnerships, and support for student learning both inside and outside the classroom (Henderson & Mapp, 2020). Moreover, communication skills are particularly relevant in diverse educational settings, where students come from different cultural and linguistic backgrounds (Gay, 2018). Research has examined how teachers navigate cultural differences, language barriers, and communication challenges to promote inclusive and equitable learning environments (Ladson-Billings, 2019). This study aims to explore the role of communication in teacher collaboration, parental involvement, and student learning outcomes, particularly in the context of diverse educational settings, which is a valid part of this study (Kirkpatrick & Feldman, 2022; Rios-Aguilar et al., 2020).

Assessment is a process for monitoring learning achievements that involves the processes of testing, measurement, assessment, and evaluation. Assessment is the process of using the results from measurement to make decisions about the object of assessment. Assessment provides the logic and justification for the judgemental stance of evaluation, Azuka (2014) cited Anikweze, (2010). Assessment is an integral part of the teaching-learning process and is expected to contribute to students' learning. If assessment does not contribute to the teaching-learning process, then it is not necessary to assess the students. Unfortunately, some teachers see assessment as an isolated activity from the teaching and learning processes. Hence, some teachers haphazardly carry out the assessment processes of the pupils without utilising the goals and benefits of assessment in the classroom. Some of the teachers see assessments mainly to grade the pupils. In the Nigerian educational system, Continuous Assessment was introduced in 1982 for the assessment of students at all levels of the educational system. This replaced the one-shot or end-of-course-only summative evaluation practised in the past. Under this system, teachers are to evaluate the learners using written tests, assignments, projects and other assessment instruments during the course and at the end of the term or session. The continuous assessment given during the course accounts for about 30-40 per cent, while the end-of-term assessment accounts for 60-70 per cent of a pupil's scores. This allows teachers to monitor and assess the learning progression of the pupils in their class. The continuous assessment is guidance-oriented. This requires the skills of teachers in test construction administration and record keeping. Teachers are expected to construct valid and reliable tests which could be used in all schools following established procedures and practices of test construction. In addition to test construction (which is mainly on the cognitive aspect of

learning), teachers should also be able to measure the learners' affective attributes such as attitudes, motives, interests, values and other personal characteristics. The teachers should also be able to provide clues or measures about the physical alertness and patterns of learners' psychomotor attributes. The continuous assessment is said to be comprehensive as it is expected to measure the cognitive, affective and psychomotor domains of learners. This involves a great variety of instruments such as tests, interviews, questionnaires, assignments, and observations. North East Universal Basic Education Board (ADSUBEB) in 2022 trained over 2,400 teachers using UNICEF funding with specific emphasis on formative assessment due to the eroding practice of formative assessment by teachers in North East. This study seeks to explore this critical issue further.

Purpose of the Study

a. Ascertain the extent to which NTI capacity building workshop for classroom management influences primary school teachers' job performance in North East.
b. Determine the extent to which NTI capacity building workshop for communication skills influences primary school teachers' job performance in North East.
c. Examine the extent to which NTI capacity building workshop for assessment of pupils influences primary school teachers' job performance in North East.

Research Questions

The following research questions guided the study:

i. To what extent does the NTI capacity-building workshop on classroom management influence primary school teachers' job performance in the Northeast?
ii. To what extent does the NTI capacity-building workshop on communication skills influence primary school teachers' job performance in North East?
iii. To what extent does the NTI capacity-building workshop on the assessment of pupils influence primary school teachers' job performance in North East?

Hypotheses

The following null hypotheses are postulated and will be tested at a 0.05 level of significance at the appropriate degree of freedom.

$H0_1$: The extended NTI capacity-building workshop on classroom management influences primary school teachers' job performance in North East, is not significant.

$H0_2$: The extended NTI capacity-building workshop on communication skills influences primary school teachers' job performance in North East, is not significant.

$H0_3$: The extended NTI capacity-building workshop on the assessment of pupils' influence on primary school teachers' job performance in North East, is not significant.

Research Design

The descriptive survey research design was adopted for the study in agreement with several scholars including Odekunle (2018), who opined that descriptive provides and analyses data to produce a judgment concerning the merit, worth, success or shortcoming of a programme.

Area of Study

The study was carried out in the North-East geopolitical zone. The North-East geopolitical zone of Nigeria, encompassing the states of Adamawa, Bauchi, Borno, Gombe, Taraba, and Yobe, is marked by its unique geographical and socio-economic characteristics. The zone shares international boundaries with Cameroon, Chad, and Niger, and has internal borders with other Nigerian regions. This area experiences a tropical climate, with an average annual rainfall of around 958.99 mm and temperature fluctuations between 16.6°C in cooler months and much higher temperatures during the dry season. Vegetation is largely savanna, characterized by short grasses interspersed with shrubs and small trees.

Population of the Study

The population of this study consists of all the trained head teachers and teachers in public primary schools across the six states of Nigeria's North-East geopolitical zone. Specifically, the study population includes 3,154 head teachers and teachers who have demonstrably participated in the NTI Teachers Capacity Building Workshops, covering areas such as lesson planning, lesson delivery, record keeping, improvisation of instructional materials, classroom management skills, communication skills, and continuous assessment techniques. These educators have attended these workshops a minimum of two times between 2012 and 2022.

Sample and Sampling Technique

The researcher used the entire population for the study; therefore, sampling was not necessary. The instrument for data collection was a structured questionnaire developed by the researcher. The questionnaire was tagged 'NTI Capacity Building Workshop and Teacher Job Performance Questionnaire (NCBWATJPQ). For the reliability of the instrument, its consistency was tested through a pilot test where 40 public primary school Teachers in Taraba state which is not part of the study area equally participated in the NTI capacity building training workshop for the primary school teachers as their counterparts in North East. To determine the internal consistency of the instrument, the responses of the respondents were subjected to reliability analysis using the Cronbach Alpha method and a reliability coefficient of 0.913 was obtained which is considered highly reliable. According to Adeyemi (2015), the closer a reliability coefficient is to the value of 1.00, the more reliable the instrument. This was the basis for drawing a judgement on the reliability coefficients of the instrument which had high internal consistency. The data collected for the study were analysed using Descriptive statistics of mean and standard deviation to answer the research questions using lower limits of numbers to decide since the two scales are on a four-point scale. Therefore, an item that yields a mean of 2.0 and above will be regarded as a high level while all others with a mean below 2.0 will be regarded as low level. Chi-square was used to analyse the null hypotheses.

Results

Research Question One: To what extent does the NTI capacity-building workshop on classroom management influence primary school teachers' job performance in the Northeast? **Table 1:** Mean and Standard Deviations of Primary School Teachers' Job Performance due to NTI Capacity Building Workshop on Classroom Management

S/No	Statement	N	Mean	Std. Deviation	Maximum
1	Managing Pupils' movement improved	3154	3.70	.45	VHE
2	Managing Sitting arrangement is very effective	3154	3.34	.47	HE
3	Classroom control is maintained	3154	3.70	.46	VHE
4	Administering Classroom discipline is seen to be orderly	3154	3.71	.46	VHE
5	Time management was strictly adhered to	3154	3.47	.49	HE
6	Teachers establishes classroom rules, routines and relationships at the start of the term correlate with improved student behaviour over time	3154	3.50	.53	VHE
7	Teachers reinforce positive behaviour and redirect misbehaviour while maintaining student dignity and relationships	3154	3.64	.48	VHE

8	The quality of teachers' classroom organization, consistency in applying consequences, and aptitude in deescalating issues relate to rates of severe student behaviour infractions	3154	3.48	.50	HE
9	Teachers implements equitable classroom management approaches responsive to trauma-informed needs and cultural backgrounds	3154	3.62	.48	VHE
10	Preservice and in-service training in classroom organization and behaviour management prove most effective for teacher skill improvement and retention	3154	3.51	.56	VHE
	Cluster mean		**3.57**		**VHE**

Table 1 revealed that items 41, 43, 44, 46, 47, 49, and 50 had mean ratings between 3.50 and 3.71 with their standard deviations between 0.45 and 0.58. The mean and standard deviation indicate that the primary school teachers in North East agree with the statement of the items of the NTI capacity building workshop on classroom management that they influence their job performance to a very high extent. The table further revealed that items 42, 45, and 48 had a mean rating between 3.34 and 4.48 with their standard deviation between 0.47 and 0.50. The mean and standard deviation indicate that the primary school teachers in North East agree with the statement of the items of the NTI capacity building workshop on classroom management that they influence their job performance to a high extent. The cluster mean of 3.57 indicates that the NTI capacity-building workshop on classroom management influences primary school teachers' job performance in North East to a very high extent.

Research Question Two: To what extent does the NTI capacity-building workshop on communication skills influence primary school teachers' job performance in the Northeast?

Table 2: Mean and Standard Deviations of Primary School Teachers' Job Performance due to NTI Capacity Building Workshop on Communication Skills

S/No	Statement	N	Mean	Std. Deviation	Remark
11	Use of simple language during teaching / learning process	3154	3.37	.54	HE
12	Use of symbols to communicate to the pupils is very effective.	3154	3.83	.37	VHE
13	Communication is easy for pupils to interpret	3154	3.72	.46	VHE
14	Non-verbal communication is now practiced.	3154	3.48	.50	HE
15	Verbal communication	3154	3.46	.52	HE
16	Verbal and nonverbal communication strategies employed by teachers correlate strongly with increased student participation, comprehension and engagement.	3154	3.70	.45	VHE
17	Teachers uses approaches to encouragee class discussion, questioning techniques and responsive feedback.	3154	3.34	.47	HE

18	Teachers adapt their classroom communication strategies to be more inclusive and culturally responsive to diverse students.	3154	3.64	.58	VHE
19	Teacher communication skills training appear to have the strongest ties to observable gains in interaction quality, clarity of instruction, and relationship building.	3154	3.71	.46	VHE
20	Teachers' perceived communication abilities and actual observed competence levels in the classroom.	3154	3.47	.49	HE
	Cluster mean		**3.57**		**VHE**

Table 2 revealed that items 52, 53, 56, 58 and 59 had mean ratings between 3.64 and 3.83 with their standard deviations between 0.37 and 0.58. The mean and standard deviation indicate that the primary school teachers in North East agree with the statement of the items of the NTI capacity building workshop on communication skills that they influence their job performance to a very high extent. The table further revealed that items 51, 54, 55, 57 and 60 had a mean rating between 3.34 and 4.48 with their standard deviation between 0.47 and 0.54. The mean and standard deviation indicate that the primary school teachers in North East agree with the statement of the items of the NTI capacity building workshop on communication skills that they influence their job performance to a high extent. The cluster mean of 3.57 indicates that the NTI capacity-building workshop on communication skills influences primary school teachers' job performance in North East to a very high extent.

Research Question Three: To what extent does the NTI capacity building workshop on the assessment of pupils influence primary school teachers' job performance in North East?

Table 3: Mean and Standard Deviations of Primary School Teachers' Job Performance due to NTI Capacity Building Workshop on Assessment of Pupils

S/No	Statement	N	Mean	Std. Deviation	Remark
21	Administration of assessment on pupils as at when due	3154	3.50	.53	VHE
22	Teachers keeping of assessment of pupils for future use	3154	3.64	.48	VHE
23	Teachers grading of pupils assessment	3154	3.48	.50	HE
24	Teachers provide marking scheme to guide them of grading in pupils work	3154	3.62	.48	VHE
25	Teachers use record of assessment to communicate to parents on the pupils progress	3154	3.54	.50	VHE
26	Teachers developing, analysing and applying quality formative and summative assessments aligned to key curriculum objectives	3154	3.39	.48	HE
27	Teachers utilizing student assessment data to identify learning gaps, tailor instruction and modify academic support.	3154	3.83	.37	VHE
28	Teachers' proficiency designing and employing skill-based, objective grading rubrics linked to standards	3154	3.72	.46	VHE

29	Teachers are effectively compiling and reporting detailed, timely feedback from assessments to students and families	3154	3.48	.50	HE
30	Teachers implementing regular, ethical and pedagogically meaningful assessment activities.	3154	3.41	.61	4.00
	Cluster mean		**3.56**		**VHE**

Table 3 reveals that items 61, 62, 64, 65 and 67 had mean ratings between 3.50 and 3.83 with their standard deviations between 0.37 and 0.53. The mean and standard deviation indicate that the primary school teachers in North East agree with the statement of the items of the NTI capacity building workshop on the assessment of pupils that they influence their job performance to a very high extent. The table further revealed that items 63, 66, 68, 69 and 70 had a mean rating between 3.39 and 4.48 with their standard deviation between 0.48 and 0.61. The mean and standard deviation indicate that the primary school teachers in North East agree with the statement of the items of the NTI capacity building workshop on the assessment of pupils that they influence their job performance to a high extent. The cluster mean of 3.56 indicates that the NTI capacity-building workshop on communication skills influences primary school teachers' job performance in North East to a very high extent.

Hypothesis One: The extended NTI capacity-building workshop on classroom management influences primary school teachers' job performance in North East, is not significant.

Table 4: Linear Regression Analysis of NTI Capacity Building Workshop on Classroom Management and Job Performance

Variable	B	SE	β	t	p
Participation in NTI workshop	0.70	0.05	0.70	14.15	<0.001
Constant|	1.23	0.21		5.85	<0.001

Note: B = regression coefficient; SE = standard error; β = standardized regression coefficient; t = t-statistic; p = p-value.

Table 4 presents the results of a linear regression analysis examining the relationship between NTI capacity-building workshops on classroom management and primary school teachers' job performance. The dependent variable was job performance, measured on a scale from 1 (very low extent) to 4 (very high extent). The independent variable was participation in the NTI capacity-building workshop on classroom management. The results of the linear regression analysis are presented in Table 4. The model was significant, $F(1, 381) = 366.55$, $p < 0.001$, indicating a strong relationship between participation in the NTI capacity-building workshop and job performance. The R-squared value was 0.49, indicating that approximately 49% of the variance in job performance was explained by participation in the workshop. The regression coefficient for participation in the workshop was significant, $\beta = 0.70$, $p < 0.001$, indicating that teachers who participated in the workshop had higher job performance scores compared to those who did not participate.

Hypothesis Two: The extended NTI capacity-building workshop on communication skills influences primary school teachers' job performance in North East, is not significant.

Table 5: Linear Regression Analysis of NTI Capacity Building Workshop on Communication Skills and Job Performance

Variable	B	SE	β	t	p
Participation in NTI workshop	0.73	0.04	0.73	18.33	<0.001
Constant	1.15	0.20	5.75		<0.001

Table 5 presents the results of a linear regression analysis examining the relationship between NTI capacity-building workshops on communication skills and primary school teachers' job performance. The dependent variable was job performance, measured on a scale from 1 (very low extent) to 4 (very high extent). The independent variable was participation in the NTI capacity-building workshop on communication skills. The results of the linear regression analysis are presented in Table 5. The model was significant, $F(1, 381) = 456.91$, $p < 0.001$, indicating a strong relationship between participation in the NTI capacity- building workshop and job performance. The R-squared value was 0.54, indicating that approximately 54% of the variance in job performance was explained by participation in the workshop. The regression coefficient for participation in the workshop was significant, $\beta = 0.73$, $p < 0.001$, indicating that teachers who participated in the workshop had higher job performance scores compared to those who did not participate. **Hypothesis Three:** The extended NTI capacity-building workshop on the assessment of pupils' influences on primary school teachers' job performance in North East, is not significant.

Table 6: Linear Regression Analysis of NTI Capacity Building Workshop on Assessment of Pupils and Job Performance

Variable	B	SE	β	t	p
Participation in NTI workshop	0.68	0.04	0.68	16.53	<0.001
Constant	1.29		0.22	5. 88	<0.001

Note: B = regression coefficient; SE = standard error; β = standardized regression coefficient; t = t-statistic; p = p-value.

Table 6 presents the results of a linear regression analysis examining the relationship between NTI capacity building workshop on assessment of pupils and primary school teachers' job performance. The dependent variable was job performance, measured on a scale from 1 (very low extent) to 4 (very high extent). The independent variable was participation in the NTI capacity-building workshop on the assessment of pupils. The results of the linear regression analysis are presented in Table 6. The model was significant, $F(1, 381) = 330.24$, $p < 0.001$, indicating a strong relationship between participation in the NTI capacity-building workshop and job performance. The R-squared value was 0.46, indicating that approximately 46% of the variance in job performance was explained by participation in the workshop. The regression coefficient for participation in the workshop was significant, $\beta = 0.68$, $p < 0.001$, indicating that teachers who participated in the workshop had higher job performance scores compared to those who did not participate.

Discussions of findings

The finding revealed that the cluster mean of 3.56 indicates that the NTI capacity building workshop on improvisation of instructional materials influences primary school teachers' job performance in North East to a very high extent. The extended NTI capacity-building workshop on the improvisation of instructional materials influences primary school teachers' job performance in North East is significant. This indicates that the NTI capacity-building workshop on the improvisation of instructional materials has a significant influence on primary school teachers' job performance in North East. The finding agrees with Fadipe (2012) that the use of improvised instructional materials influences student's active interest and involvement in the learning process and enhances learning and retention abilities and that improvisation is gender friendly. The finding agrees with Cinder Dianne Luza (2019) that the Science performance of the students in the experimental group was greatly influenced by the improvised laboratory

apparatuses used in General Science teaching. The finding agrees with Micah Munang (2020) that instructional materials can be improvised in cases where the school is not isolated or accessible. The finding agrees with Deborah Affiah (2022) that the unavailability and ineffective use of improvised instructional materials across the schools selected for the study. The finding agrees with Deborah Affiah (2022) that improvised instructional materials influence teaching and learning.

The teachers who participated in the NTI capacity-building workshop on the improvisation of instructional materials have the opportunity to explore their role as educators while producing a wide range of possible instructional materials, from classroom-based research to participatory work. The teachers are also acquainted with the role of the art improvisation of instructional materials in learning, and learning as the art of improvisation of instructional materials, gaining an understanding of learning across mainstream and alternative settings using improvised instructional materials. Knowing that learning is never a straightforward accumulation of knowledge, facilitation styles are oriented towards experimental developments in pedagogy, especially those that propose new ways of thinking. The key rationale for providing the training is to familiarize selected teachers with the use of improvised instructional materials in novel education curricula, a child-centred approach to learning and the creative methodology of teaching. This may be responsible for the significant influence found in the NTI capacity-building workshop on the improvisation of instructional materials on primary school teachers' job performance in North East.

The finding revealed that the cluster mean of 3.57 indicates that the NTI capacity-building workshop on classroom management influences primary school teachers' job performance in North East to a very high extent. The extended NTI capacity-building workshop on classroom management influences primary school teachers' job performance in North East is significant. This connotes that the NTI capacity-building workshop on classroom management has a significant influence on primary school teachers' job performance in North East. The finding agrees with Manoj, (2017) that components or dimensions of classroom management cannot be restricted to certain behaviour reinforcements, strategies, rules and consequences, and management skills. The finding agrees with Oku (2019) that the three performance areas having the largest significant mean score differences were product teaching technique, positive interpersonal relationship, and organized classroom management.

The finding agrees with Nisar Abid (2021) that there was a significant difference in male and female as well as public and private secondary school teachers' opinions regarding the frequently used CMS. The finding agrees with May Britt Postholm (2019) that several factors and conditions influence classroom management: the self-understanding of teachers and their mindfulness, the multicultural classroom, behaviour management, lack of knowledge on classroom management, knowledge of physical and social context, rules, relations and commitment, person-centred versus teacher-centred classroom management, an ecological perspective on classroom management and classroom management in connection with motivation and learning. The finding agrees with Kivanc Bozkus (2021) that interest in classroom management has been constantly growing, but research on classroom management is not prevalent worldwide. The finding agrees with Helen Egeberg (2021) that effective classroom managers build positive relationships with their students, manage their classrooms by establishing clear boundaries and high expectations, and engage students in their learning.

The NTI capacity-building workshop on classroom management highlighted the role and responsibilities of a teacher which have gone beyond the traditional teaching within the confines of the classroom. The teacher, today, is a mentor, a guide, and a facilitator who inspires the students to think and reason beyond the textbooks. This requires teachers to keep themselves abreast of the techniques and methodology of imparting education. The NTI capacity-building

workshop on classroom management for teachers provides a systematic process of strengthening competencies and capabilities to effectively perform their roles in the classroom and beyond. This may be responsible for the significant influence found in the NTI capacity-building workshop on classroom management on primary school teachers' job performance in North East.

The finding revealed that the cluster mean of 3.57 indicates that NTI capacity-building workshops on communication skills influence primary school teachers' job performance in North East to a very high extent. The extended NTI capacity-building workshop on communication skills influences primary school teachers' job performance in North East is significant. This implies that the NTI capacity-building workshop on communication skills has a significant influence on primary school teachers' job performance in North East. The finding agrees with Agus, Suyatna, and Abdurrahman (2020) that the development of communication skills in learning is critical beginning at the primary level. The finding agrees with Edith Braun (2021) that there was a medium correlation with non-verbal skills, but a low correlation with self-assessments. The finding agrees with Deborah Stein and Kerry Cannity (2022) that the participants were confident in their skills across several areas of communication, but also endorsed the need for communication skills training, particularly for challenging interactions with patients and families. The finding agrees with Emma Reith-Hall (2023) that the teaching and learning of communication skills in social work education should provide opportunities for students to practice skills in a simulated (or real) environment.

The NTI capacity-building workshop on communication skills for teachers is a critical aspect of education development, aimed at enhancing their knowledge, skills, attitudes, and practices to improve teaching effectiveness, student learning outcomes and overall teachers' job performance. The content of this workshop will depend on its underpinning philosophy. Over the past four decades, several popular cross-cultural communication concepts have emerged. The NTI capacity building workshop on communication skills for teachers aptly masticated these issues for teachers to absorb meaningful information that can be implemented into practice. This may be responsible for the significant influence found in the NTI capacity-building workshop on communication skills on primary school teachers' job performance in North East.

The finding revealed that the cluster mean of 3.56 indicates that the NTI capacity building workshop on the assessment of pupils influences primary school teachers' job performance in the Northeast to a very high extent. The extended NTI capacity-building workshop on the assessment of pupils' influence on primary school teachers' job performance in North East is significant. This means that the NTI capacity-building workshop on the assessment of pupils has a significant influence on primary school teachers' job performance in North East. The finding agrees with Adeniyi (2014) that the respondents confirm that UBE is integrated into the teacher education programme and that the teacher education programme develops teachers' strategies that promote the UBE goal. The finding agrees with Suleiman (2014) that training and retraining enhance teacher's productivity on the job to a great extent. The finding agrees with Solanke (2017) that teacher job performance is enhanced through workshop activities. The finding agrees with Cleverly, and Arikwuyo (2018) that teachers are trained to acquire the needed knowledge, skills, and disposition required for improvement in the pupil's performance. The finding agrees with Gimba (2019) that there is a significant difference in pedagogical competencies, management and assessment competencies and research competitiveness. The finding agrees with Uyoata (2020) that there is a significant difference in the academic performance of pupils taught by teachers who participated in the SDGs/NIT capacity-building workshops and pupils taught by teachers who did not participate in the workshops.

A successful teacher's capacity building revolves around pedagogical knowledge which involves deepening teachers' understanding of educational theories, principles, and methods. Subject

matter expertise entails improving teachers' content knowledge and mastery of the subjects they teach. Instructional skills have to do with developing teachers' abilities to plan, deliver, and assess engaging and effective lessons. Classroom management by equipping teachers with strategies to create a conducive learning environment, manage student behaviour, and promote positive relationships. Professional development entails fostering a culture of lifelong learning, reflective practice, collaboration, and continuous improvement among teachers. This may be responsible for the significant influence found in NTI capacity building workshop on assessment of pupils on primary school teachers' job performance in North East.

Conclusion

The study found that NTI capacity-building workshops have a significant and positive impact on primary school teachers' job performance in North East, Nigeria. Specifically, the workshops on classroom management, communication skills, and assessment of pupils significantly influence teachers' job performance to a very high extent. This suggests that the NTI capacity-building workshops are effective in enhancing primary school teachers' skills and knowledge, leading to improved job performance.

Recommendations

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

1. NTI Capacity Building Workshops: The National Teachers' Institute (NTI) should continue to organize capacity-building workshops for primary school teachers in North East, Nigeria. The workshops should focus on classroom management, communication skills, and assessment of pupils.
2. Teacher Training and Development: The government and educational authorities should prioritize teacher training and development programs. These programs should be designed to enhance teachers' skills and knowledge in areas such as classroom management, communication, and assessment.
3. Monitoring and Evaluation: The NTI and educational authorities should establish a monitoring and evaluation system to assess the impact of the capacity-building workshops on teachers' job performance.
4. Incentives and Motivation: The government and educational authorities should provide incentives and motivation to teachers who participate in the capacity-building workshops. This could include awards, promotions, or financial incentives.
5. Collaboration and Partnerships: The NTI and educational authorities should collaborate with other stakeholders, including parents, communities, and non-governmental organizations, to support the development of primary school teachers in North East, Nigeria.
6. Sustainability and Scaling Up: The NTI and educational authorities should ensure that the capacity-building workshops are sustainable and scalable. This could involve training trainers, developing online courses, and establishing a system for ongoing support and mentoring.
7. Research and Evaluation: The NTI and educational authorities should conduct regular research and evaluation to assess the impact of the capacity-building workshops on teachers' job performance and student outcomes.

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ASSESSMENT OF TEACHERS' ICT SELF-EFFICACY FOR UPPER BASIC SOCIAL STUDIES INSTRUCTION IN KOGI STATE, NIGERIA

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Abstract
This study assessed teachers' self-efficacy in the utilization of information and communication technologies for upper basic social studies instruction in Kogi state, Nigeria. Two research questions guided the study. The study adopted a descriptive survey research design. The population of the study comprised all social studies teachers in 2,765 Universal Basic Education schools in Kogi state. The study sample was 340 Social Studies teachers selected from UBE schools through the stratified random sampling technique. A researcher-developed questionnaire was used for data collection. The instrument was subjected to face validation by three (3) experts. The reliability coefficient of 0.75 was obtained using Cronbach Alpha. Mean and standard deviation were used to answer the research questions. Results revealed that Social Studies teachers' self-efficacy level in the use of ICT for instruction in upper basic schools in Kogi state was low. The study concluded that Social Studies teachers in upper basic schools in Kogi state lack confidence in their ability to use ICT tools for instruction. It was recommended among others that Governments and NGOs should organize a training programme for upper basic social studies teachers in Kogi state on how to use ICT for instruction.

Keywords: Assessment, ICT, self-efficacy, teachers, upper-basic

Introduction
Advancement in Information and Communication Technology (ICT) has spread across the globe in all aspects of human endeavour including the education sector. Thokozani, Sylvia, and Moses (2019) stated that the digital world is increasingly penetrating the education space, with digital technology gradually being used as a vehicle to deliver educational knowledge and skills in new and innovative ways. Collaborating, Shan (2023) posited that increasingly, ICT is being applied successfully in instruction, learning, and assessment. Eze and Aja (2014) averred that the integration of ICT into education helped teachers and students to further develop their understanding, and knowledge and make them gain new information. To facilitate the integration of ICT into education in Nigeria, the Federal Ministry of Education developed the National Policy on ICT in Education in May 2019. The policy thrust devolves into several focal areas geared towards the enhancement of sustainable socio-economic development, global competitiveness, and the individual's development and fulfilment through the attainment of qualitative education (Federal Ministry of Education, 2019).

To enhance the implementation of ICT policy at the Basic Education level, the Universal Basic Education Commission (UBEC) organized a three-day training programme for teachers on the utilization of multimedia studio equipment in August 2024. The trained teachers were to manage the twelve newly established smart schools in Abuja. In addition, UBEC organized a five-day training workshop for master trainers on the recently launched effective school programmes. The master trainers were expected to train teachers in the 327 selected effective schools in Nigeria

(UBEC, 2024). Information and Communication Technology are various technological devices used to create, store, retrieve, manage, and share information. The tools include computers, desktops, laptops, tablets, telephones, smartphones, iPods, printers, scanners, televisions, Radio, modems, routers, flash drives, MPS/MP4, memory cards, compact disks, microphones, speaker, overhead projector, interactive board, internet etc.

According to the National Council for Social Studies (2023) Social Studies is the study of individuals, communities, systems, and their interaction across time and places that prepares learners for local, national, and global civic life. Collaborating Zubair (2023) posited that Social Studies deal with man and his environment, how a man discovers himself, and how he can be useful both to himself, to the community, and the society at large. Akubuilo, Nnnam, and Ugo (2021) stated that social studies address the totality of man's interaction with his environment and how he can develop problem-solving skills and critical thinking. The primary purpose of social studies is to help young people make informed and reasoned decisions for the public good as citizens of a culturally diverse, democratic society in an independent world (NCSS, 1994). Social Studies is one of the disciplines clustered under the national value subjects in the basic education curriculum. The upper basic education is a critical phase that shapes the future of the child and the nation in general.

The concept of self-efficacy according to Bandura (1997:3) refers to a belief in one's capability to organize and execute the courses of action required to produce given attainments. Kinzie and Delcourt (1991) defined self-efficacy as an individual's confidence in his/her ability to perform a task to produce a specific outcome, which may impact personal engagement, effort, and persistence. Shu, Tu, and Wang (2011) viewed self-efficacy as people's judgment of their capabilities to organize and execute courses of action required to attain designated types of performances which is concerned not with skills one has but with judgment of what one can do with whatever skills one possesses. In a classroom situation, "a teacher's self-efficacy is a judgment of his or her capacity to bring about desired outcome of learners engagement and learning, even among those learners who may be difficult or unmotivated (Christophersen, Elstad, Turmo & Solhaug (2016:241). Patrick (2018) stated that self-efficacy offers teachers the predisposed confidence to tackle complicated tasks, seek ways to learn, and mastering techniques to overcome instructive difficulties rather than shunning them. Such teachers approach difficult tasks as challenges to be mastered and not threats to be avoided. Hatlevik and Hatlevik (2018) posited that beyond ICT resources and ICT skills, teachers' motivation to infuse ICT in instruction is influenced by their belief in their capacity to do so successfully.

Assessment is the systematic process of collecting, analyzing, and interpreting data about the observed attributes of persons, objects, programmes, or events to determine the worth of such traits concerning the expected objectives. The attribute assessed in this study was the 'self-belief' of social studies teachers in their ability to use ICT for developing lesson plans and delivering content at upper-basic schools in Kogi.State. The development of a lesson plan is the second stage of teachers' readiness for classroom instruction after preparing the scheme of work from the syllabus. A lesson plan is a detailed description of teachers' pathways to delivering content. It is the teacher's blueprint or road map of what learners need to learn and how it will be done effectively during content delivery time. Thus, the lesson plan is developed by teachers to guide delivering of content. Content delivery is the process of exposing learners to the curriculum contents in a particular subject. It involves all arranges and strategies the teacher employs to teach learners the specific curriculum contents. The classroom instruction could be physical, involving face-to-face contact between teachers and learners in a class. It could be virtual involving the use of online ICT resources.

Numerous studies on the availability and utilization of ICT for social studies instruction abound

(Arkorful, Barfi & Enchill (2020), Akubuilo, Nnnam & Ugo (2021), Bakare & Olanrewaju (2022) & Mohammed 2024). However, the plethoras of studies do not focus on teachers' self-efficacy in the use of ICT for Social Studies instruction in upper basic schools in Kogi State. Thus, the present study examined the level of teachers' belief in their capability to utilize ICT for social studies instruction in upper-basic schools in Kogi state. This study also explored teachers' level of confidence in their ability to utilize ICT for developing social studies lesson plans in upper-basic schools in Kogi state. Thus, the observed paucity of empirical literature necessitated the present study given the importance of ICT in enhancing effective teaching and learning of social studies in upper-basic schools.

Purpose of the Study

The purpose of this paper was to assess teachers' self-efficacy in the utilization of information and communication technologies for upper basic social studies instruction in Kogi State Nigeria. Specifically the study:

1. Ascertained the level of social studies teachers' self-efficacy in utilizing ICT for the development of lesson plans in upper basic schools
2. Explored the self-efficacy level of social studies teachers in the use of ICT for delivering content at the upper basic level

Research Questions

1. What is the level of social studies teachers' self-efficacy in utilizing ICT for the development of lesson plans in upper-basic schools?
2. What is the self-efficacy level of social studies teachers in the use of ICT for delivering content at the upper basic level?

Methodology

The study adopted a descriptive survey research design. The research design was considered appropriate because of its merits of identifying characteristics of a large population from a small group of individuals considered to be a representative sample of the larger group. This aligned with the view of Nworgu (2016) who stated that a descriptive survey research design is one in which a group of people or items is studied by collecting and analyzing data from only a few people or items considered to be representative of the entire group. The Population of this study comprised all the Social Studies teachers in 2,765 UBE schools in Kogi state. A sample of 340 was determined based on a sample size calculation for a population of 2,765 UBE schools, using a 95% confidence interval and a 5% margin of error (adopted from Research Advisors, 2006). The upper basic Social Studies teachers were sampled through the multistage random sampling technique. Kogi state was stratified into three senatorial districts (East, Central and West). Then two Local Government Areas (LGAs) were randomly selected from each of the three senatorial districts. Then upper basic Social studies teachers in each of the six LGAs were randomly selected and used for the study.

The instrument used for data collection was a researchers-designed questionnaire titled: Teachers' Self-Efficacy in the Utilization of ICT Questionnaire (TSEUICTQ). The questionnaire contained two sections (A and B). Section A captured the respondents' demographic information. Section B was in two clusters containing items structured to answer the two research questions. Cluster A contained ten items measuring Social Studies teacher's level of confidence in using ICT tools such as smartphones, computers, tape recorders, video recorders, scanners, printers, compact disks, flash drives, digital cameras and the internet for developing lesson plans at upper basic schools in Kogi State. Also, Cluster B contained ten items measuring Social Studies teachers' self-efficacy in using ICT tools such as computers, projectors, electronic whiteboards, Facebook, what's an App, Twitter (x), telegram, Instagram, YouTube and Tiktok for delivering content at the upper basic schools in Kogi State. The questionnaire items were structured along the 4-point rating scale

that required the respondents to choose from the following responses; Very Great Extent (VGE), Great Extent (GE), Low Extent (LE), and Very Low Extent (VLE) to establish the reliability of internal consistency, the instrument was pilot-tested, and a reliability coefficient of 0.80 was obtained through the Cronbach Alpha method. The instrument was validated by three experts in Educational Technology and Educational Measurement and Evaluation at Prince Abubakar Audu University, Anyigba. The validators made corrections that were used to modify the items in the final instrument. The instrument was administered to the respondents by the researcher with the help of six briefed research assistants. The questionnaires were administered to all the teachers in their respective schools and collection was made on the spot. Where the questionnaire could not be retrieved on the spot, the research assistants revisited schools visited earlier. The responses were collected anonymously to enhance objectivity. The data collected in this study were analyzed using mean and standard deviation to address the research questions. The study adopted the benchmark used by Akubuilo, Nnnam, and Ugo (2021) in which any item with a mean rating of 2.5 and above indicates a 'high' level of self-efficacy while those below
2.5 indicates a 'low' level of self-efficacy. Responses with Great Extent (GE) means that social studies teacher had a high level of confidence in their ability to use ICT tools for developing lesson plans and delivering content in upper basic schools in Kogi State. Low Extent (LE) means that social studies teacher had a low level of confidence in their ability to use ICT tools for developing lesson plans and delivering content in upper basic schools in Kogi State.

Results

Research Question One

What is the level of social studies teachers' self-efficacy in utilizing ICT for the development of lesson plans in upper-basic schools?

Table 1: Teachers' Self-efficacy in the use of ICT for the development of Social Studies Lesson Plans in upper basic schools

S/N	ITEM	N	Ẍ	SD	DECISION
1	Smart Phone	340	2.66	.90	GE
2	Computer	340	2.18	.82	LE
3	Tape Recorder	340	2.80	.99	GE
4	Video Recorder	340	2.24	.84	LE
5	Scanner	340	2.09	.81	LE
6	Printer	340	1.98	.83	LE
7	Compact Disc	340	1.98	.99	LE
8	Flash Drive	340	1.76	.81	LE
9	Digital camera	340	1.89	.86	LE
10	Internet	340	2.29	.95	LE
	Grand Mean and SD		**2.19**	**.88**	**LE**

Key: Ẍ - Mean; SD – Standard Deviation; Dec. – Decision; LE –Low Extent The results of data analysis in Table 1 showed that the mean responses of all items except 1 and 3 were less than the benchmark of 2.50, indicating that the respondents lack confidence in their ability to utilize the eight (8) ICT tools developing social studies lesson plans at upper basic schools in Kogi state. However, the mean responses of 2.66 and 2.80 recorded for items 1 and 3 respectively indicate that the respondents had a high level of confidence in their ability to use smartphones and tape recorders for developing Social Studies lesson plans at upper basic schools in Kogi State. This could be due to the ease of use of Smartphones and tape recorders compared to more complex ICT tools. The values of the grand mean and standard deviation for all the items were 2.19 and .88 respectively. This implies that the level of teachers' self-efficacy in using ICT tools for developing social studies lesson plans at upper basic schools in Kogi state was low

Research Question Two

What is the self-efficacy level of social studies teachers in the use of ICT for delivering content at the upper basic level?

Table 2: Teachers' Self-efficacy in the use of ICT for delivering Social Studies content at the upper basic level

S/N	ITEM	N	Ẍ	SDA	DECISION
1	Computer	340	2.30	.52	LE
2	Projector	340	1.94	.68	LE
3	Electronic whiteboard	340	2.23	.66	LE
4	FaceBook	340	2.09	.78	LE
5	What's App	340	1.66	.78	LE
6	Twitter (X)	340	1.81	.85	LE
7	Telegram	340	1.66	.94	LE
8	Instagram	340	1.57	.72	LE
9	YouTube	340	1.72	.82	LE
10	TikTok	340	1.94	.84	LE
	Grand Mean and SD		**1.89**	**.76**	**LE**

The results of data analysis in table 2 showed that the mean responses of all the items were less than the bench mark of 2.50, indicating that teachers lack confidence in their ability to use ICT tools for Social Studies instruction at upper basic schools in Kogi state. The values of the grand mean and standard deviation for all the items were 1.89 and .76 respectively. This implies that the level of Social Studies teachers' self-efficacy in using ICT tools for content delivery at upper basic schools in Kogi state was low. This could be due to insufficient ICT infrastructure and Lack of training on how to integrate ICT into classroom instruction in upper basic schools in Kogi State.

Discussion of Findings

Findings from the study revealed that generally, the level of Social Studies teachers' self- efficacy in using ICT for developing lesson plans at upper basic schools in Kogi state was low. However, the result also indicated that Social Studies teachers in the upper basic schools in Kogi state had moderate confidence in their ability to utilize smartphones and tape recorders for developing lesson plans. This might be because most teachers were conversant with the operations of smart phones and tape recorders which they used for social engagement and other personal activities.

Furthermore, the results showed that the level of Social Studies teachers' self-efficacy in using ICT tools for delivering content at upper basic schools in Kogi state was low. This could be due to Social Studies teachers' lack of skills in using advanced ICT tools and insufficient technical support from the Kogi State Universal Basic Education Board.

Conclusion

Based on the findings from this study it was concluded that teachers lack confidence in their ability to use ICT for developing social studies lesson plans in upper basic schools in Kogi state. Also, teachers lack confidence in their capability to utilize ICT for social studies instruction in upper-basic schools in Kogi state.

These findings imply that, if teachers are more comfortable using smartphones and video recorders, this could point to opportunities for mobile learning initiatives. On the other hand, the low self-efficacy in using more advanced ICT tools suggests a need for targeted professional development of Social Studies teachers at the upper basic schools in Kogi State.

Recommendations

Based on the results of this study, the following recommendations were advanced:

1. Government and NGOs should organize a training programme for upper basic Social Studies teachers in Kogi state on how to use ICT tools for developing lesson plans.

2. Kogi State Universal Basic Education Board and Local Government Education Authorities as well as NGOs should organize a training workshop for upper basic Social Studies teachers in Kogi state on how to use ICT for content delivery.
3. The quality assurance personnel of the Kogi State Universal Basic Education Board and Local Government Education Authorities should be proactive to ensure that upper basic Social Studies teachers use ICT for lesson planning and content delivery given the benefits of ICT integration into education.
4. The Local Government Education Authorities should create an ICT support system or mentor for teachers after the training to ensure that skills are retained and applied effectively in the classroom.
5. Government and NGOs should provide ICT infrastructure in schools to support the long-term integration of ICT into education.

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PERCEIVED DIFFICULTIES OF TEACHING AND LEARNING SENIOR SECONDARY SCHOOL GEOGRAPHY IN EDUCATION DISTRICT IV, LAGOS STATE

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Abstract
This study aimed to assess the perceived difficulties in the teaching and learning of Geography in Senior Secondary Schools in Education district IV, Lagos State. Most secondary school students perceive geography to be a difficult subject to learn, with so many concepts under different themes and branches. The objective of the study was to identify and point out the challenges faced by teachers and students in geography. The population of the study comprised five (5) Senior Secondary Schools. A purposive sampling technique was used to select participants from senior secondary schools in Education District IV. The sample for the study comprised a total of 121 respondents, including 111 SSII students currently enrolled in Geography as a school subject and 10 Geography teachers. The instrument for data collection was the questionnaire. Descriptive statistics (means and standard deviations) were used to analyse the data collected. Frequency count and percentage were used to answer research questions. The findings revealed that limited resources hinder effective geography teaching practices and reduce student engagement, which impacts overall educational outcomes in Geography. A large percentage of students find it difficult to understand geographic concepts thereby making learning difficult. It was recommended that adequate and qualified Geography teachers be employed, instructional resources be provided and used, curriculum reform should be implemented to enhance relevance and local context, funds be provided to equip geography departments etc. By addressing the identified challenges, educators can enhance student engagement, knowledge acquisition, critical thinking skills, and spatial awareness.

Keywords: Perceived difficulties, teaching and learning, Senior Secondary School, Geography

Introduction

The teaching of Geography in Nigerian secondary schools has over the years been guided by the conception of what exactly Geography is perceived to be by both teachers and learners. There was a time when the learning of Geography was limited to the inventory of geographical phenomena on the earth's surface (also known as the capes and bays period). This was followed by the phase of interactions between processes and results, regional differentiation and the origin of Geographical phenomena. During this phase, Geography was taught systematically under topics such as the agents and landforms of denudation, the erosion cycle, the evolution of settlements, factors of industrial location, etc. Next, was the phase of quantification initiated with the quantitative revolution as statistical methods were used to analyze relationships that exist among Geographical phenomena. During this phase it was not enough, for instance, to state how a particular soil type came to be, or what its properties were, rather, its quantification relationship with crop production must be shown by data. Currently, geography teaching is in the phase of neo-environmentalism. This phase is a complex one that is well suited to the holistic nature of Geography. Simply stated, we see a scenario of action and reactions between human activities and environmental responses (Olofin, 2001).

Geography as an academic discipline started in Nigeria in 1948 when the university college, Ibadan was established and geography was one of its foundation disciplines. Geography as a teaching subject was introduced to Nigeria's school curriculum in 1981 as part of the instrument for achieving national development (National Policy on Education (NPE). Geography is an

essential subject in the secondary school curriculum, as it helps students to understand the world around them. Despite its importance however, the teaching and learning of geography in senior secondary schools has been fraught with numerous difficulties, most of which can be attributed to several factors, ranging from inadequate teaching resources and lack of student interest in the subject (Lemchi 2001). Over the years, geographic ideas were transmitted to various parts of Nigeria through textbooks of some well-known British geographers like Doubling Stamps, and Stambridge, to mention but a few (Olawepo, 2004). However, it was not, until after the 2nd world War (1939 – 1945) that the proper foundation of geographic thought was laid in Nigeria. Since then, there have been rapid changes in both philosophical orientation and the context of the discipline. The development of geography in Nigeria can be succinctly grouped into three (3) phases; the foundation phase (1948 – 1960) the indigenization phase (1960 – 1970); and the consolidation phase (1970- date). The foundation phase was dominated by British personnel, both in philosophy and context. All the teachers were British except Lawrence Akin Mabogunje who later became the first Nigerian professor of Geography. The indigenization phase was when some Nigerian scholars who were trained by the expatriate British personnel took over from the British teachers. The consolidation phase witnessed great development due to the need to reinforce education after the Nigerian Civil War (1967 – 1970). By this time, many more Nigerian geographers were trained at both the first generation and 2nd generation universities, and teachers were successfully made at home (Nigeria). This phase also witnessed the change in the curriculum from British and European-centered curriculum to Nigerian and African-centered curriculum. Geography is an important subject in Senior Secondary Schools in many countries, as it provides foundational knowledge about the world and its many diverse physical and cultural landscapes.

However, teaching and learning geography in Senior Secondary Schools can be challenging due to the complexity of the subject matter, the ever-changing nature of the physical world, increased failure rate by students, decreased number of students offering the subject at secondary school level/attrition rate, lack of instructional resources, limited access to technology, inadequate specialist teacher's problems, outdated teaching methods, unqualified teachers to teach the subject, examination authority's related problems, and with some schools even making it optional and some irrelevant, and the difficulty of making the subject engaging for students. Also, many teachers may not have the necessary training or expertise to effectively teach the subject, leading to students not receiving the required knowledge and understanding of the world around them. Coupled with the fact that there is often a shortage of qualified geography teachers, particularly in developing countries (UNESCO, 2016). Additionally, some students may not have the necessary background knowledge to understand the content, while others may struggle to apply the concepts to real-world situations.

When planning for teaching and learning Geography according to de Guzman et al, some aspects need to be considered. Foremost, the syllabus for Geography should allow learners to acquire appropriate skills (Benjamin, 2014), the geography instructors have to use the most effective methods and approaches (Gökçe, 2009), utilize suitable student-centred strategies (Köseoğlu&Ünlü, 2006), and have technical facilities, map rooms and equipment (Wambui, 2013). Those activities that require students' involvement in the learning process makes learning more meaningful for learners and long-lasting. There are problems and difficulties met by educators in teaching Geography such as teachers' quality of instruction and sufficiency of knowledge on the discipline (Aydin, 2011), the inefficiency of time allocated (Paradis, & Dexter, 2007), and the geography program is not a student- centered (Elton, 2001). The success of geography teaching and learning depends to a large extent on defining the problems as perceived by both teachers and students and if possible suggesting solutions to these problems. Kaya (2018) opined that there are numerous obstacles in the way geography teachers provide a better geography education and these can be roughly divided into two categories; system-related problems and

problems encountered in the field of geography education. one major problem encountered in the field of geography education is the use of traditional teaching methods based on explaining concepts rather than practical hands-on teaching and learning.to ensure that students receive a comprehensive and meaningful education in geography, teachers must have the right resources and use creative teaching methods to make the materials more engaging and the subject more interesting. They must also be equipped with the skills and knowledge to effectively teach the subject. Additionally, schools should strive to provide students with engaging and interactive activities to help them further understand and appreciate the subject. According to Kaiko Mubita et al, in their study on Teachers and pupils' perspectives on Teaching and Learning of Geography in selected schools of Luapula and Lusaka provinces of Zambia: Benefits, Challenges and Prospects, there is a wealth of research on teaching and learning geography in schools. While traditional teaching methods have been criticized for being too teacher-centred, there are effective strategies that can be used to engage pupils in geography education. The use of digital technologies, fieldwork, and a social justice perspective are just a few examples of approaches that can be taken to improve the teaching and learning of geography in schools (Kaiko Mubita, et al 2023).

The government, parents, policy makers, geography educators and all educational stakeholders should be concerned about what could be responsible for these challenges against effective teaching and learning of geography as these challenges manifest not only in the performance of students at the Senior School Certificate Examination (SSCE) but also in their choice of the courses in tertiary institutions and even thereafter. The lacuna this study is designed to fill is therefore, to identify those perceived challenges and difficulties in teaching and learning geography in senior secondary schools in Nigeria to enhance and improve it. Also, the role of school management and curriculum design in influencing the teaching and learning of geography in senior secondary schools would be considered as well as the factors that contribute to the difficulties in teaching and learning geography. The study also explored the strategies used by teachers and students to overcome these perceived difficulties and the impact of these strategies on the teaching and learning of geography in Nigerian senior secondary schools.

Statement of Problem

The teaching and learning of Senior Secondary School Geography in Nigeria is confronted with numerous challenges, including inadequate teacher training and support, limited access to relevant resources and technology, ineffective teaching methods, and student misconceptions and lack of motivation. Similarly, the dynamic and interdisciplinary nature of geography, combined with the complexity of spatial reasoning and visualization, hinders students' ability to comprehend and apply geographic concepts. Many students view the subject to be very complex and difficult to understand due to its broadness, hence this makes them lose interest in offering it at 'O' level examinations. As a result, many students struggle to achieve academic success in geography, leading to poor performance in examinations and a lack of geographic literacy.

Geography as a subject requires a variety of teaching materials such as maps, globes, information and communication technologies, textbooks, material samples and other visual aids. Unfortunately, many schools do not have the necessary resources to facilitate effective teaching and learning in geography. Without these resources, teachers are unable to effectively demonstrate concepts and engage students in the learning process. Could it therefore be that teachers and students of geography perceive the subject to be much more difficult and demanding or are they less motivated to teach/learn the subject? What are the challenges and perceived difficulties identified?

Research Questions

The following research questions were raised to guide the study:

1. What is the perceived influence of ineffective teaching methods on students' performance in geography?

2. What resources are available to support the teaching and learning of geography in senior secondary schools?
3. What are the perceived challenges/difficulties teachers face in teaching Senior Secondary School Geography in Nigeria?
4. What are the challenges encountered by students in learning Senior Secondary School Geography in Nigeria?

Methodology

This study employed descriptive research of the mixed-methods approach (qualitative and quantitative). The design incorporated semi-structured interviews, focus group discussions, and surveys to gather comprehensive insights into the research questions. A purposive sampling technique was used to select participants from senior secondary schools in Education District IV. The participants selected had experience in both teaching and learning geography. The sample for the study comprised a total of 121 respondents, including 111 students currently enrolled in geography as a school subject and 10 geography teachers. The participant selection criteria were geography teachers and students in senior secondary schools. This is because not all students are offering geography in schools as it is not a core subject. This reinforces the collective nature of the sample, emphasizing that these individuals (students and teachers) provided data or responses for the study.

A structured questionnaire was developed to collect quantitative data from students. The instrument included Likert-scale items and open-ended questions to gather feedback, opinions, criticisms, and suggestions. A semi-structured interview was used for conducting in-depth interviews with selected teachers. The instruments were reviewed by a panel of experts in geography education and research methodology to ensure relevance and comprehensiveness. Pilot testing was conducted with a small group (n=10) of students and teachers not included in the final sample to refine the instruments. Internal consistency reliability was assessed using Cronbach's alpha for the questionnaire's Likert-scale items to get 0.89. Inter-rater reliability was established for the coding of qualitative data from interviews and focus groups. Questionnaires were administered to students in classroom settings under controlled conditions. The Focus group discussions were held with 5-7 teachers per session, moderated by a trained researcher. Descriptive statistics (means and standard deviations) were used to analyse the data collected. Interviews and focus group discussions were audio-recorded and transcribed verbatim Thematic analysis was conducted using NVivo software to identify recurring themes and patterns. A coding framework was developed iteratively, with two researchers independently coding a subset of data to ensure consistency.

Results

Research 1: What is the perceived influence of ineffective teaching methods on students' performance in geography?**?**

Table 1: Perceived influence of ineffective teaching methods on students' performance in geography

S/N	Items	Mean	SD
1	The use of ineffective teaching methods makes students think shallow about concepts.	3.00	1.41
2	The use of ineffective, non-practical teaching method can prevent students from engaging in actual geographical content in the class	2.50	0.71
3	Students can be discouraged from	2.41	0.12

	Engaging in learning with the use of ineffective teaching methods.		
4	The use of ineffective teaching methods can prevent students from thinking of engaging in personalized learning.	2.50	0.11
5	An ineffective teaching method can make Students learn out of content and context.	*2.61*	0.72

This table presents data on the perceived effects of ineffective teaching methods on student learning and engagement. M = 3.00 and SD = 1.41 suggest that ineffective teaching methods may lead students to think superficially about concepts. M= 2.50, and SD = 0.71 address the potential for ineffective teaching methods to prevent students from engaging with actual geographical content in class. (M = 2.41, SD = 0.12 focuses on how ineffective teaching methods might discourage students from engaging in learning. M = 2.50, SD =
0.11 explores whether ineffective teaching methods can prevent students from engaging in personalized learning. M = 2.61, SD = 0.72 examines if ineffective teaching methods can cause students to learn out of content and context. An average mean score of 2.61 indicates that ineffective teaching methods is perceived to influence students' performance in geography

Research Question 2: What resources are available to support the teaching and learning of geography in senior secondary schools?

This study revealed that the limited availability of resources significantly hinders the effective teaching of geography in secondary schools. The impact of resource constraints is multifaceted, affecting both the quality of instruction and student enrollment in geography courses. The study identified several critical resources that are often in short supply, including geographical laboratories, weather stations, geographic instruments (such as GPS devices, compasses, and clinometers), teaching aids (like maps, globes, material samples, and aerial photographs), relevant and up-to-date textbooks, and technology resources (such as GIS software, computers, and interactive whiteboards). To gauge the impact of resource limitations, students were surveyed. The results showed that a significant majority of students (65.1%) either agreed or strongly agreed that limited resources hinder effective geography teaching. Specifically, 28 students (29.4%) strongly agreed, and 34 students (35.7%) agreed with this statement. On the other hand, 16 students (16.8%) disagreed, and 17 students (17.8%) strongly disagreed. This high level of agreement underscores the perceived importance of adequate resources in the learning process. However, the substantial minority who disagreed or strongly disagreed suggests that some students may be able to learn effectively despite resource constraints, possibly due to factors like teacher quality or personal motivation.

Research question 3: What are the perceived challenges/difficulties teachers face in teaching Senior Secondary School Geography in Nigeria?

Using a thematic report on the challenges in Teaching Geography in Senior Secondary Schools. The respondents identified significant challenges faced by Geography teachers in senior secondary schools. These challenges collectively hinder effective teaching practices and reduce student engagement, which impacts overall educational outcomes in Geography. Their responses highlight several critical issues, including student disengagement, resource limitations, large class sizes, and time constraints.

Students' Lack of Interest in Geography

One of the primary obstacles identified was a lack of student interest in Geography, a factor that greatly influences the learning environment. Many students demonstrate limited enthusiasm for the subject, leading to disengagement during lessons and ultimately high attrition rate. This lack of interest makes it challenging for teachers to effectively capture and maintain students' attention,

thereby reducing motivation and involvement. As a result, educators struggle to foster an interactive classroom experience, leading to a compromised quality of instruction.

Resource Limitations

Another significant barrier noted by teachers was the lack of essential resources. Geography, as a subject, often requires various visual aids, maps, and specialized equipment to create an interactive learning experience. However, due to inadequate funding and limited resources, many teachers find it difficult to access these necessary tools. Although some educators manage to improvise with available materials, the majority struggle to deliver lessons effectively without sufficient resources, which hinders students' understanding of geographical concepts.

Overcrowded Classrooms and Insufficient Instructional Resources

Large class sizes, particularly in public schools in relation to the available teaching and learning aids, emerged as a major challenge in teaching Geography especially the practical classes. Overcrowding restricts teachers' ability to maintain classroom control, provide individual attention, and implement interactive instructional methods. These constraints are particularly detrimental to Geography, where individualized, hands-on learning, discussions, and visual/practical demonstrations are essential for effective comprehension. As a result, teachers face difficulties in engaging students and ensuring that each student receives the support needed to succeed in the subject.

Insufficient Instructional Time

Time constraints were another recurring issue highlighted in the study. With only between 90-120 minutes allocated weekly for Geography, teachers find it difficult to cover complex topics in-depth, conduct practical exercises, or organize field trips. This limitation forces educators to rush through essential content, often at the expense of student understanding and engagement. The restricted time frame thus results in a superficial approach to topics preventing students from fully grasping important geographical concepts and practical applications.

Inadequate funding of Public Schools

Most of the schools under the study did not have the needed geographical resources and equipment for teaching and learning Geography as they could not procure such due to lack of funding from the government.

Cumulative Impact of Challenges

These challenges—students' lack of interest, resource scarcity, inadequate funding, large class sizes, and limited time—are interconnected, creating a compounded effect on Geography education quality. Teachers frequently find themselves balancing curriculum demands against the practical constraints of their teaching environment, leading to compromises that are not always ideal for student learning. The study suggests that these issues are cumulative, with each factor exacerbating the others, thereby impeding the effectiveness of Geography instruction.

Research question 4: What are the challenges encountered by students in learning Senior Secondary School Geography in Nigeria?

37.8% of the respondents agree that geographic concepts are difficult to understand, 32.6% agree 15.7% disagree with the fact that geography is difficult to understand and 13.6% strongly disagree. This analysis shows that a larger percentage of students find it difficult to understand geographic concepts thereby making learning difficult. When it comes to memorizing geographic facts, geography students have diverse opinions. 17.8% strongly agree that memorizing geographic facts is challenging, 38.9% agree to it 27.3% disagree and 15.7% strongly disagree, which means student finds it easy and exciting to memorize facts. The study revealed that students find it difficult to interpret maps, graphs and diagrams (as map reading was their major challenging topic). 44.2% strongly agree that interpreting maps, charts and diagrams is difficult, 40% agree to

it while 9.4% disagree and 6.3% strongly disagree. A larger percentage of students have difficulties understanding spatial relationships and geographic patterns. 30.5% of students strongly agree, 22.1% agree that spatial relationships and geographic patterns are difficult to understand, 19 students representing 20% disagree with that fact and 27.3% disagree. The study further shows that insufficient teacher guidance and support affect students' understanding of geography. 33.6% strongly agree to it, 28.4% agree to it 17.8% disagree and 20% of students strongly disagree according to data collected from the field.

Discussion of Findings

The study revealed the intricate challenges surrounding the teaching and learning of geography in senior secondary schools in Lagos State Education District IV. Employing a mixed-method approach, including surveys and classroom observations, the study aimed to comprehensively identify the obstacles faced by geography teachers and students. The findings revealed significant difficulties, including limited teaching resources, too many students to the limited instructional resources, inadequate teacher training and engagement of teachers from other subject areas to teach geography, student disengagement/lack of interest, and a lack of curriculum relevance. The scarcity of teaching resources, such as current textbooks, maps, and technology tools, was found to hinder teachers' ability to deliver effective geography lessons. This finding aligns with Aworefa and Adeyemi (2018), who argued the absence of adequate instructional materials in Nigerian Schools significantly impact the quality of geography education. Adeyemi's study in Ondo State corroborates the findings of the study which emphasizes the critical role of resources in effective geography instruction. This finding is in tandem with the view of Obasi (2011) who opined the lack of qualified teachers, and appropriate instructional resources among others as challenges to the effective teaching and learning of geography. In the Philippine setting, as reported by de Guzman et al, cited in Durban & Catalan (2012) the most important mission of every school is to provide quality education to all students. However, public schools face diverse problems which hinder the delivery of quality education and some of these are inadequacy of facilities and instructional materials (de Guzman et al, 2017). However, Okunloye (2020) presents a contrasting view, suggesting that resourceful teachers can overcome material limitations through innovative approaches. The study found that overcrowded classrooms led to challenges in providing personalized attention to students, especially during practical lessons. The research highlighted insufficient teacher training in modern pedagogical techniques and technology usage as a limiting factor in adapting to innovative teaching methods.

However, Ezenwa (2021) presents a nuanced perspective, arguing that while formal training is important, teacher motivation and self-directed learning play equally crucial roles in adopting innovative practices. Ezenwa reported that highly motivated teachers often sought out and implemented new teaching strategies regardless of formal training opportunities. The study identified student disengagement in geography classes, attributing it to perceptions of the subject as abstract and disconnected from daily life. This finding resonates with Adelaja's (2020) work in Lagos State, which found a significant relationship between students' perception of subject relevance and their engagement levels in geography classes. On the other hand, Oluwafemi et al. (2023) challenged this notion, arguing that student disengagement is more closely linked to teaching methodologies than to the perceived relevance of the subject. De Guzman et al (2017) opined that the purpose of teaching geography is very relevant and satisfying to learners' lives but the instruction aspect is very challenging which necessitates intervention specifically the need for the utilization of innovative and more effective teaching strategies.

Conclusion

There are several challenges affecting the effective teaching and learning of geography in senior secondary schools in Education District IV of Lagos state, Nigeria. The study found that there were aspects of Geography that were considered challenging in teaching the discipline. These aspects

comprise the contents of the discipline and the instructional resources used. The following conclusions were drawn from the study; resource limitation, insufficient/lack of instructional resources, student's lack of interest, overcrowded classrooms, insufficient funds, and many others are the factors hindering the effective teaching and learning of geography in senior secondary schools in Lagos state. Based on the findings of this study, it can be deduced that the greatest challenge to effective teaching and learning of geography in senior secondary schools in Education District IV of Lagos State is the lack of instructional resources, especially for teaching practical aspects of geography, and inadequate qualified geography teachers. Hence most of the respondents agreed that their teachers do not make use of appropriate methods and or instructional resources to teach geography. The results revealed that most students in senior secondary schools in Education District IV of Lagos have a positive perception of learning geography despite the challenges they face in their schools. The relationship between students' perception and performance level indicated a significant positive low correlation. This can be understood that the student's perception of learning geography can equally impact their academic performance. However, there is no vast difference in students' perceptions of learning geography and their academic performance in the study area. The findings established from this study may not be generalized for the entire population of Lagos state or even Nigeria, since the study area was limited to one district. Moreover, the study has been conducted based on data collected at only one time rather than collecting data at different periods.

Recommendations

Based on the research findings and implications, the following recommendations were made to enhance geography teaching and learning in senior secondary schools in Lagos State:

1. Stakeholders and school administrators should Invest in regular and tailored professional development programs for geography teachers, such as courses, seminars, symposiums and training to enhance their teaching skills, technology integration, and classroom management strategies for personal and professional development.
2. Schools should be provided with updated and comprehensive teaching and learning materials, including current and relevant geography textbooks, maps, and technology tools, to support effective instruction and foster students' interest in the subject.
3. Geography teachers should be encouraged to use student-centred active learning methods and techniques such as group discussions, projects, and the incorporation of real-world examples and practical activities, to enhance student engagement and motivation to make their teaching more interesting for the students.
4. A comprehensive review of the geography curriculum should be conducted periodically to ensure its alignment with local context, real-world applications, and students' daily lives.
5. Even though MOST geography classes are usually not very large, there is still a need to address the issue of several students allocated to available instructional resources, through means such as dividing the classes into groups so all students have access to the available resources and technological tools), thereby creating a conducive learning environment and improving individualized attention to students.
6. There should be adequate funding for all geography departments/units in senior secondary schools in Nigeria from the appropriate government agencies and even from parents (through payment of school fees, practical classes/demonstrations and field trip fees) as well as solicit donations from companies and individuals. All schools in the study area revealed a lack of money as a major problem in teaching and learning geography.

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RELATIONSHIP BETWEEN SCIENCE PROCESS SKILLS AND CONCEPTUAL UNDERSTANDING OF PHYSICS AMONG SENIOR SCHOOL STUDENTS

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Abstract
Although science process skills and conceptual understanding play a crucial role in physics education, many students find it difficult to integrate these elements effectively. This study assessed students' proficiency in these skills, examined gender differences, and investigated the correlation between science process skills and conceptual understanding of Physics. A descriptive, cross-sectional research design was used, involving 150 senior secondary school students randomly selected to complete the two instruments for the study: Students' Science Process Skills in Physics Questionnaire (SSPSPQ) and Students' Conceptual Understanding of Physics Questionnaire (SCUPQ). Results showed that students' competency in various science process skills varied significantly, with data analysis performance much greater than other skills. Male and female students' general science process skills did not differ statistically. Nonetheless, there were clear gender differences as male students showed a higher conceptual understanding of physics. Pearson moment correlation analysis revealed that science process skills and conceptual knowledge have a somewhat moderate correlation ($r = 0.596$, $p < 0.001$). These results imply that improving science process skills might result from strengthening conceptual understanding among physics students and vice versa. The study highlighted the importance of tailoring teaching strategies and interventions to bridge gender gaps and assist all students in developing a greater understanding of physics.

Keywords: Science Process Skills, Conceptual Understanding, Physics Education, Gender Differences, Correlation Analysis, Teaching Strategies.

Introduction
To enable students to actively participate in the scientific method and successfully understand natural phenomena, developing science process skills is crucial in science education. Observing, classifying, measuring, drawing conclusions, anticipating, and experimenting are all included in these skills which must be mastered for students to gather and evaluate evidence, create hypotheses, and draw logical conclusions in sciences. Students' inquiry, inference, and prediction skills are improved by science process skills, which are essential for understanding complicated concepts (Karsli et al., 2010; Oktavia et al., 2020; Gizaw & Sorsa, 2023). Proficiency in science process skills is essential in physics education to build a coherent knowledge of physical concepts. Apart from memorization of facts and formulas, students need to apply these skills to explore and understand the physical world.

Conceptual understanding, on the other hand, involves not only recalling information but also comprehending, explaining, and applying physical concepts. Students' understanding of physics concepts applies to viewing patterns, describing how physical systems interact, and applying this knowledge to novel situations and practical uses. Several nations have constantly acknowledged the importance of physics and its application through science process skills to address social challenges, foster technological innovation, improve health, and drive industrialization (Hodosyova et al., 2015; Gizaw & Sorsa, 2023). Students who possess strong science process skills can actively participate in scientific investigation, which promotes a deeper understanding of physical concepts. However, there is an established theoretical basis in physics that supports

the development and use of science process skills. This synergy is crucial for students to thoroughly understand physics concepts, which they may use to solve difficult problems, make informed decisions, and advance science and technology.

Research has shown numerous relationships between science process skills and conceptual knowledge in diverse situations (Sari et al., 2018). Juhji and Nuangchalerm, (2020) discovered that Technological Pedagogical Content Knowledge (TPCK) is greatly improved by fundamental science process skills, with a strong correlation value of 0.842 ($p < 0.001$). Sari *et al.* (2018) also identified a significant connection between conceptual understanding and science process skills, along with a robust correlation between scientific attitudes and conceptual comprehension. A moderate correlation was found between fundamental and integrated science process skills and students' science achievement. The study by Kamarudin et al., (2022) found a weak positive correlation between science achievement and basic science process skills, but no statistically significant relationship with integrated science process skills; furthermore, similar levels of science process skills were found in male and female students, with no significant gender differences. The impact of students' science success on their understanding of basic and integrated science process skills was found to be fairly significant. Okafor (2017) investigated how secondary school students in Anambra State, Nigeria, developed their physics process skills. The results showed that, in comparison to female students, male students usually had poorer levels of acquisition of physics process skills. Additionally, students from urban schools outperformed those from rural schools in the learning of physics process skills, with no significant correlation between gender and school location.

Understanding the connection between conceptual understanding and science process skills is beneficial for physics education in several ways, such as improving critical thinking and problem-solving abilities, fostering scientific literacy and lifelong learning, and fostering interdisciplinary cooperation. Skills such as formulating hypotheses, organizing experiments, and analyzing data are some instances of what helps systematic approaches to critical thinking and issue resolution. Students who have this inner drive may do better academically and be more motivated to pursue STEM-related occupations and further education. To design lesson plans and learning environments that support the integration of these essential components of physics education, teachers have to understand the relationship between conceptual knowledge and science process skills.

Statement of The Problem

Research has indicated that although science process skills and conceptual knowledge are crucial for physics education, many senior secondary school students frequently struggle to have a firm grasp of these two key physics learning components. Students typically exhibit deficits when it comes to employing science process skills, such as designing experiments and interpreting data. Additionally, they frequently rely on algorithmic problem-solving and rote recall, failing to develop a deep conceptual understanding of physical concepts and principles. Students' interest in and performance in physics generally may suffer as a result of this mismatch between the development of conceptual knowledge and science process abilities, which may ultimately result in real-world problems. With the ultimate goal of enhancing physics teaching and learning methods at the senior secondary school level, the current study aims to offer significant insights into the interaction between these two crucial components of physics education.

Purpose of The Study

The purpose of this study is to investigate the relationship between students' science skills and their conceptual understanding of physics at the senior secondary school level. Specifically, the study aims to:

i. Assess the proficiency of secondary school students' conceptual understanding of Physics

concepts.

ii. Examine potential gender differences in science process skills among secondary school students in physics.

iii. Explore the relationship between students' science process skills and their conceptual understanding of physics.

iv. Investigate potential disparities between genders in senior secondary school students' conceptual grasp of physics.

Research Objectives

i. What is the level of proficiency in science process skills among senior school students in Physics?

ii. What is the level of conceptual understanding of Physics concepts among senior school students?

iii. Will there be a significant difference in the proficiency of science process skills by gender?

iv. How would gender affect the conceptual understanding of Physics concepts among senior school students?

Research Hypotheses

i. There is no significant difference in students' proficiency levels in the five science process skills in physics.

ii. There is no significant difference in the overall science process skills among senior school students in physics by gender.

iii. There is no significant relationship between students' science process skills and their conceptual understanding of physics concepts.

iv. There is no significant difference in the level of student's conceptual understanding of physics at the senior secondary school level based on gender.

Methodology

This study employed a descriptive, cross-sectional research design to investigate the relationship between students' science skills and their conceptual understanding of physics. The study population consisted of all SSS III students from the Lagos Mainland Education District. The choice of this set of senior students was based on their supposed coverage of secondary school-level Physics concepts based on the curriculum and their maturity level being in the highest secondary school class. The study sample comprised one hundred and fifty (150) students selected through a two-stage random sampling technique to choose five secondary schools and thirty students each from the schools. Two researcher-designed questionnaires titled: Students' Science Process Skills in Physics Questionnaire (SSPSPQ) and the Students' Conceptual Understanding of Physics Questionnaire (SCUPQ) were used for data collection. The validation of the instruments was done by five experts for face and content validation, necessary adjustments were effected based on their recommendations after which the reliability of the instruments was obtained after a pilot test was done among thirty students from a school outside the study school sample. Analysis based on Cronbach's alpha scale gave a reliability coefficient of 0.92 for the SSPSPQ and 0.87 for the SCUPQ.

To administer the questionnaires, both the students' and the school administrator's consents were sought after an explicit explanation of the purpose of the study and an assurance of confidentiality of their responses to the questionnaire items.

The questionnaires were distributed with the help of research assistants and sampled school class teachers, offering maximum supervision and ensuring a hundred per cent questionnaire retrievals. Retrieved questionnaires were analyzed using inferential statistics of correlation and T-test.

RESULTS AND DISCUSSION

Results

Hypothesis One: There is no significant difference in student proficiency levels in the five science process skills in physics.

Table 1: One-Way ANOVA of Difference in Student Proficiency Levels in The Five Science Process Skills

Source	Sum of Squares	df	Mean Square	F	P
Between Group	183.101	4	45.775	5.783	0.000
Within Group	5896.767	7457.915			
Total	6079.868	749			

A one-way ANOVA was conducted to determine if there were significant differences in proficiency levels across the five science process skills. The results indicated a significant difference among the groups, $F(4, 745) = 5.78$, $p < .001$. This was arrived at because the p-value is lesser than the typical alpha level of 0.05. Hence, the null hypothesis of no significant difference in student proficiency levels across the five science process skills (measurement, experiment design, data analysis, observation, and critical thinking) in physics was rejected. This implies that students' proficiency in the different science process skills varies in physics.

To further examine the nature of the differences revealed by the initial analysis, post-hoc comparisons using Tukey's Honest Significant Difference (HSD) test were conducted. The results of the post-hoc analysis are presented in Table 2.

Table 2: Tukey's HSD post-hoc comparison

(I) GP	(J) GP	Mean Difference (I-J)	Std Error	Sig.	95% Confidence interval Lower bound	Upper bound
Observation	Measurement	.053	.325	1.000	-.83	.94
	Data Analysis	-1.300*	.325	.001	.41	2.19
	Experimental	.867	.325	.060	-.02	1.75
	Critical Thinking	.660	.325	.252	-.23	1.55
Measurement	Observation	-.053	.325	1.000	-.94	.83
	Data Analysis	-1.247*	.325	.001	.36	2.13
	Experimental	.813	.325	.091	-.07	1.70
	Critical Thinking	.607	.325	.336	-.28	1.49
Data Analysis	Observation	1.300*	.325	.001	-2.19	-.41
	Measurement	1.247*	.325	.001	-2.13	-.36
	Experimental	-.433	.325	.670	-1.32	.45
	Critical Thinking	-.640	.325	.282	-2.53	.25
Experimental	Observation	-.867	.325	.060	-1.75	.02
	Measurement	-.813	.325	.091	-1.70	.07
	Data Analysis	.433	.325	.670	-.45	1.32
	Critical Thinking	-.207	.325	.969	-1.09	.68
Critical Thinking	Observation	-.666	.325	.252	-1.55	.23
	Measurement	-.607	.325	.336	-1.49	.28
	Data Analysis	.604	.325	.282	-.25	1.53
	Experimental	.207	.325	.969	-.68	1.09

* The mean difference is significant at the 0.05 level.

Post-hoc comparisons from an ANOVA test are shown in Table 2, with an emphasis on the mean differences across five groups, including observation, measurement, data analysis, experimental, and critical thinking. How these groups' mean compare to one another is shown by the mean difference values. When Observation and Data Analysis are compared, for example, the mean

difference is -1.300, which is statistically significant (p-value = 0.001). This suggests that the mean of Data Analysis is much greater than that of Observation. The mean difference between Measurement and Data Analysis is -1.247, which is significant with a p-value of 0.001, confirming that Data Analysis has a greater mean than Measurement. There are significant differences between Data Analysis and Observation and Measurement, which are consistent with the opposing comparisons. Once more, data analysis reveals that the mean is noticeably higher in such instances. On the other hand, comparisons usually show no significant differences between Critical and Experimental Thinking. For instance, the mean difference of -0.867 between the observation and experimental data does not show statistical significance (p-value = 0.060). The measurement is also not significant when compared to the experimental data, with a p-value of 0.091 and a mean difference of -0.813. Similarly, with a mean difference of
0.433 and a p-value of 0.670, there is no significant difference between Data Analysis and Experimental.

There are many insignificant analogies when comparing Critical Thinking to Measurement, Observation, Data Analysis, and Experimental methods. The mean differences in these cases range from -0.666 to 0.207, with p-values substantially over the
0.05 level, suggesting that they are not statistically significant. Overall, the results show that Data Analysis constantly differs significantly from Observation and Measurement, showing higher means in these comparisons, even when the differences involving Experimental and Critical Thinking are not statistically significant.

Hypothesis Two: There is no significant difference in the overall science process skills among senior school students in physics by gender.

Table 3: t-test of no significant difference in the overall science process skills among senior school students in physics by gender.

Gender	N	Mean	SD	t-value	Df	P	Decision
Male	72	84.26	9.99	0.824	148	0.411	Accepted
Female	78	82.88	10.47				

A t-test was conducted to examine whether there was a significant difference in overall science process skills among secondary school students in physics based on gender. The results presented in Table 3 showed that there was no significant difference in the overall science process skills between male (M = 84.26, SD = 9.99) and female (M = 82.88, SD = 10.47) students, t (148) = 0.824, p = 0.411. The decision was taken because the p-value is greater than the typical alpha level of 0.05. Hence, the null hypothesis of no significant gender difference in overall science process skills was accepted.

Hypothesis Three: There is no significant relationship between students' science process skills and their conceptual understanding of physics concepts.

Table 4: Pearson Moment Correlation between SCU and SPS in physics

		SCU	SPS
SCU	Pearson correlation Sig.(2-1 tailed)		0.596** 0.000
	N	150	150
SPS	Pearson correlation	0.596**	1
	Sig.(2-tailed)	0.000	
	N	150	150

** Correlation is significant at the 0.001 level (2-tail)

A Pearson moment correlation was conducted to examine the relationship between students'

conceptual understanding (SCU) and science process skills (SPS) in physics. The results are presented in Table 4. The results showed a statistically significant positive correlation between students' conceptual understanding (SCU) and their science process skills (SPS), r (150) = 0.596, $p < 0.001$. This suggests that students' science process abilities tended to grow along with their conceptual knowledge of physics, and vice versa. The correlation coefficient (r = 0.596) indicates a moderate positive association between the two variables. This result is consistent with the theoretical viewpoint that states that scientific process skills and conceptual knowledge are two interrelated and crucial components of physics education. The strong positive link suggests that improving students' physics conceptual knowledge may also help them increase their science process abilities, and vice versa.

Hypothesis Four: There is no significant difference in the level of student's conceptual understanding of physics at the senior secondary school level based on gender.

Table 5: t-test of no significant difference in the level of student's conceptual understanding of physics at the senior secondary school level based on gender

Gender	N	Mean	SD	t-value	Df	P	Decision
Male	72	119.47	17.80	2.571	148	0.011	Rejected
Female	78	111.50	20.00				

A t-test was conducted to examine whether there was a significant gender difference in the level of student's conceptual understanding of physics at the senior secondary school level.

The results are presented in Table 5. The results showed that there was a significant difference in the level of conceptual understanding of physics between male (M = 119.47, SD = 17.80) and female (M = 111.50, SD = 20.00) students, t (148) = 2.571, p = 0.011.

The null hypothesis of no significant gender difference in the level of student's conceptual understanding of physics was rejected.

These findings indicate that male students demonstrated a significantly higher level of conceptual understanding in physics compared to their female counterparts at the senior secondary school level.

Discussion Hypothesis One

An intriguing and significant finding of the study, particularly in light of earlier research revealed by literature, was the rejection of the hypothesis that "there is no significant difference in student proficiency levels across the five science process skills in physics (measurement, experiment design, data analysis, observation, and critical thinking)". Previous research supported the findings of the current study, which showed that students' competency levels varied across a variety of competencies (Widyaningsih et al., 2020; Mondejar & Asio, 2022; Olowu, 2023). The fact that the null hypothesis was rejected indicates that students' competency levels in the several science process abilities under investigation, differ significantly. This may suggest that while students struggle more with some skills—like experiment design or data analysis—they are stronger in others, like measurement or observation. The study has significant implications for the design of scientific curricula and teaching methodologies. The findings show that different people have different degrees of competency in science process abilities; data analysis ratings are significantly higher than those for measurement and observation. This shows that specialized teaching strategies are needed, especially those that concentrate on teaching core skills like measuring. All essential abilities should be taught in a balanced manner, and teachers should set out time for students to practice these fundamentals. Using a variety of teaching strategies, courses, and exams may be tailored to each student's strengths and limitations to address their varying competency levels.

Hypothesis Two

Interestingly, the finding of hypothesis two, that "there is no significant difference in overall

science process skills among secondary school students in physics concepts by gender" was accepted. When compared with previous research in this area, the current study's result appears to contradict the findings from previously reported investigations on gender differences in science process skills among science students (Yuliskurniawati et al., 2019; Bassey & Amanso, 2017; Budiart et al.,2022). In their study, Bassey and Amanso (2017) found that male students exhibited significantly higher overall proficiency in science process skills compared to their female counterparts. Similarly, using a problem-based learning (PBL) approach and observational assessments to measure science process skills, Darmaji et al., (2022) in a study conducted at Jambi University and involved first-year physics education students found that female students demonstrated superior mastery of science process skills compared to their male counterparts, as indicated by their higher average scores. According to the researchers, one possible explanation for this gender gap might be that female students are often more interested and inquisitive throughout the practical exercises.

However, the findings of the current study, which utilized the Students' Science Process Skills in Physics Questionnaire and a t-test analysis, suggest that there are no statistically significant differences in the overall science process skill proficiency between male and female secondary school students in the context of physics. This result aligns with the findings of Ekon and Eni, (2015) which included 200 JSS 3 pupils from three coeducational schools in their study. The results of the t-test, which was used to analyze the disparity between male and female science process skill proficiency showed that gender had no discernible impact on the learning of science process skills at the upper basic level of universal basic education.

This study's finding that male and female secondary school students in physics do not significantly differ in overall science process skills has important implications for curriculum development and instruction. It suggests that gender does not influence the acquisition of these skills, supporting initiatives for gender equality in science education. Teachers should focus on inclusive, engaging materials and strategies, addressing each student's unique needs rather than reinforcing stereotypes about gender differences. Additionally, curriculum developers should ensure that activities and assessments are gender-neutral. These insights can guide professional development for educators, fostering a fair and inclusive science learning environment that maximizes all students' potential.

Hypothesis Three

The finding of hypothesis three revealed a significantly positive relationship between students' science process skills and their conceptual understanding of physics, this implies that demonstrating a good level of proficiency in science process skills will result in a better conceptual understanding of Physics concepts. This is interesting and significant as it aligns with the findings of some previous research in this area. The results of the studies of Rosdianto et al., (2020) and Sevda and Münevver, (2022), on the relationship, between science process skills of critical thinking and conceptual understanding in physics among secondary school students, are congruent with those of this study. Their study, which employed similar assessment instruments, revealed a moderately positive correlation between the two constructs, suggesting that proficiency in science process skills is closely linked to a better conceptual understanding of physics concepts. The study found a significant positive correlation between students' physics conceptual understanding (SCU) and scientific process skills (SPS), which has substantial curriculum design and instructional implications. This relationship points to the necessity of an integrated teaching strategy that develops conceptual knowledge and science process skills at the same time. To improve their students' grasp of physics, teachers ought to provide assignments that call for them to use science process skills. To encourage all-encompassing growth, these areas should get equal attention in the curriculum and examinations. The relationship between conceptual understanding and science process skills may also be strengthened by focused interventions, teacher professional

development, and collaborative learning settings, which will better prepare students for success in science-related disciplines.

Hypothesis Four

The current research revealed a statistically significant disparity in the conceptual understanding of physics between male and female students, with male students at the senior secondary school level exhibiting a significantly higher level of conceptual understanding than their female counterparts. This finding differs from that of Khan *et al.,* (2024) where the findings of their study revealed that there were statistically significant gender differences in academic performance, with female students, outperforming their male counterparts across all variables examined, suggesting that female students demonstrated stronger conceptual understanding and better problem-solving abilities in physics compared to their male peers.

There is an inconsistent and noticeable gender gap in physics, as evidenced by gender variations in conceptual knowledge of the subject. It is unclear whether gender has any effect on conceptual understanding of Physics concepts due to inconsistent tilt of better performance among male and female students. Hence, it might be necessary to look into other factors such as teaching methodology, curriculum, and learning environment to ensure equity and inclusivity. To address gender-based prejudices and stereotypes that might influence students' opinions and physics performance, community service, counseling, and teacher preparation are crucial. By taking a comprehensive approach to creating a more equitable learning environment, educational institutions may help all students—regardless of gender—achieve their academic and professional goals and acquire a firm conceptual grasp of science-related disciplines.

Conclusion

This study demonstrates the intricate connection between senior secondary students' conceptual grasp of physics and their scientific process abilities. There were notable variations in skill levels, with data analysis showing higher performance than observation and measurement and no significant disparities in general science process abilities by gender. On the other hand, male students outperformed female students in conceptual understanding, suggesting that specific treatments are necessary. The relationship between conceptual understanding and science process skills is favourable, indicating that improving student performance through integrated teaching methods is possible. To enhance learning outcomes and better equip students for difficulties in STEM disciplines in the future, instructors should concurrently concentrate on these two factors. However, the study was limited to one educational district in Lagos State, duplicating the conduct of this research will help to reveal balanced information on the proficiency of students in science process skills and their conceptual understanding of Physics concepts among senior school students in Lagos State.

Recommendation

The study's findings prompt the emergence of many recommendations aimed at improving physics education. Incorporating practical experiments, critical thinking exercises, and real-world problem-solving tasks into their lessons is how teachers may help students develop scientific process skills and conceptual knowledge. Additionally, formative assessments have to be implemented to provide teachers with prompt feedback. Targeted interventions such as mentoring programs, gender-sensitive education, and teacher professional development are necessary to overcome gender inequalities in conceptual comprehension. The gender gap may be closed with the support of diverse STEM role models and collaborative learning settings. Additionally, to improve student performance and meet changing educational demands, educational authorities should routinely evaluate and modify the physics curriculum in response to input.

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ARTIFICIAL INTELLIGENCE (AI) ON EDUCATIONAL ADMINISTRATION PROSPECT AND CHALLENGES FOR NIGERIA EDUCATION SYSTEM

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Abstract
The significant role played by information and communication technology in the advancement of education and educational administration in Nigeria cannot be overemphasized. Today, Artificial Intelligence is currently the rave of all sectors of the global society. However, these technological advancements often come with associated challenges or issues that raise concerns that require extensive discourse in education circles to take advantage of this technological innovation and also proactively, develop plans to curb anticipated challenges. This opinion paper is an attempt to define educational Administration, Artificial Intelligence, and the relationship between educational administration and Artificial intelligence. The paper also highlights the prospects of artificial intelligence in the areas of Digitization, Digitalization, Data Privacy, effective school and Personnel management, training, data management, supervision, and planning, among others as well as, discusses the associated challenges of this emerging technology i.e. artificial intelligence such as lack of infrastructural support, trained personnel, disruptions, unemployment, among others. The benefits of innovations in the area of Information and Communication Technology would play a significant role in educational administration, development and achievement of sustainable development goals. To maximize the potential of AI in educational administration, this paper suggests: Developing robust policies and frameworks to guide the ethical use of AI in education and investing in the training of educational administrators and teachers to enhance their AI literacy and capability. The integration of AI and ICT innovations can significantly contribute to the development of educational administration, aiding the achievement of sustainable development goals in Nigeria.

Keywords: Education, Administration, Artificial Intelligence and Education System

Introduction
Information and Communication Technology (ICT) has brought a revolution in almost all facets of life. The impact of ICT in promoting learning experiences cannot be overemphasized. According to Osei (2022), ICT has significantly enhanced educational delivery through the integration of digital tools and platforms that facilitate teaching and learning processes. Artificial Intelligence (AI), as a subset of ICT, is believed by many scholars, including Luckin et al. (2016), to hold the potential to address critical challenges in educational development over time. This belief is grounded in the efficacy of AI innovations in transforming teaching methodologies, improving learning outcomes, and fostering the achievement of Sustainable Development Goal (SDG) 4, which emphasizes inclusive and equitable quality education.

However, technological advancements through ICT often come with attendant challenges, including disruptions to existing systems and structures, raising concerns and debates among education stakeholders. As Oye et al. (2020) argue, the integration of advanced technologies such as AI in education requires careful planning and adaptation to mitigate potential disruptions. These debates have attracted the attention and commitment of development partners such as UNESCO, which continues to advocate for inclusive strategies and capacity-building initiatives

to ensure the timely achievement of the Education 2030 agenda. The motive behind this research stems from the urgent need to explore how Artificial Intelligence can be effectively leveraged to overcome persistent challenges in the education sector while mitigating its associated risks. The researchers are motivated by the vision of fostering sustainable educational development through technological innovation, aligning with global objectives like SDG 4, and ensuring that Nigeria and other developing nations can harness the transformative potential of AI for the benefit of students, educators, and society at large.

An Overview of key concepts

Before we delve into the exploration of the topic 'Artificial Intelligence (AI) on Educational Administration Prospect and Challenges for Nigeria Educational System,' it is expedient that we first and foremost, establish the meaning of the keywords highlighted in the Abstract i.e. Education, Administration, Artificial Intelligence, and Education System.

Education:

Education is simply defined as a systematic program of instruction specially designed to ensure individuals who pass through it acquire knowledge and skills that make them useful to themselves and the society in which they live. The educational setting can be formal, informal, or non-formal. According to Fafunwa (1974), education is "what each generation gives to its younger ones, which makes them develop attitudes, abilities, skills, and other behaviours of positive value to the society in which they live." Education is therefore the cornerstone for personal and societal development, fostering lifelong learning and adaptability in a dynamic world.

Administration

The Oxford English Dictionary defines administration as "the process or activity of running a business, organization, etc." This broad definition applies to various sectors, including education. Perko (2014) describes administration as "the planning, organization, and coordination of human and material resources to achieve a set goal." In the context of education, administration refers to the management of day-to-day operations in an educational institution, ensuring smooth functioning and alignment with broader educational objectives (Bush, 2003).

Educational Administration

Educational administration, as an extension of administration, focuses specifically on managing the structures, systems, and processes of educational institutions to achieve set goals. It involves providing leadership for the education of students, developing curricula, implementing assessments, and managing human and material resources. According to IGI Global (2024), educational administration is "the management of a school system to achieve effective teaching and learning outcomes." This includes fostering collaboration among stakeholders, utilizing resources effectively, and responding to technological and societal changes.

Artificial Intelligence

The Encyclopedia Britannica defines Artificial Intelligence (AI) as "the ability of a digital computer or computer-controlled robot to perform tasks commonly associated with intelligent beings." Gardener (2024) further simplifies AI as "the theory and development of computer systems able to perform tasks that usually require human intelligence, such as visual perception, speech recognition, decision-making, and language translation." In education, AI is a transformative tool that enhances teaching, learning, and administrative efficiency through personalized learning experiences, data management, and predictive analytics.

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Education System

Before defining an education system, there is a need to define what the system is all about. Vocabulary.com defines a system as "a group of things that connect and form some kind of

coherent whole." Similarly, Dictionary.com (2024) views a system as "an assemblage or combination of things or parts forming a complex or unitary whole." An education system, therefore, refers to the structured network of policies, institutions, and processes that deliver education to individuals. It encompasses the economic and social factors influencing public schools, such as public funding, teaching resources, facilities, staffing, and employee benefits. Marc (2020) notes that an education system is dynamic and continuously evolves to meet the needs of a changing world. This adaptability is crucial for incorporating digital tools, embracing personalized learning approaches, and effectively preparing learners to compete globally.

Education, administration, and educational administration are interlinked. Education serves as the foundational process for equipping individuals with the knowledge and skills needed for personal and societal development. Administration provides the framework for managing resources and systems that enable education to occur effectively. Educational administration combines the principles of education and administration, applying them specifically to the management of educational systems. It ensures that resources, policies, and practices align to create an environment conducive to teaching, learning, and innovation.

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The integration of these concepts is critical in a rapidly changing world where technological advancements like Artificial Intelligence are redefining educational practices and outcomes. This synergy between education, administration, and educational administration lays the groundwork for addressing contemporary challenges and achieving sustainable educational development.

Administration of Educational Institutions in an Artificial Intelligence era.

Despite periodic educational reforms in the Nigerian education sector, some issues or challenges have continued to impede the ability of education to achieve its intended objectives and deliver its goods and services, so the application of AI becomes necessary (ChathamHouse, 2024). Some of the AI tools that could be useful in the field of education among others include:

i. ChatGPT AI;
ii. ClickUp AI;
iii. Dall-E AI;
iv. Tome AI; and
v. Bricabrac AI (Simplilearn, 2024).

AI tools can be utilized for various purposes in educational settings, such as language translation, image generation, answering queries, engaging in human-like conversations, and converting text to images. While some of these tools are already in use, others are still in the developmental stages. The prospects of AI in facilitating teaching and learning processes are significant, particularly in addressing challenges such as managing large classes, the lack of high- quality educational materials, and the absence of native speakers for the official language of instruction (Ben, 2024). With AI, learning can be personalized to cater to individual learners' needs, eliminating the necessity of crowding students in a centralized instructional setting. Furthermore, AI enables the use of educational resources that align with local cultural contexts, thereby enhancing the relevance and effectiveness of the learning experience.

Significance of Artificial Intelligence in the Teaching and Learning Process

The significance of Artificial Intelligence in a school setting cannot be overemphasized in the sense that it will assist both teachers and students in the teaching-learning process. Pathak (2024) enumerated ten key areas where artificial intelligence can facilitate teaching and learning in a school system. It will help teachers to transition from traditional to modern flexible methods and also bring a good learning experience for students.

1. Personalized Learning Experiences and Smart Content

AI provides a personalized learning experience to every student along with analyzing the student's learning pattern, strengths, and weaknesses. This will enable the teachers to know where and how to assist the students to sustain their performance or improve in the area of weaknesses by designing programs to that effect. Also, AI makes teaching materials more interactive and personalized (Dane, 2024). Today, we have digital textbooks and online modules which easily be adjusted to the learner's pace, and also update such materials to make them up-to-date, so that the content is relevant and aligned with constant changes.

2. Automated Task, Grading and Feedback System. The use of Artificial Intelligence enables Teachers to create systems that provide immediate and personalized tasks and feedback to both students and teachers. This is made possible by the automation of tasks like lesson planning and notes as well as building a grading system that provides feedback to learners and teachers. For instance, the review or assessment of learning outcomes after every module or lesson could be made possible through the use of AI. This will save both time and strength and even resources, etc. The hours teachers/examiners spent in the past to grade students would have been reduced through the use of AI as, as well as obtained more accurate results with fewer margin errors compared to the manual processes. AI has cut down the waiting time for institutions like JAMB and Universities to release Joint Matriculation Examination and Post UTME results respectively.

3. Interactive Learning Engagement/Process

One of the greatest advancements in information and communication technology is the development of AI-powered tools that now make the learning process more interactive for students, AI makes learning activities fun by creating some of the learning content in the form of games or simulations. For instance, simulation of the concepts like the solar, digestive or reproductive systems makes it more concrete for learners.

4. Bridging of Learning Gaps

With the help of AI tools, teachers can easily conduct Learning gap analysis through feedback obtained from the data generated from students 'pace of learning, thereby, identifying possible learning gaps among students through learning gaps analysis, and consequently, use the learning insights from the reports to address students' peculiar needs individually. This is because AI can process vast amounts of data and come up with more accurate results compared to manual processes.

5. The use of AI in the Administration of Examinations

Besides automated grading systems, AI is now being used in the conduct of examination processes. For instance, the use of drones and close-circuit cameras (CCTVs) for supervision of examination exercises is becoming a common practice in schools. After examination, AI could be used for marking and grading students and the generation of personalized feedback. In the area of research, AI is currently being used for plagiarism detection.

Potential Challenges with the Use of Artificial Intelligence in Education

One profound fact that has not been disputed by commentators about the application of AI-driven processes is that the human factor remains relevant. Despite the milestone achievements with the use of AI to facilitate activities, processes, and systems, in the education sector, it is worthy of note that there are potential challenges that must contend with. These challenges are either technical or non-technical. Derilove (2024), the top challenges in Artificial Intelligence that need to be known highlighted some challenges which are adapted in this paper:

1. Technical Issues; In Nigeria, one of the basic challenges that always affect automation systems is most times technical in nature. In the case of AI challenges that are likely to be confronted with in the use of AI in educational circles would be that overcoming technical issues in the process of implementation of AI-driven systems will include inadequacy of supportive infrastructure like the internet services, epileptic data networks, etc.

2. The challenge of Understanding the AI algorithms: Understanding the complex nature of AI algorithms has remained a fundamental challenge with the use of AI-driven systems. This is based on the fact that AI systems normally negate human intelligence and use AI algorithms in making complex decisions and performing complicated tasks, and in the event of operational malfunctioning can be very difficult for an average user to interpret and effect any form of correction.

3. Potential bias and discrimination: it is common knowledge that some AI systems are designed from data that are either biased or discriminatory, as such the product automatically supports the societal tendency of biases and discrimination. For instance, where a particular language, sex, or race is used or subjected to AI training at the expense of others, it will automatically affect the utilization of the system by a segment of the society.

4. Privacy and data security Issues: since AI basically relies on personal data for training and operation, it therefore, raises myriads of securities and data privacy questions as well as serious concerns. The incidence of identity theft is one of the challenges that has been one of the things that cause phobia for the use of AI by some individuals.

5. Ethical Issues: One of the challenges that seems to impede the adoption of most technologies' boarders on ethical issues. In a situation where AI systems are developed without ethical considerations**,** i.e**.** without consideration of human values, it will give rise to serious challenges in the use or implementation of the technology. Imagine modules of say sex education developed without paying attention to African values, such materials might not be accepted for use in schools (Simplilearn, 2024).

Suggestion

To ensure that AI serves its purpose of facilitating learning and educational administration in Nigeria, the following recommendations need to be considered:

1. There is a need for educational institutions to invest in AI-supportive infrastructures to ensure an enabling environment is created for the use of AI programmes in educational institutions. This implies that investing in advanced hardware technology will also not be a bad idea.
2. Delving into research and development towards increasing understanding of AI algorithms, models, and systems, in general, will not be out of place; This could be supported with the establishment of platforms that focus on information and knowledge-sharing to facilitate a smooth transition from manual to AI-driven processes in academic institutions;
3. To curb the incidence of bias and potential discrimination that could undermine acceptance or usage of AI products in the educational sector, the use of unbiased and secured data by program developers should be encouraged as well as open up training on AI algorithms and related fields.
4. To curb or minimise the incident of identity and data theft which has made many unreceptive to AI systems, implementing robust data protection measures cannot be overemphasized. Various data usage regulations must be adhered to; this is to say that governments at all levels and regulators will have to synergize in ensuring the establishment and enforcement of regulations.
5. To overcome ethical associated challenges in the use of AI in educational institutions, researchers and AI software developers must ensure they bear in mind the ethical issues that might arise with the technology to ensure that such innovations align with human values and priorities, as well as uphold high moral standards as defined by end using communities like schools.

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MANAGEMENT OF HANDICRAFT CURRICULUM AND ITS' PEDAGOGY IN BASIC SECONDARY SCHOOL TO ENHANCE ENTREPRENEURSHIP SKILLS FOR JOB CREATION IN EMOHUA LOCAL GOVERNMENT AREA, RIVERS STATE, NIGERIA

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Abstract
This study examined the management of the basic secondary school curriculum with adequate pedagogy towards enhancing entrepreneurship skills for job creation in the Emohua Local Government Area of Rivers State. A descriptive survey research design was used for the study. The population for the study was (Ten 10) Basic Secondary Schools with (Ten 10) principals and 325 (teachers) making a total population of 425. This was purposively selected. Three (3) schools were sampled out of the ten schools and a sample size of three (3) principals and (one hundred and forty-two) (142) teachers, making (145) respondents were sampled through a simple random sampling technique at the interval of three. Data was collected through a self-structured four-Likert questionnaire. Simple frequency (F) and percentage (%) were used to analyze the data collected. The results indicated that the Handicraft Components of the basic Secondary school curriculum do not have the adequate teaching skills required to enhance entrepreneurial skills for job creation for the youths. The study therefore concludes that the schools should be equipped with both human and material resources to meet the required intended set goals for the establishment of basic secondary education. Based on the study, it was recommended that the basic things to make adequate teaching of the handicraft components of the basic school curriculum should be made available in the school to enhance entrepreneurship skills for job creation.

Keywords: Handicraft, pedagogy, entrepreneurial skills, job creation.

Introduction

School as the citadel of knowledge has different curricula that bring in the development of individuals, society and the nation at large. Technological know-how stands to be one of them. Handicraft which starts from the primary level of education (UBE) is the foundation level of technology which leads to the development of individuals as well as nations. In line with this, the National Policy on Education FRN (2014) emphasized the desire to develop local craft as a basis for technological development in primary/basic school curricula in the country. In basic schools, the development of indigenous skills (handicrafts or handiwork) is seen as central to successful indigenous skill development critical for solutions to the contemporary problems of technology in Nigerian society.

The school as an organization is not only the seat of knowledge but also where different types of skills are acquired and as a window to technological advancement in the whole world (UNESCO, 2006). Some of the developed countries of the world, like America, China, Japan, and so on, attribute their successes to the development of science and technology-based curricula. The curriculum gives the operational direction of every school organization. It indicates that the school curriculum remains important within the context of national development and ambition. To realize

the importance of technological competence the national development, the Federal Republic of Nigeria (FRN, 2014) posits that modern educational technologies should always be used and improved upon to enhance school operations at all levels of the education system. Furthermore, the National Policy on Education (2014) stated the following as the objectives of primary education. These include:

1. Inculcate permanent literacy and numeracy, and ability to communicate effectively;
2. Lay a sound basis for scientific and reflective thinking;
3. Give citizenship education as a basis for effective participation in and contribution to the life of the society;
4. Mould the character and develop sound attitudes and morals in the child;
5. Develop in the child the ability to adapt to the child's changing environment;
6. Give the child opportunities for developing manipulative skills that will enable the child to function effectively in society within the limits of the child's capacity; and
7. Provide the child with basic tools for further educational advancement, including preparation for trades and crafts of the locality.

The curriculum and subjects offered at this level include:

i. Languages (ii) Mathematics (iii) Science (iv) Physical and Health Education (v) Religious Knowledge (vi) Agriculture/Home Economics (vii) Social studies and Citizenship Education (viii) Cultural and Creative Arts (Drawing, Handicraft, Music and Cultural Activities)
(ix) Computer education (FRN,2014). In that way, the basic primary school is assigned, broadly, the role of preparing individuals for: (a) useful living within the society; and (b) higher education. In specific terms, it aims, among others, to: (i) offer a diversified curriculum to cater for the differences in talents, opportunities and future roles; (ii) provide trained manpower in the applied sciences, technology and commerce at sub-professional grades; (iii) inspire students with a desire for self-improvement and achievement for excellence; (iv) provide technical knowledge and vocational economic development(FRN, 2014).

The JSS curriculum for pre-vocational electives includes: (i) Agriculture (ii) Business Studies (iii) Home Economics (iv). Local subjects in this category are "practice" (FRN, 2014). The above positions effectively suggest that the operation of 'handicraft' or local crafts is fundamental to education curriculum development in Nigeria, especially at the basic – primary, as indicated in items (viii) and junior secondary, as indicated in item (iv) education level. It also suggests a strong desire to build a solid foundation for technological advancement in the country to meet the global standard. Handicraft is a craft making and has a wide range of creative and design activities that are related to making things. The two active components are 'hand' and 'craft'. While we are familiar with 'hand' as the terminal part of the human arm used mainly for grasping and performing, 'craft' is the mental application of using a skill to produce things. The American Heritage Dictionary of the English Language (2000) posits that 'craft' is "skill in doing or making something, as in the arts; proficiency".

Onyemah (2011) stated that 'craft' is a "skill, trade or occupation, especially one requiring the use of the hands". This definition is consistent with that of Ehirheme (2014), both of which are in line with the study. According to him, the craft is "an activity involving special skills at making things with your hands". Craft is a skill in making something.

Concept of Curriculum Management

The call for a structural re-engineering of our education system is to be able to produce and utilize our product to effectively solve our peculiar problems (Anyanwu, 2008). Quite often, the prominence of handicrafts is an impetus for technical education development; however, the meaning and implications of the term are often too rarely clarified. In most developed countries including the United States of America, the level of curriculum operation is related to educational achievement. The level of management and Curriculum implementation helps to transform and

improve ideas, skills, and attitudes which leads to development.

Entrepreneurial Skill

Entrepreneurship Skills Development does not start and end with creating the enabling environment to enhance economic activities only. It calls for 'mass action' requiring an individual's focus on the discovery and acquisition of entrepreneurial traits, harnessing such skills to confront and overcome the hostile forces of nature. It is a matter of the individual developing the skill to survive, consciously working to be free from dependence forces. Deliberate measures should be put in place to incorporate entrepreneurship skills development schemes into the curriculum of the educational system from Primary to University levels, making credit facilities easily accessible to entrepreneurs, protecting indigenous entrepreneurs, and improving infrastructural facilities among others are recommendations the paper suggested as a way forward. Atakpa (2011) emphasized that one of the strategic targets of handicraft skills development is to produce graduates of international standard with appropriate knowledge and skills in their field of study who will be highly employable and able to employ themselves. Handicraft Skills Development and Economic Empowerment is a millennium agenda for developing countries and is very consistent with the global development goal for poverty reduction. One of the key strategies for economic empowerment is handicraft skills development. This is underscored in the National Economic Empowerment and Development Strategy (NEEDS) initiative of the Federal Government of Nigeria (Emeka, 2007). According to Ediagbonya (2013), Handicraft education programs can equip students with entrepreneurial skills that will enable them to create and develop enterprises in various areas. The emphasis here is that training programs will redirect the students from focusing on white-collar jobs or paid employment to self-employment. During the colonial era, people were trained to work for the colonial masters so their education was directed toward such. Hence, Akpomi (2009) lamented that immediately after independence, our educational system was structured after paid employment. Mohammed (2011) posited that many graduates of secondary school education in Nigeria have realized that it is an onerous task to secure gainful employment in Government Ministries, Parastatals, and industrial establishments.

Statement of the Problem

The management of the handicraft component of the basic secondary school curriculum with adequate pedagogy towards enhancing entrepreneurship skills for job creation in Emohua Local Government Area, Rivers State, Nigeria. The handicraft skills in Nigeria are faced with numerous problems set against achieving its objectives. These challenges as outlined by Agommouh (2014) include; inadequate finance, low budgetary allocation, inadequate teachers, lack of teaching facilities, lack of laboratory instructors, lack of management techniques in secondary schools. This is an innovation not only in developing new products and services for the market but also in stimulating investment interest in the new venture being created.

Inadequate Credit Facilities. The entrepreneurship skills development in Nigeria is also faced with difficulties in sourcing credit facilities to fund it. Financial institutions that offer such facilities usually charge high interest rates and set severe collateral securities. These make the process of skills development difficult in sub-Saharan Africa and Nigeria in particular.

Poor Infrastructural Facilities - The state of infrastructure for skills development in the sub-region is almost not available and where available, is deteriorating. The sorry state of infrastructure has contributed significantly to the inefficient development of entrepreneurship education in the country. Inadequate Support Programs- Nigeria is blessed with creative minds, particularly in the field of Science and Technology. However, these resources are wasted due to inadequate support from the government and other stakeholders in the country. The problem is further compounded by the lack of government laws in place which can swiftly turn around and align itself to such innovations and inventions. Inadequate Data - Data for entrepreneurship skills development has been lacking in the country. There is little or limited program designed for entrepreneurship

training and development.

High level of Corruption - The widespread level of corruption has made the procurement of licenses, permits for goods and services from government agencies, and even the payment of taxes and levies difficult without playing the game of paying bribes and kickbacks. This makes the cost of business too high in the country with adverse implications on entrepreneurship skills development.

Objectives of the Study

The major objective of this study is to examine the management of the handicraft component of the Basic Secondary School Curriculum with Entrepreneurship Skills for Job Creation in Emohua Local Government Area, Rivers State, Nigeria. Specifically, the objectives of the study sought to:

1. Examine the handicraft entrepreneurial skills development of basic secondary school curriculum in Emohua Local Government Area, Rivers State.
2. Discuss the management tools used to enhance entrepreneurial skills development of basic secondary school curriculum in Emohua Local Government Area, Rivers State.
3. Examine the impact of entrepreneurial skills development on job creation of basic secondary school curriculum in Emohua Local Government Area, Rivers State.

Research Question

The following research questions were formulated to elucidate responses from the respondents:

1. What are the handicraft components of entrepreneurial skills development of basic secondary school curriculum in Emohua Local Government Area, Rivers State?
2. What are the pedagogical methods used to enhance entrepreneurial skills development of basic secondary school curriculum in Emohua Local Government Area, Rivers State?
3. What is the impact of entrepreneurial skills development on job creation of basic secondary school curriculum in Emohua Local Government Area, Rivers State?

Methodology

This study examined the management of the basic secondary school curriculum to enhance entrepreneurship skills for job creation in the Emohua Local Government Area of Rivers State. The population for the study was Ten (10) Basic Secondary Schools with (10) principals and 325 teachers making a total population of 425. This was purposively selected. Three (3) schools were used as sample size and three (3) principals and one hundred and forty-two (142) teachers were selected, through a simple random sampling technique. Data was collected through a self-structured four-Likert questionnaire of Strongly Agreed = (4), Agreed = (3), Disagreed = (2) and Strongly Disagreed = (1). The data collected was analyzed using simple frequency (F) and percentage (%). The results indicated that the Handicraft Components of the basic Secondary school curriculum did not have the adequate teaching pedagogy required to enhance entrepreneurial skills for job creation for the youths. The study therefore concluded that the schools should be equipped with both human and material resources intended for the establishment of basic secondary education. Based on the study, it was recommended that the basic things to make adequate teaching of the handicraft components of the basic school curriculum should be made available to enhance entrepreneurship skills for job creation.

Research Question 1: What are the handicraft components of entrepreneurial skills development of basic secondary school curriculum in Emohua Local Government Area, Rivers State?

Table 1: Frequency and percentage responses of the respondents on the components of entrepreneurial skills development of basic secondary school curriculum in Emohua Local Government Area, Rivers State

N= 145

Items S/N	**SA** F	%	**A** F	%	**D** F	%	**SD** F	%
The basic secondary school curriculum is readily available in basic secondary schools	**65**	**45**	**45**	**31**	**22**	**15**	**12**	**8**
2. The content of the Curriculum available is intended towards achieving the set goals for entrepreneurial skills	**71**	**49**	**48**	**33**	**15**	**10**	**9**	**6**
3. There are different entrepreneurial skills related to handicraft studies	**68**	**47**	**35**	**24**	**28**	**19**	**13**	**9**
There are different teaching facilities related to entrepreneurial skills	**53**	**37**	**61**	**42**	**13**	**9**	**10**	**6**
5. The entrepreneurship Workshops are available and adequately equipped	**18**	**12**	**25**	**17**	**33**	**23**	**68**	**47**

Source: Fieldwork, 2024.

The results in Table 1 above indicate the responses of the respondents on the availability of the components of entrepreneurial skills development in basic secondary school curriculum. The table shows that 65 (45%) of the respondents in item 1 strongly agreed that the curriculum of basic secondary school was available, while 45 (31%) agreed, 22 (15%) disagreed and 12 (8%) strongly disagreed. Also, 71 (49%) of the respondents strongly agreed on item 1, 45 (31%) agreed 22 (15%) disagreed and 12 (8%) strongly disagreed on the item. 68 (47%) respondents in item 3 indicated agreement, while 35 (24%) agreed on the item. 28 (19%) respondents disagreed on the item and 13 (9%) strongly disagreed. In item 4, 53 (37%) of the respondents strongly agreed and 61 (42%) agreed, while 13 (9%) disagreed and 10 (6%) strongly disagreed. Furthermore, in item 5, 18 (12%) of the respondents strongly agreed and 25 (17%) agreed, while 33 (23%) and 68 (47%) strongly disagreed. This last item indicates that entrepreneurial workshops were not available and that if they were, they were not equipped.

Research Question 2: What are the pedagogical methods used to enhance entrepreneurial skills development of basic secondary school curriculum in Emohua Local Government Area, Rivers State?

Table 2: Responses of the respondents on the pedagogical methods used to enhance entrepreneurial skills development of basic secondary school curriculum in Emohua Local Government Area, Rivers State.

N=145

S/N	Items	SA F	%	A F	%	DF	%	SD F	%
1.	The teachers use the workshop while teaching	**59**	**41.0**	**41**	**28.3**	**26**	**18.0**	**11**	**8.0**
	Different facilities are available for different skills to be acquired	**15**	**10.3**	**10**	**7.0**	**45**	**31.0**	**70**	**48.3**
	Teachers use more demonstration methods to teach	**28**	**19.3**	**30**	**24.1**	**33**	**23.0**	**54**	**37.9**
4.	Students do more of practical than theory as stipulated In the curriculum	**35**	**24.1**	**41**	**28.3**	**25**	**17.2**	**42**	**29.0**
	Teachers use different teaching methods as related to the topics in the curriculum	**35**	**24.1**	**52**	**35.9**	**32**	**22.1**	**23**	**15.9**

Source Fieldwork, 2024

Table 2 discusses the responses of the respondents on the pedagogy used to enhance entrepreneurial skills development of the basic secondary school curriculum. Item 1 on the table shows that 59 (41.0%) of the respondents strongly agreed that teachers use the workshops while teaching, 41 (28.3%) also agreed with it, 26 (18.0%) disagreed and 11 (8.0%) strongly disagreed. In item 2, 15 (10.3%) strongly agreed, and 10 (7.0%) agreed on the item, while 45 (31.0%) disagreed and 70 (48.3%) strongly disagreed that different facilities are available for different programmes of entrepreneurial skills. In item 3, 28 (19.3%) of the respondents strongly agreed and 30 (24.1%) agreed that teachers use more demonstration methods to teach entrepreneurial skills development, while 33 (23.0%) disagreed and 54 (37.9%) strongly disagreed. This in essence indicates that most of the lessons by the teachers on entrepreneurial skill development are not demonstrative.

Research Question 3: What is the impact of entrepreneurial skills development on job creation of basic secondary school curriculum in Emohua Local Government Area, Rivers State?

Table 3: Shows the responses of the respondents on the impact of entrepreneurial skills development on job creation of basic secondary school curriculum in Emohua Local Government Area, Rivers State.

N=145

S/N	Items	SA F	%	A F	%	D F	%	SD F	%
1.	The students were given adequate skilled training to be able to gain employment	**55**	**37.9**	**38**	**26.2**	**28**	**19.3**	**22**	**15.2**
2.	Students were trained according to the skill they have interested on	**60**	**41.4**	**34**	**24.5**	**31**	**21.4**	**16**	**11.0**
3.	The students were able to gain employment according to the skills acquired	**11**	**7.6**	**22**	**15.2**	**38**	**26.2**	**72**	**49.6**
4.	The students were able to Be independent after the skills acquired	**15**	**10.3**	**21**	**14.5**	**42**	**29.0**	**65**	**44.8**
5	Much development was achieved after school due to the skills acquired	**12**	**8.3**	**18**	**12.4**	**50**	**34.5**	**62**	**42.8**

Source: Fieldwork, 2024.

Table 3 sought responses from the respondents on the impact of entrepreneurial skills development on the job creation of basic secondary school curricula. Item 1 indicated that 55 (37.9%) of the respondents strongly agreed and 38 (26.2%) agreed that students were given adequate skilled training that will enable them to have gainful employment, while 28 (19.3%) disagreed and 22 (15.2%) strongly disagreed with the first item. In item 2, 60 (41.4%) of the respondents strongly agreed and 34 (24.5%) agreed that students were trained according to the skill they desire, while, 31 (21.4%) disagreed and 22 (15.2%) strongly disagreed with the item 2. In item 3, 11 (7.6%) strongly agreed and 22 (15.2%) agreed that students were able to gain employment according to the skill acquired, while 38 (26.2%) disagreed and 72 (49.6%) strongly disagreed with the item. This indicated therefore that, even after the training, students are not getting jobs according to what they learned. In item 4, 15 (10.3%) strongly agreed and 21 (14.5) agreed that students were able to be independent after their training, while 42 (29.0%) disagreed and 65 (44.8%) strongly disagreed with this. In item 5, 12 (8.3%) strongly agreed and 21 (14.5%) agreed that much development was achieved after school due to the skills acquired, while, 42 (29.0%) and 65 (44.8%) strongly disagreed with this affirmation.

Discussion of findings

The findings of the study in Table 1 show that there are many components of handicraft entrepreneurial skills in the curriculum of basic secondary schools in Emohua LGA. This can be seen in the responses of the respondents as the percentage of responses agrees with the Items of the table. With the agreement on all the items, it means that the curriculum contains the skills to be able to teach basic secondary school skills. In line with this, the National Policy on Education (FRN 2014) emphasized the desire to develop a curriculum that will enhance the teaching of basic technological development in primary/basic schools in the country.

Table 2 indicates the responses of the respondents on the pedagogical methods to enhance entrepreneurial development. It was observed from the table that items 1 and 5 only agreed that

teachers use different methods of teaching to teach the students. Items 2, 3, and 4 disagreed with this assertion. This indicates that the teachers do not follow the entrepreneurial development skills the way they should be taught and as stated in the curriculum. In line with the above UNESCO (2010) posits that the school as an organization is not only the seat of knowledge but also where different types of skills are acquired and regarded as a window to technological advancement in the whole world.

Table 3 shows the responses of the respondents on the impact of entrepreneurial skills development on job creation of basic secondary school curriculum in Emohua Local Government Area, Rivers State. Item 1 and 2 in the table shows that the students were given adequate training and were also trained in the areas of their interest, but 3, 4, and 5 disagreed that the students were gainfully employed by other employers and by themselves, hence, the expected development was not achieved.

Conclusion

The study concludes that the basic secondary school curriculum components for entrepreneurial skill development were robust. It also concludes that the teachers are not always using the appropriate pedagogy to teach the students and direct the students to the skills desired to be acquired. The study further concludes that even with the skills acquired, it was and still is difficult for graduates with entrepreneurial skills to get the job successfully.

Recommendation

Based on the study, the following recommendations were made:

1. Their curriculum planners should include handicraft skills primary school curriculum;
2. Primary school children should be trained in different desired skills;
3. The government should provide the necessary facilities and equipment to enhance adequate teaching and training of pupils in different skills;
4. Trained teachers and facilitators should be recruited to mind the machines and other facilities in the entrepreneurial workshops and
5. Adequate and equipped workshops should be provided.

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GENDER DIFFERENCE IN THE PERFORMANCE OF MALE AND FEMALE SECONDARY SCHOOL STUDENTS IN GRAMMAR AND READING COMPREHENSION IN TARABA STATE, NIGERIA.

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Abstract
This study investigated Gender differences in the performance of Male and Female Secondary-School Students in Grammar and Reading Comprehension in Taraba State, Nigeria. Two research questions and two hypotheses guided the study. The study adopted a descriptive survey research design to analyse the data collected. The simple random sampling technique was used to constitute the samples for the study, 6 schools were selected out of 59 schools. The sample size of 367 was determined using the Taro Yamane formula. The sample size was made of 203 male students and 165 female students. Data were analysed using descriptive statistics: Means and Standard Deviations, and inferential statistics of Analysis of Covariance (ANCOVA). Research Questions were answered using the Descriptive Statistics of Means and Standard Deviation while Research hypotheses were tested using Pearson's Product Moment Correlation (PPMC) or Inferential Statistics at a 0.05 level of significance. The result revealed that there was a significant correlation between male students' achievement in grammar and performance in reading comprehension. The result further revealed that there was a significant correlation between female students' achievement in grammar and performance in reading comprehension in senior secondary schools in Jalingo Education Zone and Yorro Local Government Area of Taraba State.

Keywords: grammar, Academic Performance, gender, reading comprehension

Introduction
Reading is the ability to make sense of the content of what is read; that is, it is the ability to obtain information from printed text materials; reading is a means of getting exercise. It is a complex process that involves interaction or negotiation between the reader of the text and the author of the book. Reading is a dynamic inferring process that makes communication between the writer and the reader possible. The understanding of the text comes from the interaction between the words that are written and how they inspire knowledge outside the text. Chua (2018) explains that reading is certainly an important activity for expanding the knowledge of a language. Then, reading is a process that starts with decoding and ends with constructing meaning through an active interaction between the writer and the reader. In brief, reading is a complex process of reconstructing the author's ideas to gain meaning from the print. Reading is an activity for a purpose.

Despite the importance of reading to students' academic advancement and success in the English language and other school subjects, students' performance in reading especially in external examinations, has been very poor. The poor performance of students in reading may be identified as the major cause of the poor results they obtain in the English language and this has been traced

to spelling errors, misinterpretation of the demands of the questions and difficulty in framing their responses to the questions asked (Yusuf, 2019). Some of these factors are further confirmed by the WAEC Chief Examiners' Report (2020) on students' performance in reading and re-echoed that candidates' weaknesses include inability to marshal their points and answers to questions that require detailed explanations in reading, inability to understand the words used in passages due to the ignorance of the rudiments of English grammar in reading comprehension. Also, Adesulu and Laju (2018) attributed the weaknesses of candidates to inadequate preparation and rote memorization, illegible handwriting and vague or irrelevant answers. Furthermore, researchers such as Gandara (2019) identified that grammar may undermine the performance of students in reading.

Grammar is the foundation for communication regardless of the country or the language. The better the grammar, the clearer the message and the more the likelihood of understanding the intent and meaning of the message. When a message is relayed with the correct grammar, it is easier to understand the purpose and meaning of that message. To communicate, therefore, a learner should know the grammar of the language. Grammar is the description of a language and how units such as words and phrases are combined to produce sentences in the language.

Eyisi (2016) defines grammar as the internal, unconscious rule system, which guides the use of a language. It determines correctness and a deviation from the set system is dubbed incorrect usage, where meaning is distorted, mis-presented, or ambiguous. She further explains that grammar has to do with the rules of a language in a book, acquired by an individual or studied as a branch of learning. It also refers to usage, that is, what people mean when they say that someone used an incorrect expression. Grammar equals the rules and norms of language and includes the comprehension of sentence structures (Turula, 2018). Nigerian Educational Research and Development Council (NERDC, 2016) specifically enjoined English language teachers to pay particular attention to the grammar growth of the students since grammar can help the learner to comprehend written texts and reading can contribute to the growth of grammar.

The gender of students may also be a factor in determining students' performance in reading Comprehension. It refers to the distinction that separates the male and female in terms of their sex organs. Gender is a variable that may strongly correlate with the academic achievement of students. Logan and Johnston (2019), observed that generally, females read and comprehend better than their male counterparts Literature from Brown & Inouye (2018)) has shown, however, that researchers have concentrated so much on how to improve the teaching of learners' proficiency with little attention on the grammar mastery of the students for proper comprehension of texts. Although grammar has been emphasized in learning as an isolated and joint variable their role in determining the female and male students' performance in reading comprehension that the researcher knows has not yielded a conclusive result. It may be instructive to carry out an empirical study on the role of grammar in male and female students in reading.

Statement of the Problem

Studies like Akinbode (2018), and Oji (2019) have shown that secondary school students over the years have been performing poorly in reading. This has been attributed to many variables among which are candidates' poor expression, inability to understand the words used in passages due to low grammar knowledge, poor spelling, misinterpretation of the demands of the questions, inadequate preparation, rote memorization, and illegible handwriting. Studies have been carried out on all the aforementioned variables. However, results from literature on one of the variables (grammar) make it necessary to carry out further investigation on the importance of the variable in improving the performance of the students. Hence, this study.

Purpose of the Study

The study generally investigated Gender differences in the Performance of Male and Female Secondary- School Students in Grammar and Reading Comprehension in Taraba State, Nigeria. Specifically, the objective of the study was to: determine the relationship between male and female students' performance in grammar and reading comprehension.

Research Questions

The following research questions guided the study:

What is the relationship between male and female students' performance in grammar and reading comprehension?

Hypotheses

The null hypothesis was tested at a 0.05 level of significance

$H0_1$: There is no significant correlation between male and female students' performance in grammar and reading comprehension

Methodology

The study adopted the descriptive survey research design to determine Gender differences in the Performance of Male and Female Secondary- School Students in Grammar and Reading Comprehension in Taraba State, Nigeria. The design was considered appropriate in that it makes comparisons and evaluation of existing conditions as well as collection of factual information possible. The design involves the interpretation of facts without manipulating any variable which was intended in this study. The population for the study comprised 2856 senior secondary 2 (SS2) students. The main study sample comprised of 367 (SS 2) Students which was determined using the Taro Yamane formula. The instruments that were used for the collection of data for this study were the English Grammar Test (EGT) and the Reading Comprehension Test (RCT). The EGT is a 50-item dichotomously scored instrument (right and wrong) constructed by the researcher, which tested students through various questions on agreement and sequence of tenses. The test has two parts. Part A was used to gather the demographic data of the student respondents, while Part B was the test. The key was scored dichotomously. That is, right or wrong, each question takes one mark. The EGT after face and content validity was pilot-tested on 30 senior secondary II students who were randomly selected in a Government Secondary School in a different education zone in the same Taraba State. The reliability of the EGT was computed using Kuder-Richardson formula 20 ($K\text{-}R_{20}$) methods. The choice of ($K\text{-}R_{20}$) is because the items were dichotomously scored. A reliability index of 0.81 was obtained. RCAT was adopted from the West African Examination (WAEC, 2023) question hence, it is reliable. So, there was no reliability performed on RCAT.

Data Analysis

Data were analyzed using descriptive statistics: Means and Standard Deviations, and inferential statistics of Analysis of Covariance (NCOVA)

Research Question

Table 1: Relationship between Male and Female Students' Performance in Grammar and Reading Comprehension

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Variable	N	Mean	Standard deviation	R	Remark
Female students' performance in grammar	165	26.65	8.30	0.982	Strong relationship
Performance in reading Comprehension		8.54	2.82		
Male students' performance in grammar	203	28.35	6.84	0.942	Strong relationship
Performance in reading comprehension		8.51	2.86		

Hypothesis

Table 3: Pearson Correlation between Female Students' performance in Grammar and Reading Comprehension

Variables	N	R	P-value	Remark
Female students' performance in grammar and reading comprehension	165	0.982	0.002	Significant

Table 4: Pearson Correlation between Male Students' performance in Grammar and Reading Comprehension

Variables	N	R	P-value	Remark
Male students' performance in grammar Performance in reading comprehension	203	0.942	0.005	Significant

Interpretation of Results

The results of the data analysis and interpretation are presented according to the research questions that guided the study. Data related to each research question was presented on a separate table to aid comprehension of the analysis and interpretation of results. The data presented are analyzed using Pearson Product Moment Correlation to answer research questions.

Research Question

What is the relationship between Male and female students' performance in grammar and reading comprehension?

Table 1 shows the relationship between 165 female students' performance in grammar and performance in reading comprehension using Pearson Product Moment Correlation. The Table shows that the mean for female students' performance in grammar is 26.65 with a standard

deviation of 8.30 and the mean for performance in reading comprehension is 8.54 with a standard deviation of 2.82. The table further reveals a strong positive linear relationship between female students' performance in grammar and performance in reading comprehension with a correlation coefficient of 0.982. Therefore, the relationship between female students' performance in grammar and performance in reading comprehension is 0.982.

Table 2 shows the relationship between 203 male students' performance in grammar and performance in reading comprehension using Pearson Product Moment Correlation. The table shows that the mean for male students' performance in grammar is 28.35 with a standard deviation of 6.84 and the mean for performance in reading comprehension is 8.51 with a standard deviation of 2.86. The table further reveals a strong positive linear relationship between male students' performance in grammar and performance in reading comprehension with a correlation coefficient of 0.942. Therefore, the relationship between male students' performance in grammar and performance in reading comprehension is 0.942.

Null hypothesis Explained

The hypothesis for the study was tested using Pearson Product Moment Correlation at a 0.05 level of significance. The decision rule was that the null hypothesis was rejected if the P-value was less than 0.05 and not rejected if otherwise.

Hypothesis:

There is no significant correlation between male and female students' performance in grammar and reading comprehension.

Table 3 reveals that $r = 0.982$, $n = 165$, $p = 0.002 < 0.05$. Thus, the null hypothesis is rejected. This implies that there is a significant correlation between female students' performance in grammar and reading comprehension. Thus, based on evidence from data analysis there is a significant relationship between female students' performance in grammar and reading comprehension.

There is no significant correlation between male students' performance in grammar and reading comprehension.

Table 4 reveals that $r = 0.942$, $n = 203$, $p = 0.005 < 0.05$. Thus, the null hypothesis is rejected. This implies that there is a significant correlation between male students' performance in grammar and reading comprehension. Thus, based on evidence from data analysis there is a significant relationship between male students' performance in grammar and reading comprehension.

Discussion of Findings

The study investigated gender differences in the performance of male and female secondary- -school students in grammar and reading comprehension in Taraba State, Nigeria. The sample consists of male and female students; with Mean and Standard deviation were used to answer the research questions while an Analysis of Covariance was conducted to assess the hypothesis. The independent variable was Grammar while the moderator variable was gender. The dependent variable was performance in reading comprehension. Therefore, Findings revealed that there is a significant correlation between male students' achievement in grammar and performance in reading comprehension. The finding of Lloyd et al., (2015) is consistent with the present study on reading. Lloyd et al. found that there is a correlation between computer and reading anxiety and self-efficacy based on gender. Borg (2019), for instance, studied the value of grammar in reading comprehension at Columbia. The samples were language students (male and female) learning foreign languages. The students consisted of 122 female and 207 male Colombian students. The study employed the survey research design. A questionnaire was used for data collection. The results showed that a large majority of Colombian students (82%) particularly male students believed that the formal study of grammar was essential for understanding what is being read due to teaching new grammar and developing materials for the students. The present study found that male students perform better in reading comprehension tests. This may be responsible for the

significant correlation found between male students' achievement in grammar and performance in reading comprehension.

Findings revealed that there is a significant correlation between female students' achievement in grammar and performance in reading comprehension. The finding concurs with Pajares (2016) that there is a correlation between computer and reading anxiety and self-efficacy based on gender. The findings also concur with Zoghi, Kazemi, and Kalan (2018) that there is a correlation between Female student's and male students' achievement in reading tests and speaking tests as a result of effective grammar instruction. Despite the practical values of grammar to the mastery of the English language, an average Nigerian female student manifests significant grammatical incompetence in reading Zoghi, Kazemi, and Kalan (2018)

Conclusion

The present study has been able to investigate the gender differences in the performance of male and female secondary-school students in grammar and reading comprehension, to explore their reading comprehension, and to find the correlation between grammar and reading comprehension of learners. A strong correlation between female and male students' performance in grammar and reading comprehension was identified. The larger the grammar store of a learner, the better he or she can perform on reading comprehension. Having strong grammar could increase the overall performance in a reading comprehension test by the learners.

Recommendations

The researcher put forward the following recommendations:

1. It is hoped that the findings can be applied to teaching new grammar and developing materials for the students.
2. Language teachers should focus on effective grammar instruction when they train the students for reading comprehension.

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EFFICACY OF RECIPROCAL LEARNING STRATEGY ON SECONDARY SCHOOL STUDENTS ' ACHIEVEMENT AND RETENTION IN GENETIC IN NUMAN EDUCATION ZONE, ADAMAWA STATE.

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Abstract
The study examined the effect of reciprocal learning strategy on student achievement and retention in public secondary schools in the Numan education zone of Adamawa State, Nigeria. Two research questions were raised to guide the study and two hypotheses were formulated and tested at 0.05 level of significance design adopted for this study was a quasi-experimental non-randomized pre-test, post-test, post-post test control group type. The sample size for the study comprised 227 students out of a population of 2,169 for the 2022/2023 academic session. Purposive and simple random sampling techniques were employed. Data were collected using a researcher-made Genetic Achievement Test (GAT) and Genetic Retention Test (GRT). The reliability of GAT was determined using Kuder- Richardson (k-20) to obtain a value of 0.78 co-efficient value. Data was analyzed using descriptive Statistics of Mean and Standard Deviation to answer the research questions and inferential statistics of Analysis of Co-variance (ANCOVA) was used to test the formulated hypotheses. Findings from the study indicated that students taught using a reciprocal learning strategy achieved higher than their counterparts taught with the conventional method of teaching. The reciprocal learning strategy group retained higher than their counterparts in the conventional method group., Biology teachers should be encouraged to adopt a reciprocal learning strategy in their regular teaching strategy as it may help to enhance significant achievement among students by attending seminars, and workshops. Curriculum planners should endeavour to incorporate reciprocal learning into the strategy of the Biology curriculum Teachers should endeavour to actively engage both male and female students in the teaching and learning process to avoid stereotyping during the learning process.

Keywords: Reciprocal Achievement and Retention in Biology

Introduction
Education remains a vital instrument for sound National growth and development. The quality of education determines the extent to which recipients acquire the skills, knowledge and competencies to contribute effectively to National development. This explains why Imogie (2018) posits that no nation can develop to its full potential and keep pace with modern trends in Science and Technology without an effective and sustainable educational system. This position was mentioned in the National Policy on Education (FGN,2014), which states that educat ion is responsible for empowering its recipients with the appropriate skills, knowledge and c ompetencies needed for sustainable development. Thus, this means that education is a pr erequisite for National growth, global competitiveness and sustainable development of individuals and society at large.

In Nigeria, the subjects offered at the secondary school level are grouped into Science, Social Science, Vocational, and Arts. The science subjects which comprise Biology, Physics and chemistry has been recognized worldwide to be the instrument for technological a dvancement According to Olasehinde (2014) Science subjects are designed to promote a scientifically literate society for technological growth. Biology which is the subject under study is usually regarded as the most popular among science subjects. Hence, it usually attracts the widest enrolment among the science subjects Umoru and Onoja (2017). Heyns (2014) reports that a solid foundation as well

as achievement in Biology will enable students to become familiar w i t h and attain competencies in related fields such as Medical Sciences, Agriculture, Engineering, Microbiology, and Horticulture amongst others. To buttress the aforementioned, Bannon (2012) in an earlier study explained that a solid foundation in Biology and understanding it has a positive effect on the academic achievement of students in science.

Biology is mainly concerned with the study of living things and its importance cannot be overemphasized for numerous reasons such as; it provides an in-depth, scientific understa nding of how living and non-living organisms interact with each other. Tekaya (2012). It gives insights into how diverse life forms are, moreover, Biology encompasses other fields that are related to the sustainability of life, the environment, ecosystem, food quality, causes of diseases, the development of medicines and the study of the human body, amongst others. Furthermore, the significance of Biology can be the key to forming a healthy biosphere where all living things and non-living things have a balanced interaction. The knowledge acquired from Biology can lead to answers to life's fundamental questions such as; How and Where do humans come from? Was it God who created human beings? Or were they formed according to Charles Darwin's theory of evolution?Abdullahi, Jibrin ,Dauda and Danjuma (2017). It is no longer news that Biology is one of the most popular science subjects offered by students who are sitting for the West African Secondary School Certificate Examination (WASSCE). This is because it serves as a pre- requisite to lucrative professions such as Medicine, Nursing, Pharmacy, Forestry, Engineering, Microbiology, Bio-technology, and Fisheries among others. Biology is a basic subject for grasping the complexity of modern technology and scientific advancement in society.

Despite the importance of Biology to man and society at large, empirical evidence has shown that the achievement and retention of students in the subject are at an abysmal state Lambert&Etim(2022) The low achievement in Biology by students in sec ondary schools in Adamawa State is becoming worrisome based on WAEC yearly rankin g between (2018 2021) which indicated persistent failure. The cause of low achievement i n Biology may generally be attributed to students' weakness in recalling of concepts in B iology. Others may be due to a lack of instructional materials, an overloaded syllabus (Osua and Okigbo,2013) use of inappropriate instructional approaches employed by teachers and inadequate laboratory activities (Okoyeti 2014) among others. A study conducted by AbdullahiJibrin Dauda and Danjuma (2017) shows that the major problem prevailin g in the academic achievement and retention of students in science subjects especially in Biology is the mainly inappropriate instructional approach adopted by teachers. According to the authors, the conditional method of Teaching is more popular among teachers.

Based on the data regarding low achievement and retention in Biology, Science Educators are constantly exploring ways to alleviate this ugly situation as noted by Oludipe in Umoru and Onoja(2017). This is by ensuring that the pedagogical approaches which are the function of achievement in a subject, that are employed in the teaching and learning process should be the type that guarantees creative thinking and optimal learning outcomes. Umoru and Adejoh (2013) opined that for Biology to be used as an effective tool for the enhancement of national development there must be a paradigm shift as proposed by curriculum planners from the conventional method of teaching to innovative teaching/learning strategies which allow students to participate actively in the learning process. The authors further enlisted innovative strategies such as field trips, concept-mapping, problem-solving, Hands-on activities, and puzzle-based and constructivist (reciprocal) learning strategies that could enhance students' achievement and retention in subjects (Biology inclusive). However, Biology teachers seem not to be inclined to these recent strategies that are student-centred (engage students in active participation in class activities) rather the conventional teaching method is predominantly used by teachers in the classrooms.

The conventional method is a method of teaching in which the teacher delivers the lesson to students with little or no active participation of the students. It is a teacher-centred approach involving largely a one-way form of communication from the teacher to the students. For this reason, it is termed a didactic and authoritative approach because most of the talking is carried out by the teacher while the students are mere passive listeners, taking down notes. The conventional method of teaching is a traditional way of teaching that involves teachers asking students to recite and memorize the content of the study and does not engage the students in the learning process. It is against this background that the researcher in this study intends to useonstructivist (reciprocal) learning strategy to improve students' achievement and retention in Biology(Okoro,2017).

The conventional method according to is the art of telling factual information, principles and theories to the audience without minding whether the audience understands the information or not and learners are expected to add flesh on the principles or the theories on their own through personal research. There is little or no students participation, students are merely required to listen and understand the information being given and that is why it is also called teacher centered method (Okoro, 2017). In other words, it is an instructional method where an instructor solely possesses the knowledge on a given topic and delivers all relevant information to students verbally. Several science educators have outlined methods of teaching science (Alamina, (2014), One of these methods is the constructivist learning strategy.

Constructivist is a model form of learning which consists of many types of learning strategies namely; inquiry-based, 7E, 5Ecycle, 3E Analogy, and reciprocal among others. For this study, the researcher used a reciprocal learning strategy. The reciprocal learning strategy uses different small groups of students in a learning session to work together in order to maximize each other's learning. Numerous studies have shown that reciprocal learning en hances positive and more supportive relationships with peers, positive attitudes towards the subject area and high self-respect or esteem learnt. It is a student-centred approach and this has brought a shift from the teacher-centered conventional approach to teaching. The teacher is a facilitator in a reciprocal class where classroom activities are organized so that students can interact with and learn from each other as well as the teacher and the world around them. It is an arrangement in which students work in mixed-ability groups and are rewarded on the bas is of the success of the group as a whole. Constructivist learning strategy has been a very p owerful model for explaining how knowledge is produced in the world as well as how st udents learn. According to Kincheloe (2013), constructivism has often been misinterprete d and misused resulting in learning that neither challenges students nor addresses their needs.

In the past few decades, a constructivist has emerged as a very powerful model for explaining how knowledge is produced in the world but is rather constructed by human beings in their interaction with the world. The students therefore can learn more of what is taught and achieve well in the subject. Sani and Dajal(2022) conducted a study on the reciprocal approach and posit that it is a good one that provides students opportunities to interact between teacher and students as well among students in the task of bringing meaning to the context as well as enabling the students to achieve well in their subjects. Achievement could be viewed as the result of an examination written by students which is often a reflection of learning. It could also be regarded as the ability to perform a given role effectively. Adunola (2012) posits that achievement of stated objectives in teaching and learning is always associated with using the appropriate instructional method. To achieve this, Adenoma (2013) stated that teachers need to be conversant with numerous teaching strategies that can help students retain learnt concepts longer and apply the knowledge effectively where necessary.

Retention is the ability to recall or remember learnt concepts after some time. Martinez (2013)

defined retention as the ability of students to retain information learned in a course previously and to keep the learner in programmed until the achieve their goals. Retention may depend on the learning strategy, students' interest and attitude of the learners or the meaningfulness of the material to the students. According to Adeonu, Ugwuanyi and Okeke (2021) a study revealed a significant difference in the retention of students taught physics using flipped classrooms and power point instructional approach. On the contrary, Gam bari Akawo and Gana (2014) in an earlier study revealed no significant difference in the retention of students taught using conventional methods. In an attempt to improve students' achievement and retention in related areas, scholars have reported the effectiveness of the constructivist learning cycle in related areas. For instance, Agboghoroma and Oyovwi (2015) report that the adoption of an Innovative approach such as the 7Es approach improves students' learning outcomes and retention abilities Filgona and Sababa (2017) also confirmed that constructivist teaching strategies have the potential to improve students' achievement and retention in all spheres of cognitive dom ain in Physics and Geography. Along the same line, Muhammad, Efe and Salisu (2021) estab lished that a constructivist teaching strategy enhances students' retention in Biology. It is on this premise that the researcher in this study used a constructivist (reciprocal) learning strategy to ascertain its effectiveness on students' achievement and retention in Biology irrespective of gender.

Genetics being the focus of this study is one compulsory topic studied in Biology; it is a very important unit in secondary school Biology curriculum because the study of genetics has many practical applications to human lives from the use of Deoxyribonucleic acid (DNA) to know the paternity of a child, the discovery of genetic diseases, such as sickle cell anaemia, cystic fibrosis and fragile x syndrome. (Lewis &Kattmann 2014). A thorough understanding of the human genome can have medical, social, and improvement on plant/crop varieties. The rapid advancement in genetic research and the direct role that genetics plays in human health and reproduction make it a scientific discipline that everyone needs to understand. Yet, studies reveal that students fail to critically understand the genetic knowledge taught in classrooms. This lack of understanding translates to an inability to apply basic knowledge to their everyday lives and subsequently low achievement on the subject (Lewis &Kattmann 2014). According to the Biology Chief Examiner's Report (2018), students achieve poorly in genetics because of lack of understanding of the concepts and this has led to the overall failure in the subject which could be a result of the instructional approach employed in teaching.

The reciprocal learning strategy uses different small groups of students in a learning session to work together to maximize each other's learning. Numerous studies have sho wn that reciprocal learning enhances positive and more supportive relationships with peers, positive attitudes toward the subject area and high self-respect or esteem are learned. It is a student-centered approach. Reciprocal is an instructional activity (a type of constructivist model) in which students become the teacher in small group learning sessions. Teachers guide the group discussions using four strategies: summarizing, question generating, clarifying, and predicting.

Purpose of the Study

The purpose of this study is to determine the effect of reciprocal learning strategy on secondary school students' achievement and retention in Biology in Numan Education Zone of Adamawa State, Nigeria Specifically, the study sought to:

1. Determine whether the use of a reciprocal learning strategy will improve students' achievement in genetics in the Numan Education Zone of Adamawa state.
2. Determine whether the use of a reciprocal learning strategy will improve students' retention in genetics in the Numan Education Zone of Adamawa state.

Research Questions

The following research questions were raised to guide the study.

1. What are the mean achievement scores of students taught genetics using reciprocal learning

strategy and those taught with conventional method?
2. What are the mean retention scores of students taught genetics using reciprocal learning strategy and those taught using conventional method?

Research Hypotheses
The following null hypotheses were formulated and tested at a 0.05 level of significance.

Ho_1. There is no significant difference in the mean achievement scores of students taught genetics using the reciprocal learning strategy and their counterparts taught same concepts using conventional method.

Ho_2. There is no significant difference in the mean retention scores of students taught genetics using reciprocal learning strategy and their counterparts taught using the conventional method.

Materials and Methods
Research Design
This study employed the pre-test, post –test non-randomized quasi-experimental design. This is because it is not possible to have a complete randomization for the researcher to meet all the conditions of a true experiment. Thus, the intact class was used.
Area of the Study
The study was conducted in the Numan Education zone of Adamawa State. The choice of the study area was due to the students' inability to obtain credit passes in Biology which has prevented students from reading science related courses of their choice in tertiary institutions.

Population of the Study
The targeted population of the study comprised of 2,169 students of all the senior secondary 3 Biology students in the study area.

Sample and Sampling Technique
The sample size of 227 students was randomly drawn from four senior secondary schoolsusing purposive and simple random sampling Technique.

Instrumentation
Two intact classes were assigned from each school and treatment was given to each of them that simply that one class was assigned reciprocal learning strategy and the other one to conventional teaching method. Genetic Achievement Test (GAT) Genetic Retention Test(GRT) was a forty multiple choice questions developed by the researchers from the syllabus Two research assistants assisted in the teaching and assessing the students using a well developed lesson plan.

Reliability of the Instrument
Pre-test was administered to the students before the commencement of the treatment this was to ascertain the students level of understanding of the topic. After this both groups were taught genetics for a period of 10 lesson within four weeks. At the end of lesson periods, the post-test was administered to the students, and after a period of weeks another post-post-test was administered. The researcher marked and recorded the scores which were used with the pre-test scores for data analysis. Mean and standard deviation was used to answer the research questions while Analysis of covariance (ANCOVA) was used to test the hypotheses at 0.05level of significance.

RESULTS
Research Question One
What is the difference in the mean achievement scores of students taught genetics using

reciprocal learning strategy and those taught with conventional method?

Table 1

Mean Achievement and Standard Deviations of Pretest and Posttest of Experimental and Control Groups

Group	n	Pretest Mean	Std.Dev.	Posttest Mean	Std.Dev.	Mean Gain
RLS	135	18.74	5.04	46.27	5.33	27.53
CM	92	19.85	3.89	31.15	4.53	11.30
Mean Difference		1.11		15.12		16.23

Results of Table 1 show that the posttest mean achievement scores of students taught Genetics with Reciprocal Learning Strategy is 46.27 with standard deviation of 5.33, while that of those taught with Conventional Method is 31.15 with standard deviation of 4.53. The difference between the pretest and posttest achievement mean scores of Reciprocal Learning Strategy group is 27.53 and that of the Conventional Method group is 11.30. These differences show what were achieved by the two groups. There is also a difference of 15.12 between the posttest mean scores of the two groups; which is in favour of the Reciprocal Learning Strategy group; with mean gain of 16.23. The implication is that the students taught Genetic with Reciprocal Learning Strategy gained in achievement more than their Conventional Method counterparts.

Research Question Two

What is the difference in mean retention scores of students taught genetics using reciprocal learning strategy and those taught with conventional method?

Table 2

Mean Retention and Standard Deviations of Pretest and Post-Posttest of Experimental and Control Groups

Group	n	Pretest Mean	Std.Dev.	Post-Posttest Mean	Std.Dev.	Mean Gain
RLS	135	18.74	5.04	44.68	5.72	25.94
CM	92	19.85	3.89	27.35	5.46	7.50
Mean Difference		1.11		17.33		18.44

Results of Table 2 show that the post-posttest mean scores of students taught Genetics with Reciprocal Learning Strategy is 44.68 with standard deviation of 5.72, while that of those taught with Conventional Method is 27.35 with standard deviation of 5.46. The difference between the pretest and post-posttest scores of Reciprocal Learning Strategy group is 25.94 and that of the Conventional Method group is 7.50. These differences show what were retained by the two groups. There is also a difference of 17.33 between the post-posttest mean scores of the two groups; which is in favour of the Reciprocal Learning Strategy group; with mean gain of 18.44. The implication is that the students taught Genetic with Reciprocal Learning Strategy gained in retention more than their Conventional Method counterparts.

Hypothesis One

There is no significant difference in the mean achievement scores of students taught genetics using the reciprocal learning strategy and their counterparts taught the same concepts using the

conventional method.

Table1
One-way Analysis of Covariance of the Mean Achievement Scores of the Experimental and Control Groups

Sources of Variation	Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	12523.502[a]		26261.751	248.135	.000	.689
Intercept	17271.923	1	17271.923	684.436	.000	.753
Pretest	12.028	1	12.028	77	.491	.002
				.		
			4			
Group	**12429.110**		**112429.110**	**492.529**		**.000**
.687	5652.701		22425.235			
Error						
Total	384021.000	227				
Corrected Total	18176.203	226				

Table 1 is one-way ANCOVA between groups analysis of covariance to compare the effect of reciprocal learning strategy and conventional method on students' achievement in Genetics. The result F (1, 224) □ 492.529, P □ .000 < 0.05 shows that the two groups differ significantly. Thus, the null hypothesis is not retained. Therefore, there is a significant difference between the mean achievement scores of students taught Genetics using reciprocal learning strategy and their counterparts taught same concepts using conventional method. The effect size (eta square □ .687) is high and it indicates that 68.7% of the difference in the mean score is based on the strategy used.

Hypothesis Two
There is no significant difference in the mean retention scores of students taught genetics using the reciprocal learning strategy and their counterparts taught the same concepts using the conventional method.

Table 2
One-way Analysis of Covariance of the Mean Retention Scores of the Experimental and Control Groups

Sources of Variation	Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	16441.545[a]	2	8220.772	259.738	.000	.699
Intercept	15340.048	1	15340.048	484.674	.000	.683
Pretest	2.520	1	2.520	.080	.778	.000
Group	**16259.078**	**1**	**16259.078**	**513.711**	**.000**	**.696**
Error	7089.654	224	31.650			
Total	345418.000	227				
Corrected Total	23531.198	226				

Table 2 is one-way ANCOVA between groups analysis of covariance to compare the effect of reciprocal learning strategy and conventional method on students' retention in Genetics. The result F (1, 224) □ 513.711, P □ .000 < 0.05 shows that the two groups differ significantly. Thus, the null hypothesis is not retained. Therefore, there is a significant difference between the mean retention scores of students taught Genetics using reciprocal learning strategy and their counterparts taught same concepts using conventional method. The effect size (eta square □ .696) is high and it indicates that 69.6% of the difference in the mean score is based on the strategy used.

Discussion of Findings

The discussion of this study is based on the variables examined which were guided by the research questions and hypotheses respectively. The findings of the study revealed that there was a significant difference in the mean achievement scores of students taught genetics using reciprocal learning strategy than their counterparts that were exposed to the conventional method. The improvement in the student's achievement could be attributed to the student's engagement and interaction with each other in the course of the learning. This finding is in agreement with Sani and Dajal(2022) Who reported that reciprocal strategy provides opportunity for students to interact with each other thereby enabling them to achieve well in their studies. The findings are also in consonance with the findings of Ginga, Mohammed and Usman's (2019) study which revealed that there was a significant difference in the performance of students exposed to a reciprocal learning strategy.

Findings from the study again revealed that there was a significant difference in the mean achievement scores of male and female students exposed to reciprocal learning strategy in favour of the male. This finding is an agreement with Wai and Watt, (2016) who posited that differences exist between male and female achievement and this could be as a result of the teaching strategy employed, as well as the dominant patriarchal world views of the society. In the same line, Adigun etal, (2018) in a study found significant difference in the achievement of students in favour of male. However, the findings contradicted with the study of Gingaletal, (2019) that established no significant difference in the performance of male and female students exposed to reciprocal teaching strategy.

The findings of this study again revealed that there was a significant difference in the mean retention scores of students taught Genetics using reciprocal Learning Strategy than their counterparts exposed to conventional teaching method. The finding is in agreement with Agboghoroma and Oyovoi (2015) who reported that adoption innovative strategy improves students' learning outcomes and retention ability. In the same line, the study agrees with the study of Usman etal (2021) who established that students' retention improve significantly when learner-cantered strategies are employed more than the lecture method.

Conclusion

1. Based on the results obtained from the study, it was concluded that using Reciprocal learning strategy enhanced students' achievement and retention in Genetics. This was because the Reciprocal learning strategy was more effective as a learner centred than the conventional learning method which was passive and teacher dominated.
2. This Reciprocal Learning should be considered a useful addition to the variety of existing strategies that attempts to involve learners more in their own learning. It should be noted that movement towards self-directing learning takes a lot of time. Since learners are charged to take the responsibility of their own learning instead of been passive listeners in the teaching and learning process.

Recommendations

1. Teachers should use Reciprocal learning approach during the teaching and learning processes

of various topics in Biology to improve student's achievement and retention in the subject generally.

2. Science Teachers' Association Nigeria (STAN) should organize periodic conferences, seminars and workshops where teachers would be exposed to Reciprocal learning strategy for better application and subsequent improvement of students' achievement and retention in Biology.

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EFFECT OF ETHNOLOGICAL INSTRUCTIONAL STRATEGY ON SECONDARY SCHOOL STUDENTS PERFORMANCE AND RETENTION IN (CHEMISTRY) IN TARABA STATE, NIGERIA

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Abstract
This study examined the Effect of Ethnological Instructional Strategy on Secondary School Students' Performance and Retention in Chemistry Taraba State, Nigeria. Three research questions and three hypotheses guided the study respectively. The study adopted pretest, Posttest and Post-Posttest quasi-experimental research design. Intact classes were used. The population for the study was 2,646 chemistry students in Jalingo education Zone. The sample of 157 chemistry students made up of 87 male and 70 females. The instrument used for the study named: chemistry performance test. The instrument was validated by three experts and pilot tested and analyzed. The reliability coefficient was 0.83 for chemistry performance test, scale using kr-20. Mean and standard deviation were used to answer research question while ANCOVA was used to test hypotheses at significant level of 0.05. Findings of the study revealed that the difference in the mean performance scores of students taught Chemistry using Ethnological Instructional Strategy and those taught using Guided Discovery incomplete amongst others. It is thereby recommended that chemistry Teachers should be encouraged to use Ethnological Instructional Strategy chemistry teacher's trainees should be trained on the use of ethnological instructional strategy which could improve academic performance. The researcher also recommends that Chemistry teacher trainees should be trained on the use of ethnological strategy and student should be encouraged to practice ethnoscience of topic taught after class and that curriculum planners, developers and chemistry educators should take cognizance of ethnological instructional strategy as an innovative and effective pedagogical strategy in chemistry classroom.

Keywords: Ethnological, Instructional. Strategy, Performance, Gender and Retention

Introduction
Stem and science are commonly divided into three major branches: natural, social, and formal science. Each branch comprises various specialized yet overlapping scientific disciplines that often possess their nomenclature and expertise. Natural science is further divided into life science and physical science. Physical science is further divided into specialized disciplines like Physics, Chemistry, Astronomy, and earth science. This study focuses on the teaching of Chemistry being a branch of science using strategies called ethnological instruction and the guided discovery method. Chemistry as a science subject is an area of learning through which the development and progress of any nation are based as submitted by Ezeano and Ugwo (2021). Odoh (2018) stated that Chemistry deals with the composition and structure of matter and the principle governing the changes matter undergoes. Chemistry describes how one or two substances interact with one another to give rise to different substances. Renninger, K.A. (2016) sees Chemistry as an integral part of the world culture. Oluwatosin et al (2017) define Chemistry as a systematic and logical approach to discovering how things in the universe work. *Oriaifo (2015)* stresses that Chemistry is a subject that equips learners with specific knowledge, skills, and attitudes that enable students to become useful to themselves and society at large. Chemistry, as construed by *Oriaifo (2015)* is a branch of science that deals with the study of the structure and composition of matter. This matter exists in three forms or states solid, liquid, and gas. Examples of solid matter are stones, cassava, plates, and sand; examples of liquid states of matter are water, vegetable oil, palm wine, and petrol and examples of gaseous states of matter are steam from our boiling water, mist and

cloud, cooking gas, and so on. Oriaifo (2015) further mentioned that Chemistry is often described as a central science subject because the effective study of Chemistry lays a solid foundation for the scientific and technological development of all learners of sciences. On the contrary, Salviejo, Aranes, and Espinosa (2014) noted that, common observation shows learning Chemistry, as a discipline creates negative feedback for most students at the secondary level. Salviejo, Aranes, and Espinosa (2014) lamented that Chemistry is one of the hated subjects among Science subjects, and students would likely fail to complete the requirements and get low performances in both academic and conceptual reasoning skills. The importance of Chemistry education noted that Chemistry equips the learners with specific knowledge, skills and attitudes that enable the students to become useful to themselves and society as cited by Oriaifo (2015). Furthermore, a minimum of credit pass in Chemistry, Biology, Physics, Mathematics and English language is a prerequisite for a student to gain and further study into the universities in all pure and applied science-related fields like Medicine, Pharmacy, Fishery and Aquaculture, Agriculture, Biological Science, Architecture, Land and survey, engineering and all technical works.

This shows that effective teaching and learning of Chemistry in secondary schools is an important subject that school administrators and teachers must not take lightly. Rosa and Orey (2014) define ethnological strategy as Chemistry that deals with local practices that are scientifically inclined. The authors further opined that ethnological strategy also has to do with the scientific study of a particular group of people, their cultural beliefs, practices and their socioeconomic activities. Indra and Bitwell (2016) opined that ethnological instruments in chemistry are practised in our day-to-day lives and outside the school. The authors also see ethnological instructions in chemistry as various chemically related cultural and community practices that are scientifically inclined. Edoji and Peter (2017) defined ethnological instructions as the strategy and practices of specific cultural groups in the course of dealing with their environmental problems and activities using their ideologies. Anderson (2019) regards ethnological instructional strategy as a means of organizing chemistry instruction based on cultural context. To enhance students' knowledge and skills about Chemistry as an everyday experience, there is a need to use ethnological methods of instruction. Ethnology has to do with the scientific study of a particular group of people, their cultural beliefs and practices and their socioeconomic activities. Furthermore, in our Nigerian cultural setting domestic responsibilities are often assigned by gender. Efe (2015), opined that cultural practices such as hunting, fishing and tapping palm wine from palm wine trees are reserved for males while sieving corn flour, cooking, washing kitchen dishes and sweeping the compound are reserved for females. The assignment of responsibilities and roles in Nigerian and in fact, in African cultural practices may lead to gender dichotomy in the understanding of some chemistry concepts when teachers use the day-to-day activities male and female students carry out in their private and family settings to pass instructions during Chemistry lessons. Sanga (2014) opined that these principles are not only practiced in urban areas, even in our local villages but Chemistry is also being practiced. For example, in most villages, local soap is made from ashes of burnt plantain peels and uses bleached palm oil, quality drinking water in the village has been a problem in our local villages, so villages use alum to purify their water for drinking. Ashes from the firewood and sand are mixed to scrub the bark of the kitchen pot when washing. Oluwatosin, *et al* (2017) defines ethnological chemistry as the study of Chemistry practices of specific cultural groups in the course of dealing with their environmental problems and activities using their ideologies. According to Anderson (2019), an ethnological instructional strategy can be described as a means of organizing chemistry instruction based on diverse cultural contexts. Ethnological strategy in chemistry curriculum is an instructional strategy that draws on traditional culture while focusing attention on the chemistry needed by the learners in an integrated society. In other words, an ethnological instructional strategy is an approach adopted by the teacher in the process of teaching Chemistry with learners' culture, background, and understanding by explaining and managing situations and activities arising in their environment. In this regard, the ethnological strategy in this study aims to use already existing familiar mixture separation

techniques activities in the learners' culture, environment, background, reasoning and experiences, the book "Educate or Perish: Africa's Impasse and Prospects" states: When lost, it's better to return to a familiar point before rushing on (Ki-zerbo, 2014). The inclusion of Ethnological instructions in Chemistry lessons would be of great value in addressing everyday challenges and avoiding rote learning.

Some important variables determine students' academic performance in Chemistry, Performance is an important factor that is influenced by teaching strategies. *Mohammed (2021)* sees academic performance as the process of getting something done effectively and successfully using effort and skills to accomplish the academic goal. Falade (2018), views performance as measurable changes in students' behaviour in academic because of exposure to a given concept. According to Abdullah (2017), academic performance is a knowledge gained which is assessed by marks by teachers and or educational goals set by students and teachers to be achieved over a specific period. Japhet (2020) opined that to determine performance, there is a necessity for standard measurement.

Retention is the ability to keep to the memory bank what one has learned and to retrieve it correctly by way of saying it, writing, doing or demonstrating it for others to read, hear or see. The ability to comprehend, appreciate, and recall correctly and be able to put into use learnt facts and procedures and to carry them out correctly is the test of retention of any learnt curriculum content (Febkat, 2022). Much research is available on retention and how to test retention in students in an instructional strategy in Chemistry, and science as applicable in any other instructional programme. Retention on the other hand refers to the ability of the learners to recall information, ideas or learning activities later that he/she may ask to mention, write or remember after some time. Bichi (2014) define retention as the ability to maintain information and later recall information or knowledge gained after learning. Alake (2015) sees retention as the ability to store information that can easily be recalled from short-term memory and long-term memory. Retention is the ability to retain and consequently remember things experienced or learned by an individual at a later time. According to Odoh, C. (2016), retention is the ability to remember facts and information Retention, on the other hand, refers to the ability of the learners to recall information, ideas, or learning activities at a later time which he/she may be asked to mention, write or remember after some time. Bichi (2014) defined retention as the ability to maintain and later recall information or knowledge gained after learning. Alake (2015) sees retention as the ability to store information that can be easily recalled from short-term memory and long-term memory. Therefore, retention is a very important aspect of students learning or rather an aspect of measuring the cognitive ability of learners. A retention test occurs after learning has taken place. Magnuson, (2014) asserted that the subject is usually brought back at varying periods days, or weeks after learning the task to determine how much the client/student has retained.

The Guided Discovery Method is a powerful instructional approach that guides and motivates learners to explore information and concepts to construct new ideas, identify new relationships, and create new models of thinking and behaviour, Adams & Freeman (2016); O'Neil& Pegrum (2018). Guided Discovery Method is a method that encourages learners to explore the content through the use of concrete experience, Uwameiyi and Ogunbemeru (2015). Therefore, the guided discovery method is a method that is characterized by convergent thinking, and the method also enables students to make references with limited guidance from the teacher with the opportunity to discover principles or explanations Nguyen (2018) (Spence, Jensen, and Shepherd 2014). Given the above, the archaic and ineffective method which is devoid of the teacher and his authority, his domineering functions and activity in the teaching process should be deemphasized based on its characteristics of being leader-centered, leader-active, students passive, and content emphasis (O'Neil et al,(2018), Uwameiye and Ogunbemeru, (2005)). One good way of carrying out a change in methods of teaching a subject is to discover through experimentation and empirical

evidence that such methods can yield effective instructional outcomes, Mee, Sui, Jano, & Husin, like this case study. The teaching method is defined by Dorgu (2015) as the strategy by which a teacher delivers his/her subject matter to the learner based on predetermined instructional objectives to promote learning in the students. Professionally speaking, teaching methods can also be said to be the application of principles and methods by teachers for successful and effective curriculum delivery. Teaching methods are grouped into two broad categories, namely: the teacher-centered and student-centered methods. Between the teacher and student-centered methods of teaching is the guided discovery teaching method that bears some of the characteristics of both methods. In guided discovery, teaching is viewed as a process of student-teacher interaction; teachers serve the dual role of a teacher and facilitator of learning; students are considered participants in the process, and knowledge is constructed by students within the teachers' framework (Kember, 2017). In this method of teaching the principal content of learning is not directly exposed by the teacher but left to be discovered by the learners, making the teacher a guardian and students active participants in the learning process. A study on the efficacy of the guided discovery method of teaching English Studies in Upper Basic Education is necessary now because this subject cuts across the teaching and learning of all other subjects at this level. Upper Basic education students are children undergoing the Universal Basic Education Programme. The Universal Basic Education (UBE) Programme is a nine (9) year basic educational programme, designed by the Federal government for Nigerian children. It covers six (6) years of Primary Education and three.
(3) years of Junior Secondary Education.

Despite the various teaching methods and strategies employed by science teachers, such as discovery, questioning, field trips, lectures, discussions, cooperative learning, and problem-solving, secondary school students in Nigeria continue to perform poorly in Chemistry, as evident in the consistently low scores in WAEC, NECO, and SSCE exams (Oraifo, 2019). This persistent poor performance has resulted in denied opportunities for higher education admissions. The WAEC Chief Examiners' reports from 2019 to 2023 highlighted the alarming trend of poor enrollment and performance in Chemistry (Appendix, page 102). Therefore, there is an urgent need to explore innovative, student- centered approaches like ethnological strategy to enhance performance, and retention in Chemistry. This study aims to investigate the effectiveness of ethnological strategy in addressing this longstanding problem and improving Chemistry education outcomes.

Purpose of the Study

The main purpose of this study was to find out the effect of Ethnological Instructional Strategy on senior secondary chemistry students' Academic Performance and Retention in Jalingo Education Zone, Taraba State. Specifically, the study will seek to:

21. Determine the mean performance scores of students taught Chemistry using Ethnological Instructional Strategy (EIS) about their counterparts taught the same concepts using the Guided Discovery Method.
22. Determine the difference in the mean retention scores of students taught Chemistry using ethnological instructional strategy concerning their counterparts taught the same concepts using the Guided Discovery Method.
23. Determine the difference between male and female students' performance scores when taught Chemistry Concepts using an Ethnological Instructional Strategy.

Research Questions

The study seeks to answer the following research questions:

1. What are the mean performance scores of students taught Chemistry using Ethnological Instructional Strategy (EIS) compared to their counterparts taught the same concepts using the Guided Discovery Method

2. What is the difference in the mean retention scores of students taught Chemistry using ethnological instructional strategy compared to their counterparts taught the same concepts using the Guided Discovery Method?
3. What is the difference between male and female students' mean performance scores when taught Chemistry Concepts using an Ethnological Instructional Strategy?

Hypotheses

The following null hypotheses were tested at $p<0.05$ level of significance.

$H0_1$. There is no significant difference in the mean performance scores of students taught Chemistry using the Ethnological Instructional Strategy compared to their counterparts who taught the same concepts using the Guided Discovery Method.

$H0_2$. There is no significant difference in the mean retention scores of students taught Chemistry using the Ethnological Instructional Strategy compared to their counterparts who taught the same concepts using the Guided Discovery Method.

$H0_3$. There is no significant difference between male and female students' mean performance scores when taught Chemistry Concepts using an ethnological instructional strategy.

Materials and Methods Research Design

The study adopted a quasi-experimental design of the pre-test posttest and post- posttest. Specifically, pretest, posttest, post-posttest, and non-equivalent comparative group design were employed for the study.

Area of the Study

The study was carried out in the Jalingo Education Zone of Taraba State, Nigeria.

Population of the Study

The population of this study consisted of 2,646 SS2 Chemistry students from the 2022/2023 academic session in the 47 public secondary schools across the three local government areas in Jalingo Education Zone, Taraba State, Nigeria.

Sample and Sampling Technique

The sample size for this study was 157 students, consisting of 76 males (48.4%) and 81 females (51.6%). A multi-stage sampling procedure was employed in this study. The stages involved were:
Stage 1: Selection of Local Government Area
Jalingo Local Government area was randomly selected from the three local government areas in the Education zone.
Stage 2: Selection of Secondary Schools
Two public secondary schools were randomly selected from the Jalingo Local Government area.
Stage 3: Selection of Study Groups was done by using simple random sampling. Government Science Secondary School was assigned to the ethnological approach (EG), while Government Day Secondary School was assigned to the conventional approach (CG).

Instrumentation

This study used the Chemistry Performance Test (CPT). The CPT was adapted from the West African Senior School Certificate Examination (WASSCE) 2019-2023. It has established high validity and reliability and is based on the curriculum content for SS II Chemistry. The CPT was used to assess students' understanding of physical and organic chemistry. The CPT consists of multiple-choice objective questions, with each option comprising four choices (A-D). The test contains four questions. The CPT was administered as a post-test, while the Chemistry Retention Test was administered as a post-post-test.
The Chemistry Interest Survey was used in the pretest.

Reliability of the Instrument

A pilot test of the instrument was conducted at Government Day Secondary School Zing, in another Education Zone of Taraba State, Nigeria. The purpose of the pilot test was to estimate the reliability and workability of the research instrument, design, and procedures. An intact class of 40 SS II Chemistry students was used for the pilot test. The Chemistry Performance Test (CPT) was administered to this group to assess its reliability. The Kudder Richardson formula 20 (Kr-20) was used to determine the reliability of the CPT. The reliability coefficient was found to be 0.83, indicating a high level of internal consistency. The reliability index of the Chemistry Students' Performance Test (CPT) was found to be highly reliable for this study.

Results

Research Question One

What is the mean performance scores of students taught Chemistry using Ethnological Instructional Strategy (EIS) compared to their counterparts taught the same concepts using the Guided Discovery Method

Table 1: Mean and Standard Deviation of Performance Scores of Students taught Chemistry Using Ethnological Instructional Strategy and Guided Discovery Method.

Method		Pre Test	Post Test	Mean Gain
Ethnological instructional strategy	Mean	9.51	18.83	9.32
	N	76	76	
	Std. Deviation	3.23	1.97	
Guided Discovery Method	Mean	8.93	14.03	5.10
	N	81	81	
	Std. Deviation	3.10	2.92	
Mean Difference		0.58	4.80	4.22

Table 1 presents the performance scores and standard deviations of students taught Chemistry using ethnological instructional strategy and Guided Discovery Method.

The results show Ethnological instructional strategy (n = 76): pre-test mean = 9.51 (SD = 3.23), post-test mean = 18.83 (SD = 1.97), mean gain = 9.32

And Guided Discovery Method (n = 81): pre-test mean = 8.93 (SD = 3.10), post-test mean = 14.03 (SD = 2.92), mean gain = 5.10.

The mean performance scores of students taught using the ethnological instructional strategy were significantly higher than those taught using the Guided Discovery Method, with a difference of 4.22 in favor of the ethnological instructional strategy.

Research Question Two

What is the difference in the mean retention scores of students taught Chemistry using ethnological instructional strategy compared to their counterparts taught the same concepts using the Guided Discovery Method?

Table 2: Mean and Standard Deviation of Retention Scores of Students taught Chemistry Ethnological instructional strategy and Guided Discovery Method

Method		PreTest	Post Post Test	Mean Gain
Ethnological instructional strategy	Mean	9.87	9.51	0.36
	N	76	76	
	Std. Deviation	3.23	2.90	
()Guided Discovery Method	Mean	9.55	8.93	0.62
	N	81	81	
	Std. Deviation	3.10	2.65	
Mean difference		0.58	0.32	0.26

Table 2 presents the retention scores and standard deviations of students taught Chemistry using two instructional strategies: ethnological instructional strategy and Guided Discovery Method. The Sample Sizes for the Ethnological instructional strategy: n = 76 and Guided Discovery Method: n = 81. The Retention Scores for the Ethnological instructional strategy Pre-test: mean = 9.51, SD = 3.23, Post-test: mean = 9.87, SD = 2.90 and Mean gain = 0.36; and The Retention Scores for Guided Discovery Method Pre-test: mean = 8.93, SD = 3.10, Post-test: mean = 9.55, SD = 2.65 and Mean gain = 0.62. A comparison of Retention Scores shows that the mean retention scores of students taught using the Guided Discovery Method were slightly higher than those taught using the ethnological instructional strategy with a difference of 0.26 in favor of the Guided Discovery Method.

Research Question Three

What is the difference between male and female students' mean performance scores when taught Chemistry Concepts using an Ethnological Instructional Strategy?

Table 3: Mean and Standard Deviation of Performance Scores of Male and Female Students taught Chemistry Using Ethnological Instructional Strategy

Gender		PreTest	Post Test	Mean difference
	Mean	8.71	18.29	9.58
Male	N	47	47	
	Std. Deviation	2.61	1.79	
	Mean	10.25	19.32	9.07
Female	N	29	29	
	Std. Deviation	3.58	2.00	
Mean difference		1.54	1.03	0.51

Table 3 presents the mean performance scores and standard deviations of male and female students taught Chemistry using an ethnological instructional strategy.

The results show Male students (n = 47): pre-test mean = 8.71 (SD = 2.61), post-test mean = 18.29 (SD = 1.79), mean gain = 9.58

And Female students (n = 29):

pre-test mean = 10.25 (SD = 3.58), post-test mean = 19.32 (SD = 2.00), mean gain = 9.07.

The mean performance scores of male students were slightly higher than those of female students, with a difference of 0.51 in favor of males.

Hypothesis One:

There is no significant difference in the mean performance scores of students taught Chemistry using the Ethnological Instructional Strategy compared to their counterparts who taught the same concepts using the Guided Discovery Method.

Table 4: ANCOVA of Mean Performance Scores of Students Taught Chemistry Using Ethnological Instructional Strategy and Guided Discovery Method

Dependent Variable: PostTest

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	1824.173[a]	2	912.087	431.558	.000	.820
Intercept	2313.945	1	2313.945	1094.853	.000	.853
PreTest	732.392	1	732.392	346.534	.000	.647
Method	926.931	1	926.931	438.581	.000	.699
Error	399.447	189	2.113			
Total	55657.000	192				
Corrected Total	2223.620	191				

a. R Squared = .820 (Adjusted R Squared = .818)
Table 4reveals that F (1, 189) = 438.58; p = 0.000< 0.05. Since the p-value is less than 0.05, the null hypothesis is rejected. This implies that there is a significant difference in the mean performance scores of students taught Chemistry using the Ethnological Instructional Strategy and those taught using the Guided Discovery Method. The partial Eta square of 0.699 was obtained for the method meaning that 69.9% of the students' mean performance scores can be attributed to the Ethnological Instructional Strategy employed in the teaching of Chemistry.

Hypothesis Two
There is no significant difference in the mean retention scores of students taught Chemistry using the Ethnological Instructional Strategy compared to their counterparts who taught the same concepts using the Guided Discovery Method.

Table 5: ANCOVA of Mean Retention Scores of Students Taught Chemistry Using Ethnological Instructional Strategy and Guided Discovery Method
Dependent Variable: Post Post Test

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Squared	Eta
Corrected Model	506.584[a]	2	253.292	48.960	.000	.341	
Intercept	499.694	1	499.694	96.588	.000	.338	
PreTest	501.679	1	501.679	96.971	.000	.339	
Method	.029	1	.029	.006	.941	.000	
Error	977.786	189	5.173				
Total	19639.000	192					
Corrected Total	1484.370	191					

a. R Squared = .341 (Adjusted R Squared = .334)
Table 5 shows that F (1, 189) = 0.01; p = 0.94 > 0.05. Since the p-value is greater than 0.05, the null hypothesis is not rejected. This implies that there is no significant difference in mean retention scores of students taught Chemistry using the Ethnological Instructional Strategy and those taught using the Guided Discovery Method. The partial Eta square of
0.00 was obtained for the method meaning that 0.0% of the students' mean retention scores can be accounted for by the Ethnological Instructional Strategy employed in the Chemistry classroom. Therefore, the Ethnological Instructional Strategy does not encourage retention of knowledge at all.

Hypothesis Three
There is no significant difference between male and female students' mean performance scores when taught Chemistry Concepts using an ethnological instructional strategy.

Table 6: ANCOVA of Mean Performance Scores of Male and Female Students Taught Chemistry Using Ethnological Instructional Strategy
Dependent Variable: PostTest

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Squared	Eta
Corrected Model	246.502[a]	2	123.251	79.124	.000	.606	
Intercept	2165.841	1	2165.841	1390.422	.000	.931	
PreTest	218.256	1	218.256	140.115	.000	.576	
Gender	2.574	1	2.574	1.652	.202	.016	
Error	160.442	103	1.558				
Total	37992.000	106					
Corrected Total	406.943	105					

a. R Squared = .606 (Adjusted R Squared = .598)
Table 6 shows that F(1, 103) = 1.65; p = 0.20 > 0.05. Since the p-value is greater than 0.05, the null hypothesis is not rejected. This implies that there is no significant difference in the mean performance scores of male and female students taught Chemistry using the Ethnological Instructional Strategy. The partial Eta square of 0.016 was obtained for the gender meaning that only 1.6% of the students' performance scores can be attributed to the gender of students in the Chemistry class when taught using the Ethnological Instructional Strategy.

Discussion of Findings

Effect of Ethnological Instructional Strategy on Students' Performance in Chemistry The findings revealed a significant difference in the mean performance scores of students taught Chemistry using the Ethnological Instructional Strategy (mean = 9.32) and those taught using the Guided Discovery Method (mean = 5.10), with a mean difference of 4.22 in favour of the former. This result is consistent with previous studies by Akpoghol (2017), Fatokun and Eniayeju (2014), and Ugwuanyi and Madu (2015), which demonstrated the effectiveness of Ethnological Instructional Strategy in teaching Chemistry.

The results of this study reaffirm my belief in the potential of Ethnological Instructional Strategy to enhance students' performance in Chemistry. By incorporating culture and social context into the teaching process, students can connect abstract concepts to real-life experiences, leading to deeper understanding and improved critical thinking and problem-solving skills. These findings have significant implications for Chemistry education, and I advocate for the adoption of an Ethnological Instructional Strategy in Chemistry classrooms to promote student success. The study concludes that the use of an Ethnological Instructional Strategy is an effective method for teaching Chemistry, leading to improved performance, critical thinking, and problem-solving skills. The researcher recommends the adoption of this approach in Chemistry education to promote student success and enhance the learning experience.

Effect of Ethnological Instructional Strategy on Students' Retention Scores in Chemistry
The findings revealed a surprising difference in the mean retention scores of students taught Chemistry using the Ethnological Instructional Strategy (mean = 9.51) and those taught using the Guided Discovery Method (mean = 8.93), with a mean difference of 0.26 in favour of the latter. This result contradicts previous studies by Oluwatosin and Terfas (2019) and Efe (2015), which found that students taught using the Ethnological Instructional Strategy retained better than those taught using the Guided Discovery Method.

The results of this study were unexpected, as I had anticipated that the Ethnological Instructional Strategy would lead to better retention scores, based on previous research. However, the findings suggest that the Guided Discovery Method may be more effective in promoting long-term retention of Chemistry concepts. This study highlights the need for further investigation into the optimal teaching methods for Chemistry education, and I believe that a combined approach may yield the best results. The findings also underscore the importance of considering individual differences and learning styles in teaching and learning. The study concludes that contrary to previous research, the use of an Ethnological Instructional Strategy does not necessarily lead to better retention scores in Chemistry. The researcher suggests that a combined approach may be more effective and highlights the need for further research in this area.

Effect of Ethnological Instructional Strategy on Gender Performance in Chemistry The findings revealed a significant difference in the mean performance scores of male (mean = 8.71) and female (mean = 10.25) students, with a mean difference of 0.51 in favour of male students. This result is consistent with the findings of *Japhet, J. (2019)* who reported that male students perform better than female students in Chemistry. The results of this study align with the

hypothesis that male students would perform better than female students in Chemistry when taught using an Ethnological Instructional Strategy. However, the small effect size suggests that the difference is minimal, and other factors such as individual differences and learning styles may play a more significant role. These findings highlight the need for further research into the gender dynamics in Chemistry education and the development of strategies to promote gender equity. As a researcher, I am committed to exploring innovative approaches to bridge the gender gap in STEM education. The study concludes that the use of Ethnological Instructional Strategy in Chemistry education has a slight differential impact on male and female students' performance, with male students performing marginally better. The researcher recommends further investigation into the gender dynamics in Chemistry education and the development of strategies to promote gender equity.

Summary

The study aimed to investigate the effect of ethnological instructional strategy on secondary school students' performance, and retention in Chemistry in Taraba State, Nigeria. A quasi-experimental design was employed, utilizing a pretest, posttest, and post-posttest with a non-randomized control group. The study was conducted in intact classes from three local government areas in the Jalingo education zone. The Chemistry Performance Test (CPT), comprising 40 multiple-choice objective questions, was used to collect data.

The study found that students taught using the Ethnological Instructional Strategy performed significantly better than those taught using the Guided Discovery Method, with a mean difference of 4.22. Conversely, students taught using the Guided Discovery Method retained more information than those taught using the Ethnological Instructional Strategy, with a mean difference of 0.26. Additionally, male students performed better than female students when taught using the Ethnological Instructional Strategy, with a mean difference of 0.51. In Conclusion, The study suggests that ethnological instructional strategy has a positive effect on students' performance in Chemistry, but not on retention. Gender differences were also observed in performance.

Conclusion

In conclusion, this study found that using an ethnological instructional strategy in teaching chemistry improves students' learning outcomes and retention in the subject. By connecting chemistry concepts to their immediate environment, students develop a deeper understanding and appreciation of the subject. The strategy also promotes gender equity, as both male and female students can actively participate and compete in classroom activities. Given the significance of students' performance and retention in chemistry education, the ethnological instructional strategy offers a promising approach to addressing the trend of poor academic performance in secondary schools. By adopting this strategy, educators can create a more engaging and effective learning environment for chemistry students.

Recommendations

Based on the study's findings, it is recommended that chemistry teachers be encouraged to use ethnological instructional strategies to help students connect chemistry to their everyday environment, thereby enhancing performance, and retention. Additionally, chemistry teacher trainees should be trained in this approach and students should be encouraged to practice ethnoscience outside of class. Curriculum planners and educators should also recognize the effectiveness of ethnological instructional strategies in chemistry classrooms. Furthermore, the government should collaborate with professional bodies to organize training programs for chemistry teachers on innovative teaching methods, including ethnological instructional strategies, to improve chemistry education.

Suggestions for Further Research

Further research is suggested to explore the impact of ethnological instructional strategies on secondary students' performance, and retention in subjects beyond chemistry, such as physics, mathematics, and basic science. Additionally, replicating the study in a tertiary-level education system could provide valuable insights. Furthermore, investigating the effectiveness of ethnological strategies in other chemistry topics and exploring modern teaching methods for implementing ethnoscience in senior secondary school biology classes in Taraba State are also recommended for future research. These studies could provide a more comprehensive understanding of the benefits and applications of ethnological instructional strategies in various educational contexts.

Contribution to Knowledge

This study contributes significantly to knowledge in several areas, including the advancement of pedagogical strategies by providing evidence on the effectiveness of ethnological instructional strategies in teaching chemistry, offering a new approach that can be replicated or adapted in other contexts. It also provides valuable insights for curriculum development, informing future curriculum revisions and supporting the development of more culturally responsive and effective teaching practices. Additionally, the study contributes to knowledge on student learning and engagement, highlighting the impact of ethnological instructional strategies on increased performance, and retention, and offering a proven strategy for improving educational outcomes in chemistry and potentially other subjects. Finally, the study enhances teacher professional development by providing a framework for teachers to improve their instructional practices, fostering a more effective and culturally relevant teaching environment.

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PHILOSOPHY OF MIND AND ITS IMPLICATIONS ON THE LEARNING PEDAGOGY: ISLAMIC PERSPECTIVE

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Abstract
The philosophy of mind has been a pivotal subject in Islamic philosophy, profoundly shaping not only theological and metaphysical debates but also educational practices. Islamic philosophers such as ***Al-Ghazali****,* ***Ibn Sina*** *(Avicenna), and* ***Ibn Rushd*** *(Averroes) have extensively engaged with the nature of the mind, intellect, and consciousness. These discussions have significant implications on learning pedagogy, particularly in Islamic contexts. This article explored the philosophical concepts of the mind in Islamic thought and how these ideas influence educational practices, including the teaching methodologies, learner engagement, and the holistic approach to knowledge acquisition.*

Keywords: Philosophy of Mind. Learning Pedagogy. Intellectual Development. Islamic Pedagogy

Introduction
The philosophy of mind in Islam is a rich field that addresses the intricate relationship between the soul (***nafs***), intellect ***('aql),*** and the body, as well as the mind's connection to divine knowledge. Drawing from the works of classical Islamic Philosophers like ***Al- Farabi***, ***Ibn Sina*** (Avicenna), ***Al-Ghazali***, and Ibn Rushd (Averroes), this branch of philosophy delves into issues such as consciousness, human intentionality, perception, and the pursuit of knowledge. Central to Islamic thought is the belief in the soul as an immaterial substance that linked to the body but not reducible to it, and intellect as a divine tool for discernment, understanding, and spiritual growth. Islamic philosophy of mind integrates rational and spiritual dimensions, offering a comprehensive understanding of human cognition and self-awareness.

The implications of this philosophy for learning pedagogy are significant, particularly in the Islamic educational system. Rooted in the belief that knowledge is both a rational and spiritual pursuit, Islamic pedagogy emphasizes a holistic approach that integrates intellectual development with moral and spiritual refinement. Learning is seen not merely as an accumulation of information but as a transformative process aimed at personal growth, ethical improvement, and spiritual elevation. This pedagogical model advocates for a balance between reason and revelation, suggesting that true knowledge comes through the alignment of human intellect with divine wisdom. The concept of *ta'dib* (holistic education) encompasses the cultivation of knowledge, ethics, and self-discipline. In practice, this approach encourages critical thinking, reflection ***(tafakkur),*** and the ethical application of knowledge, with an emphasis on developing the learner's character (akhlaq) and spiritual awareness. Islamic pedagogical methods also underscore the importance of mentorship, dialogue, and the teacher-student relationship, as knowledge is transmitted in a dynamic process that engages both the rational mind and the heart ***(Al- qalb).*** This philosophy has modern educational implications, encouraging a comprehensive learning model that integrates academic rigour with ethical and spiritual development. The philosophy of mind in Islam, therefore, suggests that education is not only a cognitive process but a moral and existential one, aligning learners with their higher purpose and understanding of reality through a harmonious development of intellect, body, and soul.

Statement of the Problem
The philosophy of mind in Islamic thought offers a comprehensive understanding of the human

intellect, soul, and consciousness. Islamic philosophers such as ***Ibn Sina, Al- Ghazali,*** and ***Ibn Rushd*** have explored the intricate relationship between the mind, body, and soul, emphasizing the role of intellect and spiritual development in human cognition. While this philosophical tradition has had a significant historical impact on Islamic education, its implications for modern learning pedagogy remain underexplored Contemporary educational systems, particularly in Islamic contexts, face challenges in integrating traditional philosophical insights with modern pedagogical approaches. The holistic view of the mind in Islamic philosophy where intellectual, moral, and spiritual growth are interconnected raises questions about how these insights can be practically applied in today's educational environments. Current pedagogical models, which are often heavily influenced by Western, secular paradigms, may not fully accommodate the integration of intellectual and spiritual dimensions emphasized in Islamic philosophy.

Thus, the problem lies in the gap between the rich intellectual tradition of the Islamic philosophy of mind and its practical application in modern learning environments. How can Islamic educational institutions effectively incorporate the philosophical principles of the mind, intellect, and soul into contemporary pedagogical frameworks? Additionally, how can the integration of ethical, spiritual, and intellectual development—as advocated by Islamic thinkers—reshape modern teaching methodologies to foster holistic student growth? Addressing this problem is crucial for developing educational strategies that not only promote intellectual achievement but also nurture the moral and spiritual dimensions of learners, ensuring a more comprehensive and transformative approach to education.

Research Methodology

This research adopted a qualitative, interpretive approach to explore the philosophy of mind in Islamic thought and its implications for learning pedagogy. The methodology will involve a combination of historical analysis, textual exegesis, and thematic analysis to provide a comprehensive understanding of the subject.

1. **Historical Analysis**

The study begins with a historical overview of the development of the philosophy of mind in Islam, focusing on key figures such as Ibn Sina, Al-Ghazali, and Ibn Rushd. Primary and secondary historical sources will be consulted to trace how these philosophers conceptualized the mind, intellect, and soul, and how their ideas were influenced by earlier Greek thinkers like Aristotle and Plato. This analysis will help contextualize the philosophical discussions within the broader Islamic intellectual tradition.

2. **Textual Exegesis**

Key philosophical and educational texts written by major Islamic thinkers will be examined through textual exegesis. Works such as Ibn Sina's **The Book of Healing** and Al-Ghazali's **The Alchemy of Happiness** will be analyzed to extract their understanding of the mind and its relation to knowledge acquisition and spiritual growth. The focus will be on understanding how these philosophers linked intellectual development with ethical and spiritual progress, which will provide insight into how their theories can inform contemporary pedagogical practices.

3. Thematic Analysis

The research will then engage in thematic analysis to identify recurring themes related to learning and education within Islamic philosophy of mind. Themes such as the integration of intellectual and spiritual knowledge, the role of ethics in education, and the holistic development of learners will be explored. Thematic analysis will allow for a structured understanding of how Islamic thought on the mind can inform modern pedagogical practices.

4. Application to Modern Pedagogy

Finally, the study will analyze contemporary educational models and identify points of integration between Islamic philosophical principles and modern pedagogical approaches. This will include examining current Islamic educational institutions and their curricula to determine how effectively they incorporate traditional philosophical insights into their teaching methodologies. The research

will provide recommendations for incorporating the Islamic philosophy of mind into contemporary learning environments, focusing on holistic learner development that balances intellectual, ethical, and spiritual growth.

5. Data Sources

(a)- Primary Sources: Works of key Islamic philosophers (e.g., Ibn Sina, Al-Ghazali, Ibn Rushd).
(b)- Secondary Sources: Scholarly analyses and interpretations of Islamic philosophy and its educational implications, journal articles, and books on Islamic pedagogy and philosophy of mind.

This multi-method approach ensures a thorough exploration of both the historical- philosophical aspects and practical pedagogical implications of the philosophy of mind in Islam.

Philosophy of Mind in Islam

Islamic philosophy of mind has its roots in Islamic revelation although some Muslim Philosophers took the Greek philosophical traditions, particularly those of Aristotle and Plato, into Islamic thought. Central to this tradition is the notion of the soul ***ruh*** or, which is often discussed in conjunction with the mind***nafs*** and intellect ***('aql).*** Unlike modern Western dualism, Islamic philosophy does not sharply separate the mind from the soul or body. Instead, it views the human being as a holistic entity in which the mind, body, and soul are interconnected (Nasr, 2006).

Ibn Sina's Contributions

Ibn Sina, also known as Avicenna (980–1037), was a Persian polymath who made significant contributions to the philosophy of mind in Islamic thought. His ideas have had far-reaching implications, not only for Islamic philosophy but also for the development of pedagogy in learning, particularly through his exploration of the nature of the soul, cognition, and the process of knowledge acquisition. Ibn Sina's philosophy of mind is centered around his understanding of the soul (*nafs*), which he conceptualized as an immaterial, rational substance that is distinct from the body yet responsible for intellectual and sensory faculties. His most notable theory is the "Flying Man" argument, which is one of the earliest thought experiments in the philosophy of mind. In this thought experiment, Ibn Sina demonstrates the soul's self-awareness independent of the body. This idea underscores his dualistic view that the mind (or soul) and body are separate entities, with the mind being superior because it is not dependent on material conditions (Davidson, 1992). The theory also integrates epistemology and metaphysics, suggesting that learning is essentially the actualization of intellectual potential through the intellect's gradual abstraction from sense perception to universal knowledge. He proposed a hierarchy of intellect, where the *active intellect* plays a role in illuminating the potential intellect within humans, thus allowing for intellectual development (Hasse, 2014).

Implications on Learning Pedagogy

Ibn Sina's ideas about the mind's capability to ascend from empirical knowledge to abstract reasoning deeply influence the process of learning and education. His pedagogical implications suggest that effective learning requires guiding students through stages of intellectual development, from sensory experiences to higher-order reasoning. In Islamic learning, this philosophy has been reflected in the emphasis on *tazkiyah* (purification) and *ta'lim* (teaching), where intellectual and moral development occur simultaneously (Gutas, 2001). Moreover, the theory implies that teaching should focus on fostering independent reasoning and self-reflection, enabling learners to move beyond rote memorization to deeper understanding. This is particularly relevant in Islamic pedagogy, where the goal of education is not just knowledge transmission but also cultivating wisdom (*hikmah*). Educators can draw on Ibn Sina's model of intellect development by encouraging critical thinking, analogy, and metaphysical reasoning as essential components of the learning process.

Therefore, Ibn Sina's contributions to the philosophy of mind emphasize the centrality of

intellectual growth through the soul's faculties, influencing Islamic educational systems. His framework provides a profound insight into learning, suggesting that the role of pedagogy is to nurture the intellect's ability to transcend the material world and engage in higher cognitive processes.

In other word, Ibn Sina's theory of the soul plays a significant role in Islamic philosophy of mind. According to Ibn Sina, the soul is distinct from the body but intimately connected to it during a person's earthly life. He posits three types of souls: the vegetative soul, the animal soul, and the rational soul. The rational soul is responsible for intellectual reasoning and understanding (Mc Ginnis & Reisman, 2007). This rational soul is central to the learning process as it is seen as the seat of intellectual and spiritual knowledge. Ibn Sina argued that knowledge acquisition is both an intellectual and spiritual pursuit, where the mind ascends from sensory perception to intellectual abstraction.

Al-Ghazali's Contributions to Philosophy of Mind

Al-Ghazali's contributions to the philosophy of mind in Islam, particularly his understanding of the soul, intellect, and human cognition, have significant implications for learning pedagogy. Al-Ghazali, a renowned theologian, philosopher, and mystic of the Islamic Golden Age, offered a perspective that integrates spiritual, intellectual, and ethical dimensions in his approach to knowledge and education. His works, especially *IhyaUlum al-Din* (The Revival of the Religious Sciences) and *Tahafut al-Falasifa* (The Incoherence of the Philosophers), delve deeply into human consciousness, cognition, and the relationship between the soul and intellect. Al- Gazali has highlighted key points on the subject matter as follows:

The Soul and Intellect: Al-Ghazali viewed the human being as composed of both body and soul, with the intellect playing a critical role in guiding the soul toward higher knowledge. His emphasis on the soul's purity and intellectual cultivation suggests a holistic approach to learning, where both the moral and cognitive faculties are developed. The intellect (*aql*) is seen as a divine gift that allows humans to comprehend higher truths, beyond mere sensory perception (Al-Ghazali, 2010). Stages of Knowledge Acquisition: Al-Ghazali outlined stages of learning that progress from sense perception to rational understanding and, ultimately, to spiritual insight or divine illumination (*kashf*). This framework indicates that learning is not just an intellectual endeavor but also a spiritual journey. The implication for pedagogy is that education should address both the intellectual and moral development of the learner (Al- Ghazali, 2010).

The Role of Reason and Revelation: In his critique of the philosophers, Al-Ghazali stressed that while reason is important, it must be guided by divine revelation. This reflects his view that knowledge comes not only from human cognition but also from divine sources. In a learning context, this suggests that educators should emphasize both rational inquiry and ethical or spiritual development, fostering a balanced approach to knowledge (Al- Ghazali, 2000).

Implications for Learning Pedagogy:

Holistic Education: Al-Ghazali's integration of intellectual, spiritual, and moral dimensions implies that education should not focus solely on the mind but should aim to cultivate ethical and spiritual awareness as well. Educators could implement pedagogical practices that encourage reflective thinking and ethical behaviour, along with intellectual rigour (Rahman, 2017).

Moral Development: Learning, to Al-Ghazali, is deeply tied to character formation. He believed that knowledge without ethics is incomplete. This implies that educators should focus on developing virtues such as humility, patience, and self-discipline in their students, in addition to imparting factual knowledge (Nasr, 1994).

Experiential Learning and Intuition: Al-Ghazali emphasized the importance of experiential knowledge and intuitive understanding, suggesting that learning should go beyond rote memorization to include real-life experiences and reflection. Modern pedagogical strategies such as experiential learning, project-based learning, and reflective practices can be seen as aligning with his approach (Rahman, 2017).

In conclusion, Al-Ghazali contributed to Islamic psychology by emphasizing the moral and ethical aspects of the soul and mind. In his view, learning and intellectual activity are not merely cognitive processes but are deeply intertwined with spiritual and ethical development (Al-Ghazali, 2005). For Al-Ghazali, true knowledge is that which brings a person closer to God. The purification of the soul, therefore, is essential for proper intellectual development, meaning that the educational process must include moral and spiritual education alongside intellectual growth.

Contribution of Ibn Rushd's Rationalism to Philosophy of Mind in Islam

Ibn Rushd (Averroes) made significant contributions to Islamic philosophy, especially in rationalism, which deeply influenced the Philosophy of Mind in Islam. His thoughts are rooted in reconciling Islamic theology with Aristotelian philosophy, advocating for the use of reason as a pathway to truth alongside revelation.

1. Rational Soul and Intellect: Ibn Rushd emphasized the rational soul and the active intellect, borrowing from Aristotle but integrating these ideas into Islamic thought. He argued that the intellect is the most divine aspect of human nature, and understanding this through reason leads one closer to God (Davidson, 1992). This shaped Islamic views on human consciousness and reasoning abilities, contributing to the broader Philosophy of Mind by focusing on intellectual and spiritual development through rational inquiry.
2. Duality of Knowledge: Ibn Rushd proposed a dualistic approach to knowledge: these included revelation and reasoning. He insisted that reason should not contradict revelation, but rather complement it (Janssens, 2019). This integration of reason and faith created a framework within the Islamic philosophy of mind, where the human intellect plays a central role in understanding metaphysical truths.
3. Eternal Nature of the Soul: Averroes believed in the immortality of the intellect, which led to a distinctive view of the soul's relation to the body and its potential for knowledge. His argument that the intellectual soul survives after death has profound implications for Islamic metaphysical views on mind-body dualism (Kogan, 1985).

Implications on Learning Pedagogy:

1. Reason as a Tool for Learning: Ibn Rushd's emphasis on reason directly influences modern educational approaches in Islamic pedagogy. Teaching strategies rooted in inquiry-based learning, critical thinking, and reasoning are derived from this tradition (Hameed, 2021). His work advocates for an education system where students use their intellects to engage with texts, encouraging a rational interpretation of scripture.
2. Integration of Faith and Reason of Learning: The duality Ibn Rushd promoted is reflected in contemporary pedagogical approaches within Islamic education. The balance between religious education and scientific or rational knowledge informs modern curricula in Islamic schools, where faith and reason are integrated (Nasr, 2006). This balance helps students develop holistically, addressing both spiritual and intellectual needs.
3. Critical Thinking in Islamic Education: Ibn Rushd's rationalism encourages educators to foster on critical thinking and reflective learning in students. His ideas underline the importance of understanding religious texts through reason, not merely through rote memorization (Leaman, 1988). This has implications for Islamic pedagogy by promoting analytical skills and reasoning in learning processes.

Ibn Rushd's rationalism made a lasting impact on the Philosophy of Mind in Islam by advocating for the use of reason alongside revelation. This has profound implications for Islamic learning

pedagogy, where the rational soul and intellect are central to education, leading to teaching methods that emphasize critical thinking, inquiry, and the integration of faith and reason. Therefore,Ibn Rushd (1126–1198), often considered the Islamic world's most notable defender of Aristotelian philosophy, emphasized the use of reason in understanding the universe and the mind. He argued that intellect is a universal, shared attribute of humanity, and he introduced a framework that suggests that the mind's highest function is rational reflection on the natural and metaphysical worlds (Fakhry, 2001). His view highlights the importance of critical thinking and reasoning as central to both the learning process and development of the mind.

Implications of Islamic Philosophy of Mind on Learning Pedagogy

The philosophy of mind in Islam, with its deep connections between intellectual, spiritual, and ethical dimensions, naturally influences pedagogical methods within Islamic contexts. Islamic learning pedagogy integrates the intellectual pursuit of knowledge with moral and spiritual refinement, seeking to develop the whole person rather than merely imparting technical skills or information.

Holistic Development of the Learner

Islamic philosophy emphasizes the holistic development of the individual, which is reflected in traditional Islamic pedagogical approaches. The mind, soul, and body are seen as interconnected, and educational practices often focus on fostering intellectual, spiritual, and moral development simultaneously (Al-Attas, 1980). For example, *adab,* which refers to proper conduct and manners, is a key concept in Islamic education. It is considered essential not only for personal development but also for intellectual growth. The focus on holistic development encourages students to view knowledge not just as a cognitive achievement but as part of their ethical and spiritual journey (Nasr, 1993).

Role of the Teacher

In Islamic pedagogy, the teacher plays a vital role as both an intellectual guide and a moral exemplar. Rooted in the concept of ***tarbiyyah***(nurturing or education), the teacher is responsible for transmitting knowledge, modelling ethical behaviour, and nurturing the student's intellectual and spiritual growth. According to Al-Ghazali (2005), the role of the teacher is not only to impart knowledge but also to cultivate the student's character. This aligns with his broader view that true knowledge is inseparable from moral and spiritual development. The teacher-student relationship is deeply personalized, often resembling a mentor-mentee dynamic. This reflects the Islamic philosophical understanding that learning is an intimate process that involves not just the transfer of knowledge but also the transformation of the learner's mind and soul.

Critical Thinking and Reflection

Islamic philosophy of mind, particularly through the works of Ibn Rushd and other rationalist thinkers, places a strong emphasis on reasoning and critical thinking. This aspect of Islamic pedagogy encourages students to engage deeply with the material, reflect on its meaning, and apply it to broader intellectual and spiritual contexts. Critical thinking is not seen as antithetical to faith, but as a tool that strengthens one's understanding of both the natural world and religious truths (Hourani, 1991). In modern educational contexts, this translates into pedagogies that emphasize inquiry-based learning, where students are encouraged to question, explore, and reflect upon the knowledge they are acquiring. This method aligns with the rationalist tradition within Islamic philosophy, where the mind's engagement with knowledge is seen as an active, reflective process.

Integration of Science and Religion

Islamic philosophy of mind rejects the dichotomy between science and religion, which has significant implications for pedagogy. Knowledge, whether religious or scientific, is viewed as part of a unified reality. Ibn Sina, for example, argued that scientific knowledge of the natural world

is a necessary precursor to understanding higher metaphysical realities (McGinnis & Reisman, 2007). This integrated view of knowledge encourages an educational approach that does not segregate religious studies from secular sciences but rather sees them as complementary. In practice, it means that Islamic educational institutions often strive to integrate religious teachings with contemporary scientific knowledge. This can be seen in the curriculum of Islamic schools and universities, where subjects such as the natural sciences are taught alongside Islamic studies, with the underlying understanding that both lead to a greater comprehension of truth.

Conclusion

The philosophy of mind in Islam offers a rich, multidimensional understanding of human cognition, intellect, and spirituality. Its implications for learning pedagogy are profound, promoting a holistic, integrated approach that nurtures not just the intellect but also the moral and spiritual dimensions of the learner. By emphasizing the unity of knowledge, the integration of science and religion, and the critical role of moral and ethical development in the learning process, Islamic pedagogy reflects the deep influence of its philosophical heritage on contemporary educational practices. It can otherwise be said that the Philosophy of Mind in Islam offers a profound understanding of human cognition, consciousness, and the soul, deeply rooted in the works of scholars like Al-Farabi, Ibn Sina (Avicenna), and Ibn Rushd (Averroes). These philosophy particularly through their engagement with Greek philosophy, provided a unique framework that integrates reason with revelation, positioning the intellect as a bridge between human and divine knowledge. The Islamic view of the mind is not limited to cognitive functions but also emphasizes the spiritual and moral dimensions of human consciousness, advocating for the cultivation of intellect as a means to achieve a higher understanding of existence and ultimately, closeness to God.

This philosophical foundation has significant implications for Islamic pedagogy. By prioritizing reason alongside faith, it promotes a holistic educational model that encourages critical thinking, reflective inquiry, and intellectual growth. Ibn Rushd's rationalism, in particular, emphasizes the development of the rational soul, urging learners to engage deeply with both religious and scientific knowledge. His approach has shaped a learning environment that fosters analytical thinking, where education is not merely about the acquisition of knowledge but about understanding its deeper metaphysical and ethical meanings. Thus, the Philosophy of Mind in Islam contributes to contemporary educational practices by advocating a balance between spiritual and intellectual development, encouraging educators to integrate both faith-based and rational inquiry in the learning process. This balance, rooted in centuries of Islamic intellectual tradition, continues to inform pedagogical strategies today, offering a model where reason, ethics, and spirituality are inextricably linked in the pursuit of knowledge.

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PERCEIVED EFFECT OF ADMINISTRATIVE STYLES ON ORGANISATION OF SPORTS AMONG PUBLIC AND PRIVATE SECONDARY SCHOOLS IN KWARA STATE

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Abstract
The slow advancement of sports programmes and initiatives in Nigerian schools might be a result of poor administration. Therefore, the study was carried out to look at the perceived effect of administrative styles on organisation of sports among public and private secondary schools in Kwara State. For the study, two research questions and one hypothesis were generated. This study used the descriptive survey as its research design. A sample of 224 was used for this study through multistage sampling techniques which are stratified sampling, proportionate, and simple random sampling techniques. The "Perceived Extent of Effect of Administrative Styles on Organisation of Sports Questionnaire" (PEEASOSQ) was the instrument used to gather data. The research questions were analysed using descriptive statistics of mean, percentage, and frequency count. To test the null hypothesis, an independent sample t-test, at a significance level of 0.05, was utilized. The study revealed that the perceived effect of administrative styles on the organization of sports in public and private secondary schools in Kwara State varies. In public schools, authoritarian and democratic styles were perceived to have a high effect, while laissez-faire, transformational, and transactional styles had a low effect. Similarly, in private schools, transformational, authoritarian, and democratic styles were considered to have a high effect, while laissez-faire and transactional styles had a lower effect. However, when comparing the perceived effect of administrative styles between public and private schools, the study did not find a statistically significant difference. It was recommended that school administrators, both in public and private secondary schools, should prioritize the adoption of effective administrative styles that promote structured decision-making processes and stakeholder involvement in the organisation of sports.

Keywords: Administrative Styles, Organisation of Sports, Secondary Schools

Introduction
The school setting is a complex organisation with diverse human resources and objectives (Crick, Barr, Green, & Pedder, 2017). Thus, the inclusion of sporting activities in a school's calendar holds great significance as it presents a noteworthy occasion where students have the opportunity to display their abilities, stay healthy and fit, and commemorate their accomplishments. These activities play a vital role in the holistic development of students, offering numerous advantages academically, socially, and personally. Through sports, students cultivate discipline, teamwork, and resilience, enhancing cognitive abilities that extend beyond the realm of the playing field. Furthermore, sports act as a unifying force, fostering social connections and nurturing empathy among students from diverse backgrounds. On a personal development level, sports come with a lot of advantages as it instills valuable life lessons of perseverance, grace in victory and defeat, and the pursuit of excellence. Therefore, the organisation of sports within schools creates an environment that maximizes these advantages, nurturing student growth and achievement in various dimensions.

In addition to the aforementioned, organisation of sports is a multifaceted process that involves the coordination, management, and administration of sporting activities within the school setting.

It encompasses various elements, including logistical arrangements, scheduling, facility management, financial considerations, participant registration, and sports events coordination. Effective organisation of sports is crucial for creating an environment that promotes participation, ensures fairness, and maximizes the benefits for all involved stakeholders. By organizing sports activities effectively, educational institutions create an inclusive and enriching environment that promotes student engagement, well-being, and personal development.

Within the educational context, secondary schools bear a significant responsibility when it comes to organizing and promoting sports activities. As crucial institutions in the holistic development of students, secondary schools recognize the importance of offering a well- rounded education that extends beyond academic pursuits. These institutions catering to secondary education actively promote a culture of sports by organizing inter-house or inter-school competitions, intramural sports leagues, and other sports festivals. These events provide platforms for students to showcase their talents, compete in a spirit of sportsmanship, and develop a sense of pride and camaraderie. Moreover, schools strive to create an inclusive environment where students of all abilities and interests feel welcome and encouraged to participate. They offer a diverse range of sports options, allowing students to explore and engage in activities that resonate with their individual interests and strengths.

Within the educational context, secondary schools bear a significant responsibility when it comes to organizing and promoting sports activities. As crucial institutions in the holistic development of students, secondary schools recognize the importance of offering a well-rounded education that extends beyond academic pursuits. These institutions catering to secondary education actively promote a culture of sports by organizing inter- house or inter-school competitions, intramural sports leagues, and other sports festivals. These events provide platforms for students to showcase their talents, compete in a spirit of sportsmanship, and develop a sense of pride and camaraderie. Moreover, schools strive to create an inclusive environment where students of all abilities and interests feel welcome and encouraged to participate. They offer a diverse range of sports options, allowing students to explore and engage in activities that resonate with their individual interests and strengths.

However, in these current times, schools at all levels in Nigeria, including Kwara State, are under enormous pressure to respond to the removal of fuel subsidies, limited budgets, and inadequate resources. School owners in the country under the auspices of the National Association of Proprietors of Private Schools, NAPPS, have cried out to the government to assist them in coping with the fallouts from the removal of fuel subsidies that have increased their cost of running their schools (Wahab, 2023). Naidoo, Coopoo, and Surujlal (2015) also averred that sports departments in schools are under enormous pressure to respond to increased competition, globalisation, limited budgets, and inadequate resources in terms of infrastructure and technology. These challenges have resulted in reduced opportunities for student participation, compromised infrastructure and technology, and difficulties in hiring qualified staff, ultimately hindering the overall organisation and promotion of sports activities within educational institutions. Thus, as budgets and resources diminish, there is a need to do more with less.

Nonetheless, the challenges faced by schools in Nigeria extend beyond financial limitations. Administrative styles and practices can also play a crucial role in shaping the overall environment and effectiveness of sports programmes. Administrative styles refer to the specific approaches or methods employed by school administrators such as principals, headmasters, headmistresses, superintendents, or other similar roles, in managing and overseeing the organisation, particularly with regard to sports programmes. It involves the way administrators lead, make decisions, communicate, and create an environment conducive to the successful organisation and promotion of sports activities within the school. The administrative style adopted by school administrators

can influence factors such as the allocation of resources, collaboration with staff and stakeholders, decision-making processes, and the overall support and emphasis given to sports programmes.
There are various administrative styles that can be observed in educational institutions. Common administrative styles include autocratic, democratic, laissez-faire, transformational, and transactional styles. The autocratic style of administration is characterized by centralized decision-making, with administrators making most decisions and exerting authority over staff and students. The democratic style promotes collaboration and shared decision-making between administrators and other stakeholders. The laissez- faire style, on the other hand, allows for a high degree of autonomy and freedom for teachers and staff. The transformational style focuses on inspiring and motivating stakeholders towards a shared vision (Ligon, 2020). The transactional style involves a clear structure of rewards and punishments (Mugizi, Tumuhaise, Samanya, & Dafiewhare, 2019). Administrative styles can vary widely, depending on factors such as the organisational culture, goals and leadership philosophy.

Administrative styles are important context in this present day. It has been a subject of much debate and deliberation and how the different styles of administration evoke different responses from followers (Samson & Bakinde, 2021). Numerous previous studies have discussed the effectiveness of administrative styles in different perspectives (Ahmed- Iqbal, Abid, Arshad, Ashfaq, Athar, & Hassan, 2021). Scholars have noticed that the role of administrative styles have been extensively explored and discussed from the business perspective; however, its vital importance in the background of educational institutions responsible for providing country's future leadership was less investigated during the last few decades (Al-Kurdi, El-Haddadeh, & Eldabi, 2020).

In sports context, majority of the studies have focused on organisational performance. For instance, Ajeigbe, Owolabi and Alansinsin (2021) conducted a correlational research to find out the relationship between leadership styles of 62 sports administrators and organisational performance in Ilorin, Kwara State. The findings revealed that leadership styles of sports administrators have significant relationship with organisation performance, each leadership style has significant contribution to organisation performance and all the leadership styles significantly contributed to organisation performance. Likewise, one of the objectives of the study of Naidoo, Coopoo and Surujlal (2015) was to establish the relationship between leadership styles of sports administrators and organisational effectiveness in higher educational institutions in South Africa. The results indicated that the most dominant leadership style adopted by sport administrators was transformational.

Correlation analysis revealed a positive and significant relationship between transformational leadership style and organisational effectiveness. Finally, while prior studies have predominantly focused on assessing organisational performance, it is essential to recognize the unique nature of organizing sports programmes within schools. Instead of solely scrutinizing overall performance metrics, this study placed emphasis on the specific context of sports programmes and their profound influence on student engagement, well-being, and personal development. By redirecting attention towards the organisation of sports, valuable insights into how administrative styles shape this particular aspect of educational institutions can be gained. This shift in focus allows for a deeper understanding of the intricate relationship between administrative practices and the successful execution of sports programmes, ultimately benefiting students in various dimensions. Going by this aforementioned, this study therefore examined the perceived effect of administrative styles on organisation of sports among public and private secondary school in Kwara State.

Statement of the Problem

Sports and administration are integral parts of the modern educational system. They both play

important roles in providing students with a well-rounded education and facilitating their overall development. However, a critical look of sports and administration in Nigerian secondary schools has not been encouraging. The culture of sporting competitions among secondary schools is on the low end of the spectrum. The public schools are usually underfunded and cannot take up such venture because of bad and ill maintained facilities. Private schools, unfortunately, are far more fixated on pumping children with academic work at the expense of a simultaneous building of their body as well because the authorities feel it is not important.

Empirically, leadership and administration research within sport context has focused more on overall sports institution's performance and perception of school administrators. Instead of solely scrutinizing overall performance metrics, this study placed emphasis on the specific context of organisation of sports programmes. Furthermore, this study examined whether there are any differences in administrative styles and their perceived effects on organisation of sports between public and private secondary schools in Kwara State. Comparing these two sectors can provide insights into the unique challenges and opportunities they face.

Research Questions

To guide the study, the subsequent research questions were raised:

24. What is the extent of the perceived effect of administrative styles on the organisation of sports among public secondary schools in Kwara State?
25. What is the extent of the perceived effect of administrative styles on oragnisation of sports among private secondary schools in Kwara State?

Research Hypothesis

The study evaluated the following research hypothesis:

$H_0$1: There is no significant difference between the mean responses of principals from public and private secondary schools regarding the extent of the perceived effect of administrative styles on the organisation of sports in Kwara State.

Methodology

The population of this study consists of all registered secondary schools under the Ministry of Education and Human Capital Development in Kwara State, Nigeria. The total population size was determined by summing the number of registered private secondary schools, which amounted to 188, with the number of registered public secondary schools, totalled 317, resulting in a combined population of 505 secondary schools. Taro Yemane's formula was used to determine the desired sample size of 224. To achieve this, firstly, stratified sampling technique was employed such that the population was divided into two distinct strata based on proprietorship: private secondary schools and public secondary schools. Afterwards, a proportionate sampling technique was employed to determine the number of schools to be sampled from each stratum. The proportion of private schools in the population was calculated to be approximately 37.23%, while the proportion of public schools was approximately 62.77%. Consequently, 83 principals from private schools and 141 principals from public schools were determined to be necessary to achieve the desired sample size. The selection of schools within each stratum was conducted using a random sampling approach to ensure fairness and unbiased representation. Randomly selected schools were then contacted, and the principals of the selected schools were invited to participate as respondents in the study.

The "Perceived Extent of Effect of Administrative Styles on Organisation of Sports Questionnaire" (PEEASOSQ) was the instrument used to gather data. The questionnaire had 25 items with response options of Very High Extent (VHE), High Extent (HE), Low Extent (LE) and Very Low Extent (VHE). Experts in Human Kinetics and Health Education department at Kwara State University (KWASU), Malete, both face and content validated the questionnaire. Cronbach Alpha technique was employed to ascertain the consistency of the instrument. A reliability coefficient of 0.77 was elicited for the instrument. To test the null hypothesis, independent sample

t-test, at a significance level of 0.05, were utilized; while the research questions were analysed using descriptive statistics of mean, percentage and frequency count. For the research questions, a mean score of 2.50 and above was deemed a high extent of effect, while a mean score of 2.49 and below was considered a low extent of effect. Likewise, when the probability value is equal to or less than 0.05 the null hypothesis was rejected, but with the probability value greater than 0.05 the null hypothesis was not rejected.

Results

Research Question 1: What is the extent of the perceived effect of administrative styles on the organization of sports among public secondary schools in Kwara State?

Table 1 below revealed the perceived effect of administrative styles on the organization of sports among public secondary schools in Kwara State. The administrative style with the highest mean score was Autocratic (M = 3.52), indicating a high extent of perceived effect. This was followed by Democratic (M = 3.20), also demonstrating a high extent of perceived effect. Laissez-faire (M = 2.47) had the lowest mean score, indicating a relatively low extent of perceived effect on the organization of sports. Transformational (M = 2.01) and Transactional (M = 2.22) administrative styles received low mean scores, indicating a low extent of perceived effect on the organization of sports in Kwara State.

Table 1: Mean analysis showing the perceived effect of administrative styles on the organization of sports among public secondary schools in Kwara State

S/N	The extent of Perceived Effect of Administrative Styles on the Organization of Sports among Public Secondary Schools in Kwara State	Mean	Remark
1.	Autocratic Administrative Style	3.52	High Extent
2.	Democratic Administrative Style	3.20	High Extent
3.	Laissez-faire Administrative Style	2.47	Low Extent
4.	Transformational Administrative Style	2.01	Low Extent
5.	Transactional Administrative Style	2.22	Low Extent

Research Question 2: What is the extent of perceived effect of administrative styles on the organization of sports among private secondary schools in Kwara State?

Table 2 below revealed the perceived effect of administrative styles on the organization of sports among private secondary schools in Kwara State. The administrative style with the highest mean score was Transformational (M = 3.73), indicating a high extent of perceived effect. Democratic (M = 3.07) and Autocratic (M = 3.02) administrative styles also received a relatively high mean score, suggesting a high extent of perceived effect. Laissez-faire (M = 2.31) and Transactional (M = 2.43) styles had lower mean scores, indicating a low extent of perceived effect on the organization of sports in Kwara State.

Table 2: Mean analysis showing the perceived effect of administrative styles on the organization of sports among private secondary schools in Kwara State

S/N	Extent of Perceived Effect of Administrative Styles on the Organization of Sports among Private Secondary Schools in Kwara State	Mean	Remark
1.	Autocratic Administrative Style	3.52	High Extent
2.	Democratic Administrative Style	3.20	High Extent
3.	Laissez-faire Administrative Style	2.47	Low Extent
4.	Transformational Administrative Style	2.01	Low Extent
5.	Transactional Administrative Style	2.22	Low Extent

Research Hypothesis: There is no significant difference between the mean responses of principals from public and private secondary schools regarding the extent of the perceived effect

of administrative styles on the organisation of sports in Kwara State

Data in Table 3 below displayed the different responses of principals from public and private secondary schools regarding the extent of perceived effect of administrative styles on the organisation of sports in Kwara State. The table confirmed that there was no significant difference in the perceived effect of administrative styles on the organization of sports in Kwara State based on proprietorship (t-cal = -0.0471; df = 222; P > 0.05). In light of this, the hypothesis is not rejected because the significant value (0.962) is more than 0.05.

Table 3: T-test Analysis showing the perceived effect of administrative styles on the organization of sports in Kwara State based on proprietorship

Variable	N	Mean	SD	t-cal	Df	Sig	Remark
Public	141	2.88	0.60	-0.0471	222	0.962	Not
Private	83	2.91	0.45				Significant

Discussion of Findings

The findings of this study revealed that the perceived effect of authoritarian and democratic administrative styles on the organisation of sports in public secondary schools was high. These styles provide structure, clear decision-making processes, and involvement of stakeholders. This suggests that when school administrators adopt an authoritarian or democratic leadership approach, it positively influences the organisation of sports activities in these schools. This finding is consistent with the research conducted by Adeyemi and Bolarinwa (2013) wherein it was reported that the prevalent administrative styles used by public school principals were democratic and autocratic styles. On the other hand, laissez-faire, transformational and transactional administrative styles were found to be ineffective in promoting organization of sports in Kwara State public secondary schools. This finding is in line with the research conducted by Imariagbontua (2016) where it was reported that laissez-faire and transactional administrative styles were found to be ineffective in Nigerian public schools.

The findings of this study revealed that the perceived effect of transformational, authoritarian and democratic administrative styles on the organisation of sports in private secondary schools was high. These are in tandem with the study of Akomolafe (2012) wherein it was reported that there was high level of administrative effectiveness in private secondary schools. Conversely, laissez-faire and transactional administrative styles were found to be ineffective in the organisation of sports in Kwara State private secondary schools. These findings also agree with Esia-Donkoh and Quansah (2021) who averred that laissez-faire administrative style is an absence of leadership.

Finally, the study revealed that there was no significant difference between the responses of principals from public and private secondary schools regarding the extent of perceived effect of administrative styles on the organisation of sports in Kwara State. This means that no significant variation in the perceived effect of administrative styles on the organization of sports in Kwara State based on proprietorship. This is in tandem with the study of Alimi, Alabi and Ehinola (2011) where it was made known that there was a significant difference in the perception of principals' administrative skills with the principals of public secondary schools having high level of administrative effectiveness while the reverse is the case in private secondary schools.

Conclusion

Based on the findings of this study, it can be concluded that the perceived effect of administrative styles on the organization of sports in public and private secondary schools in Kwara State varies. In public schools, authoritarian and democratic styles were perceived to have a high effect, while laissez-faire, transformational, and transactional styles had a low effect. Similarly, in private schools, transformational, authoritarian, and democratic styles were considered to have a high effect, while laissez-faire and transactional styles had a lower effect. However, when comparing the perceived effect of administrative styles between public and private schools, the study

did not find a statistically significant difference. Therefore, while the effect of administrative styles on sports organization may vary within each type of school, the distinction between public and private proprietorship does not appear to play a significant role in shaping this perceived effect.

Recommendations

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

i. School administrators, both in public and private secondary schools, should prioritize the adoption of effective administrative styles that promote structured decision-making processes and stakeholder involvement.
ii. Both public and private schools should avoid adopting laissez-faire and transactional administrative styles, as these were found to be ineffective in promoting sports organization. These styles lack active leadership and may hinder the development of sports programs.
iii. Further research could explore additional factors that may influence the perceived effect of administrative styles on sports organization, such as school resources, infrastructure, and community support. Understanding these factors can provide valuable insights for improving sports programs in secondary schools.

REWARD SYSTEM AS A MOTIVATOR TO TEACHERS' ATTITUDE TO WORK IN SENIOR SECONDARY SCHOOLS IN TARABA STATE, NIGERIA

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Abstract
This research work examined the reward system as a motivator to teachers' attitude to work in senior secondary schools in Taraba State, Nigeria. The study therefore, sought to; determine the reward systems that are capable of motivating teachers' attitudes to work and the relationship between the rewards of teachers and their attitudes to work in senior secondary schools in Taraba state. The study adopted correlational research design. A questionnaire titled; Reward System as Motivator to Teachers' Attitudes to Work in Taraba State Questionnaire (RSMTAWQ) was developed and validated by the researchers. A population of 2,368 and a sample size of 322 which was obtained at the confidence level of 95% margin of error of 5.0% using research adviser sample table. Therefore, the data collected was subjected to appropriate quantitative statistics using SPSS which include; frequency counts, means, standard deviations, percentages, and Pearson's Correlation. The results obtained showed that most of these reward systems are capable of motivating teachers' attitudes to work and that there is relationship (r=0.657) between rewards of teachers and their attitudes to work in senior secondary schools in Taraba state.

Keywords: Reward system, Motivation, Teacher attitude

Introduction
Reward system refers to all the monetary, non-monetary and psychological payments that an organization provides for its employees in exchange for the work they perform. Reward is anything that extrinsically or intrinsically reinforces employee which is received in a corporation for the service offered or as results of the work done. A highly motivated employee can assist an organization win competition, add unique value and increase organizational profit (Francis, Zirra & Mambula 2020). Rewards consist of monetary reward (extrinsic) and non-monetary (intrinsic) reward. Rewards or incentives vary from one organization to another. Therefore, that workers need to be motivated by providing those incentives that will boost their morale and level of confidence while carrying out their respective responsibilities. According to Akpan and Ntuk (2023); reward system is the instrument used to increase employees' productivity. It seeks to attract and retain suitable employees, encourage good management employee relationship and commitment, and minimize tension and conflict as it deals with all forms of final returns, tangible service and mechanism for good relationship. This further means that reward systems in an organization may include; advancement opportunity or improvement process in service of job security, good salary and wages, adequate medical health facilities, canteen service, pension scheme, applause or credit for job well done (recognition), housing and transport allowance, good management/workers relation, physical working conditions such as good office accommodation, noise reduction, lightening, ventilation, cleanliness, safety precaution and aids at work.

Every organization has different approach of managing rewards in order to ensure its effectiveness and efficiency. Reward system should outline the pay levels, pay structure, employee benefits and all non-financial rewards such as recognition, promotion, retention and appraisal. From the employees view point, reward systems should meet their expectations in terms of equity and fairness. The reward policies should be well- communicated to the employees understanding, and the rewards should match market rate, qualification, and skills. Management must therefore put in place proper procedure to manage this reward system so that the organization can achieve its goals and objectives (Yamoah, 2013). Every organization establishes a reward system which determines

how its employees will be rewarded which the educational sector is not an exception. The National Policy on Education (NPE 2004) also outlines minimum entry level into teaching profession which outlines disparity in pay structure. Teaching as an occupation is regarded as a noble or respected profession is without doubt in need of reward to brace up teachers' commitment: Thus, any educational institution that employs teachers is expected to set up systems to reward them for effectiveness and efficiency. Such system could be accounted for as motivation.

Furthermore, reward system should be seen as a motivator to teachers' attitudes work in educational settings which will help the educational organization to achieve its targeted goals and objectives. However, according Anele (2022) reward system is important to workers as it has the capacity to boost their morale, encourage them and spur them to perform optimally in their work and attracts employees to join organization, keep them coming and dedicated to work which in turn help in the attainment of educational organization goals and objectives. Anele (2022) further asserted that, good reward packages enhance teachers' dedication, commitment and readiness to work which enhances high productivity. Reward system is therefore, all the monetary and non-monetary payments given by an organization to its employee for service rendered.

Attitude is one of the nebulous concepts when measuring human behaviour. This implies that attitude can be on a broad spectrum ranging from very bad or negative to very good or positive. If one acts in a certain way towards a situation or thing, it can reveal insights into how they value that situation or thing, for instance. Elias (2009) in Kin and Kareem (2017) defined attitude towards organisational change as an individual's overall positive or negative evaluative judgement of a change initiative implemented by his or her organisation. It is also the internal state that influences an individual's choices of personal action, or a response tendency towards the change. Therefore, since teachers are arguably the most important group of professionals for our nation's future hence, the need to find out the reward systems that is capable of motivating teachers' attitudes, whether there is a significant relationship between rewards of teachers and their attitudes, and motivational factors that influence the attitudes of the teachers.

Statement of the Problems

Teacher motivation is a major determinant of students' performance in national examinations. Attitudes manifested in teachers include; unwillingness to participate in school activities, poor attendance, unexpected absence, late coming, lack of additional training, uncreative and non-stimulating teaching, lack of interest in meetings, unhelpful attitudes when assistance is needed, resistance to contributing more than what is required of them and development of arguments between colleagues. Consequently, school managers often employ unpleasant measures such as threats of transfer, query, and non-recommendation for promotion, or termination of appointment to bully teachers with the thoughts of navigating teachers' attitudes to work. Despite all those measures teachers' attitudes have still remained negative and most schools continue to wallow in an academic obscurity, year in, year out. This trend has become a major source of concern to the government and other stakeholders in education.

Therefore, the performance of a given school depends entirely on the teacher's effort and if a given teacher is unhappy with his/her job, he/she will not emphasize his/her teaching. In light of these, the problem is that we do not know the reward system that could serve as a motivator to teachers' attitudes to work, the relationship between the reward of teachers and their attitudes to work in Taraba State, Nigeria.

Purpose of the Study

This research work examined how much a reward system could serve as a motivator to teachers' performance in Taraba State, Nigeria. Therefore, the researchers sought to;

i. determine the reward systems that are capable of motivating teachers' attitudes to work in senior secondary schools in Taraba state.
ii. Determine the relationship between rewards of teachers and their attitudes to work in senior secondary schools in Taraba state.

Research Questions

The following research questions were raised to guide the study:

i. What are the reward systems that are capable of motivating teachers' attitudes to work in senior secondary schools in Taraba state?
ii. What is the relationship between rewards of teachers and their attitudes to work in senior secondary schools in Taraba state?

Concept of Reward System

Armstrong (2010) in Yamoah (2013) defined reward systems as consisting of an organization's integrated policies, processes, procedures and practices for rewarding employees in accordance with their contribution, skill, competencies and market-value. Yamoah (2013) also posited that reward is the benefit that arises from performing a task, rendering a service or discharging a responsibility. The main reward for performing work is salary or wages. Aside salary and wages, many employers also offer pension benefits, paid lunch, child education, health insurance, official car, beneficial loans, bonuses, and many more. Reward system is an important tool that management uses to influence employees' motivation. In other words, management uses reward system to attract people to join the organization, keep them coming to work and motivate them to perform to high levels (Agwu, 2013).

To encourage employees for good job performance rewards are a powerful method. When managers don't recognize rewards and encourage the employees for their performance, then they can upset the customers, and when the manager gives rewards to them they will exceed the expectations of customers (Ibbotson, 2007 cited in Naveda, Shazia & Shabana, 2013). Rewards systems are outcomes or events in the organization that satisfy work-related needs. Rewards systems are much more than just bonus plans and stock options but while they often include intrinsic incentives, they also include extrinsic types like promotions, non-monetary bonuses, vacation holidays or even a simple "thank you" from a manager. Since high morale and productivity go hand in hand, it is, however, imperative for managers to reward employees when they hit organizational targets and stretched standards set by the organization. Agwu (2013) in his study on the impact of a fair reward system on employees' job performance defines a reward system as any process within an organization that encourages, reinforce or compensate people for taking a particular set of action. In other words, organizational rewards system refers to ways and modalities (qualities) by which workers in an organization can be motivated and stimulated to put more interest and effort that will lead to attainment of the organizational goals for the success and the good of the organization.

Concept of Attitude

There are varied definitions, which converge around the concept of attitude. Flores (2017) defines attitude as one's predisposition, or one's tendency to respond positively or negatively towards a certain idea, object, person, or situation. Attitude influences an individual's choice of action, and responses to challenges, incentives, and rewards (together called stimuli). Fishbein and Ajzen, (2010) cited in Kin and Kareem (2017) see attitude as a learned predisposition to respond to an object in a consistently favourable or unfavourable way. A person's attitude is often a reflection of how they evaluate an object, person or situation on a dimension ranging from positive to negative. According to Olatunde-Aiyedun (2021), four major components of attitude include:

1. Affective; this refers to emotions or feelings;
2. Cognitive: This involves beliefs or opinions held consciously;

3. Conative: this is an inclination for action, and
4. Evaluative: positive or negative response to stimuli.

According to Win and Nwe (2020), positive and favourable attitudes not only make individuals to perform their work in a better manner but also make the work satisfying and rewarding to them. Unfavourable attitude on the other hand reveals tired, boring and unacceptable individuals. Measuring attitude accurately is not an easy task. Its objective assessment needs a type of measurement that can help people to determine to some extent in a reliable and accurate way the nature of one's attitude towards a given object, idea or person. Ahmad et al. (2013) cited in Win and Nwe (2020) assert that teachers with positive attitude have stable emotions and feelings; they demonstrate affection, patience, sincerity and care while interacting with teachers, parents or school staff. They do not work in isolation. Such teachers work in collaboration and they have high self-esteem. Students do not hesitate to meet them as they are accessible to everyone openly.

To determine the reward systems that are capable of motivating teachers' attitudes This section identified and discussed the reward systems which motivate teachers' attitude to work. These reward systems include; remuneration and compensation, professional training and development, working situation, working environment, salary offer, recognition, and promotion.

1. Remuneration and Compensation

Martono, Khoiruddin and Wulansari (2018) stated that remuneration reward system is usually implemented to motivate employees so that they perform better, are more productive, and are not easily moved to other companies, establish a service-oriented behavior, and avoid corruption. Remuneration can be in the form of money or salary, fixed allowances, variable allowances, incentives and other facilities. Remuneration is the total compensation received by the employees in return for the services he or she has done (Agustiningsih, Armanu, Djumilah, & Noermijati, 2016 cited by Martono et. al., 2018). Compensation system should attract and retain the talent an organization needs, encourage employees to develop their skills and acquire the abilities needed by the organization, motivate employees and create team spirit in which employees care about the organization's success. According to Stahl (2009) in Akpan and Ntuk (2023), compensation is the monetary payments (wages, salaries, and emoluments, bonuses, current and deferred) used to reward employees. Similarly, Casio (2012) in Akpan and Ntuk (2023) considers compensation reward as direct financial payments plus indirect payments in the form of fringe benefits.

2. **Professional Training and Development**

Shatia (2011) in Nweneka (2019) defines career development as a means of providing employees with opportunity to grow, especially to those employees who deliver performance. Nweneka (2019) sees career development as not a mere management responsibility. It is a composite organizational process which involves people, addressing their ambitions, assigns them roles and responsibilities commensurate with their potential evaluates, their performance, and creates job positions to accommodate growth ambitions of employees.

3. **Working Situation**

Firestone and Pennell, 1993 cited in Adil (2013) stated that it is the responsibility of the school management to provide teachers with such a learning organization which could not only facilitate their professional development but also instill a feeling of expectancy of pleasure and future success by enhancing their technical competence.

4. **Working Environment**

According to Liu (2021) the work environment has a significant impact upon employee performance and productivity. By work environment we mean those processes, systems, structures tools or conditions in the work place that impact favorable or unfavorable individual performance. The work environment also includes policies; rules, culture, resources, working relationships, work location and internal and external environmental factors, all of which influence the ways those employees perform their job functions.

5. **Salary Offer**

Liu (2021) opined that the risk of a decrease in salaries, sometimes accompanied by a decline in the status of the profession relative to others, is that teachers' incentives to provide quality teaching might become (or remain) insufficient. Liu (2021) underlines the fact that low wages or low salaries drive teachers into other activities to the detriment of teaching, which recent years, in many developing countries high levels of teacher turnover and absenteeism have indeed become entrenched.

6. **Recognition**

Wang, Liu and Lin (2016) opined that recognition is an intrinsic motivation that is essential in driving employees to feel valued. Some of the ways in which organizations can offer recognition to their employees include acknowledging the employee performance publicly, providing employees with a day off, and providing them with good office working space. Therefore, employee recognition is highly regarded as a powerful communication technique. For a number of people in an organization, receiving a generous note of thanks is far more important than receiving something in terms of monetary rewards because one of the greatest employee's needs is to feel appreciated at the workplace. Indeed, Human beings naturally like to feel appreciated in recognition of their good deeds.

7. **Promotion**

Promotions, according Biney (2020), tend to affect the long-term satisfaction of employees. This can be done only by elevating the employee to a higher stage and offering a title with the increased accountability and responsibility due to employee efforts, behavior and period serving a specific organization. She further explains that this type of reward is vital for the main reason of redundancy and routine. The employee is motivated in this type of reward to contribute all.

To determine the relationship between Teachers' Rewards and their attitudes to work

Green and Awotua (2011) in Ondima, Okibo, Nyang, Mabeya, and Nyamasege (2014) as cited by Alordiah (2018) revealed that teachers who are well motivated in the learning process tend to do well in their line of duty, even when the learning environment is not ideal. There are two main types of motivation; extrinsic and intrinsic motivation. Extrinsic motivation is the willingness to carry out an activity for reasons outside the individual while intrinsic motivation is the willingness to carry out an activity for reasons within the individual. Most educational stakeholders agree that teacher motivation depend on an array of factors such as levels of remuneration, incentives, location of school, recognition and prestige, career development, opportunities for further training, condition of service, workload, promotion, learning environment and public image (Guajardo, 2011 & Adelabu, 2005 as cited by Mark, 2015).

Teachers are expected to render high job performance because of their crucial role in education. However, they are sometimes accused of laziness, purposeful lethargy, lack of dedication and zeal to work, while teachers on their part argue that the existing reward system does not satisfy their basic needs and aspirations (Ubom & Joshua, 2004). On the other hand, educational institution would be in jeopardy if the teachers specifically are employed not based on merit, poorly remunerated, not rewarded for incidental contributions, and not exposed or given other fringe benefit or incentive. This will therefore lead to the failure of educational policies and principles. The National Policy on Education (NPE, 2004) enumerated the need for "a highly motivated conscientious and effective" teaching staff at all levels of education.

The poor salary package and the irregular mode of payment adversely affect teacher's performance in the classroom. Peterson (2003) as cited by Wasiu and Adebanjo (2014) viewed that the current school environments are a reward scarce setting for professional work and often seem to work against teachers best effort to grow professionally and improve students learning be referred to as those factors that operate within the school system which if not made available to the teachers would hamper performance, cause stress, dis-content and frustration all of which

subsequently reduce students quality output and affect teachers' attitude to the work which could lead to decision to leave the job.

Usman (2015) cited by Ossai and Ikpeba (2022) posited that teachers complain of a lack of fringe benefits or reward systems like transport, housing and medical allowance for many years; lack of recognition, merit awards, bonuses and in-service training. In a study of teacher motivation decisions made by Nosheen and Hina (2015) cited in Ossai and Ikpeba (2022), using the network of private high schools in Baba-walpur, it was revealed that staff members were encouraged by the presence of teachers' rooms, a friendly environment, the availability of learning resources and small classroom sizes. Ossai and Ikpeba (2022) further explain that motivation contributes to improving employee productivity. Therefore, it means that ethical and motivated teachers are committed to giving their best to achieve the greatest result. Furthermore, studies on motivational strategies for teachers have shown that teachers are motivated by some kind of incentives which become an impetus that drives teachers to have the capability of reaching their highest height of potential if well rewarded or motivated. According to Edo, Otti, Okpara, and Julius (2018) in Ossai and Ikpeba (2022), development in the schools has to be geared toward acquiring or sharpening the capabilities of teachers to perform various obligations, tasks and functions associated with or related to their present or future expected roles. This means increases in knowledge, skills and the development of a positive attitude to work for the enhancement of productivity and quality services.

Methodology

Correlational research design was used for the study. The targeted population comprises of 2,368 teachers from 316 public secondary schools in the whole Taraba State (TSPPSMB, 2023). A sample size of 322 was obtained at the confidence level of 95% margin of error of 5.0% using research adviser sample table. Multi-stage sampling procedure is adopted for the study. In the first stage, one Local Government was randomly selected from each of the Education Zones. At the second stage, purposive sampling was used to draw out a school which was included. The justification for using purposive sampling is because here the researcher decides the criterion for the selection of the sample. At the third and final stage, the simple random sampling technique was employed to select the adequate sample of respondents.

A researcher-developed questionnaire was used, titled; Reward System as Motivator to Teachers' Attitudes to Work in Taraba State Questionnaire (RSMTAWQ). The questionnaire was divided into two (2) sections (A and B). Section (A) will comprise the Bio-Data of the respondents, and section (B) was designed based on two (2) clusters (i.e., the research objectives) on four (4) Likert scales of Strongly Agree (SA), Agree (A), Strongly Disagree (SD), and Disagree (D). Cluster 1 is made up of eight (8) items to answer question one (1), and Cluster 2 is made up of seven (7) items which will be correlated with cluster 1 to answer question two (2). The instrument was tabled before three experts in Educational Management in the Department of Educational Foundations, Faculty of Education Federal University Kashere, Gombe State for validation. The reliability of the instrument was determined through the conduct of pilot testing using a total of 40 teachers randomly selected from two secondary schools in Wukari Education Zone which is not part of the sample for the study but share similar characteristics. The tool used to test reliability was Cronbach alpha and the final reliability coefficient for the instrument was 0.776. Thus, the questionnaire was deemed to be suitable for the study.

Therefore, the data collected was subjected to appropriate quantitative statistics using SPSS which include; frequency counts, means, standard deviations, percentages and Pearson's Correlation.

Analysis and Discussion of Research Questions

1. Research Question One: What are the reward systems that are capable of motivating teachers' attitudes to work in senior secondary schools in Taraba state?

Table 1: Showing the mean ratings of respondents about reward systems that are capable of motivating teachers' attitudes to work

s/	Item description	Response n							
	CLUSTER A: reward systems that are capable of motivating teachers' attitudes to work	SA	A	D	SD	**Sum**	**X**	**Std. D**	**Dec**
1	Remuneration and Compensation is a reward systems capable of motivating teachers' performance	456	300	136	35	927	2.91	1.0027	**A**
2	Professional training/development is a reward system capable of motivating teachers' performance	512	147	170	55	884	2.79	1.151	**A**
3	Working situation is a reward system that is capable of motivating teachers' performance	76	210	296	80	662	2.09	0.841	**D**
4	Recognition is a reward system capable of motivating teachers' performance	480	216	142	54	892	2.81	1.119	**A**
5	Promotion is a reward system capable of motivating teachers' performance	196	612	102	13	923	2.91	0.668	**A**
6	Applause is a reward system capable of motivating teachers' performance	456	261	156	38	911	2.87	1.036	**A**
7	Salary offer is a reward a system capable of motivating teachers' performance	544	330	106	18	998	3.15	0.897	**A**
8	Retention is a reward system capable of motivating teachers' performance	376	297	178	35	886	2.79	0.990	**A**
	Cluster Mean						**2.79**	**1.017**	**A**

Source: Field Survey, 2024

Strongly Agree = SA, Agree = A, Strongly Disagree = SD, and Disagree = D, X = Mean, Std. D = Standard Deviation, Dec = Decision.

From the table of statistics in Table 1 above on reward systems that are capable of motivating teachers' attitudes to work in Jalingo Education Zone, the mean rating and standard deviations of the respondents are presented. The majority of the mean scores of respondents are equal to, or above the acceptance level of 2.50. The respondents agreed with most of the items. They agreed that remuneration and compensation is a reward system capable of motivating teachers

performance (x = 2.92; SD = 1.007); Professional training and development is a reward system capable of motivating teachers performance (x=2.79; SD = 1.151); they also agreed that Recognition is a reward system capable of motivating teachers performance (x = 2.81; SD = 1.119); that Promotion is a reward system capable of motivating teachers performance (x = 2.91; SD= .668); respondents further agreed on the item that inquired whether applause is a reward system capable of motivating teachers performance (x = 2.87; SD= 1.036); that Salary offer is a reward system capable of motivating teachers performance (x = 3.15; SD = .897). Equally, respondents agreed that Retention is a reward system capable of motivating teachers' performance (x = 2.79; SD= .990). Respondents however disagreed with 1 out of 8 items, that the Working situation is a reward system that is capable of motivating teachers' performance (x=2.09; SD= .841). Due to the mostly high mean scores on most of the ratings, which influenced the final mean score, a final cluster mean score of 2.79 and standard deviation of 1.017 was realized. This implies that these items are listed among the reward systems that are capable of motivating teachers' attitudes to work in senior secondary schools in Taraba state.

Research Question Two: What is the relationship between the rewards of teachers and their attitudes to work in senior secondary schools in Taraba state?

Table 2a: Showing the mean ratings of respondents concerning Research Question Two

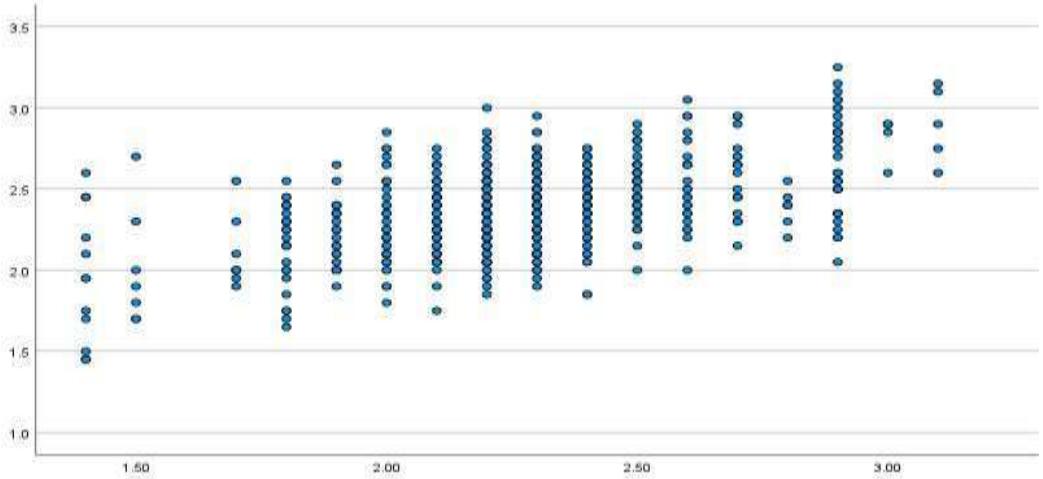
s/	Item description	Response				n			
	CLUSTER B: teachers' attitudes to work	SA	A	D	SD	**Sum**	**X**	**Std. D**	**Dec**
9	Teachers in Taraba state Work harder when recognized	112	558	144	31	845	2.67	0.772	**A**
10	Teachers perform their tasks satisfactorily	156	330	290	23	799	2.52	.802	**A**
11	Teachers in Taraba state are passionate about their job	320	411	150	25	906	2.86	.887	**A**
12	Teachers in Taraba state exhibit high self-esteem on the job	108	504	184	30	826	2.61	.775	**A**
13	Teachers in Taraba state work in collaboration with parents and other teachers	300	303	172	55	830	2.62	1.029	**A**
14	Teachers in Taraba state are very willing to accept new responsibilities on the job	52	453	180	63	748	2.36	.844	**D**
15	Teachers in Taraba state show enthusiasm towards their job	280	246	250	40	816	2.57	0.970	**A**
Cluster Mean							2.60	**.926**	**A**

Source: Field Survey, 2024

Strongly Agree = SA, Agree = A, Strongly Disagree = SD, and Disagree = D, X = Mean, Std. D

= Standard Deviation, Dec = Decision.

Table 2b: Showing boxplot and correlation between reward system in cluster 1 and teachers' attitude in cluster 2.



Boxplot Showing Diagrammatic Representation of Correlation between Reward System and Teachers' Attitudes

Descriptive Statistics

	Mean	Std. Deviation	N
Reward System	2.79	1.017	322
Teachers' attitude to work	2.60	.926	322

Correlations

		Reward System	Teachers' attitude
Reward System	Pearson Correlation	1	.657**
	Sig. (2-tailed)		.000
	N	322	322
Teachers' attitudes to work	Pearson Correlation	.657**	1
	Sig. (2-tailed)	.000	
	N	632	632

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

Table 2a above shows the survey summary on perceptions of respondents on teachers and their attitudes to work in senior secondary schools in Taraba state. The mean scores and standard deviations are presented. Respondents disagreed with only 1 out of the 7 items on that cluster. They disagreed that Teachers in Jalingo Education Zone are very willing to accept new responsibilities on the job (x = 2.36; SD = 0.844). On the other hand, respondents agreed to the remaining 7 items that Teachers work harder if they are recognized (x = 2.67; SD = 0.772); that Teachers perform their tasks satisfactorily (x = 2.52; SD = 0.802); and that Teachers in Jalingo Education Zone are passionate about their job (x = 2.86; SD = 0.887). The remaining three items, 12, 13, and 15 all have mean scores of 2.61; 2.62; and 2.57 respectively, which were above the criterion mean of 2.50. The grand or cluster mean score is seen to be 2.60 with a standard deviation of 0.926, which means that respondents agreed that teachers have positive attitudes towards their jobs in senior secondary schools in Taraba state.

Furthermore, in Table 2b, a correlation analysis between available reward systems and the evident attitudes of teachers shows a strong, positive, and significant correlation (N = 322; r = 0.657; p = < 0.05) between the two variables being compared.

Discussion of Findings

The findings of this study were made by using mean scores, standard deviations, and Pearson Correlation to analyse the two research questions.

Reward systems that are capable of motivating teachers' attitudes to work in senior secondary schools in Taraba state

The mean scores and corresponding standard deviation scores by respondents on the reward systems that are capable of motivating teachers' attitudes to work in senior secondary schools in Taraba state were summarized. The majority of the items show a rating above 2.50 on the scale. From the types of reward systems practiced in secondary schools to motivate teachers' attitudes, respondents rated them above 2.50 on most of the questionnaire items because remuneration and compensation were seen as reward systems capable of motivating teachers' performance. Also, professional training and development is a reward system capable of motivating teachers' performance. The working situation, recognition, promotion, applause, salary, and job retention were all seen as acceptable reward systems capable of motivating teachers toward better performance.

Therefore, a cluster mean of (x = 2.79) was realized, revealing in this study that most of these reward systems are capable of motivating teachers' attitudes to work in senior secondary schools in Taraba state. Such mean scores were equally used during hypothesis testing, which established a strong relationship between the rewards of teachers and their attitudes to work in senior secondary schools in Taraba state (N=317, X^2 = 305.000; p< 0.000).

This implies that when reward systems are in place, it will also reveal a positive motivation in teachers' attitudes to work in secondary schools in Taraba State. These findings align with Adetunji, Abari, and Mohammed (2021) who examined the relationship between the reward system, teachers' attitude to work, and their productivity and found that the reward system has to do with teachers' attitude to work. These findings are equally in agreement with Adil (2013) who examined the impact of the rewards system on teacher's motivation in private schools in Karachi and found that it is possible to observe a negative effect of poor salary offers on teacher's motivation, particularly in the context of a developing country.

The principal as an administrator has the duty of ensuring the satisfaction of all members of his teaching team. He therefore needs to make provisions for the immediate motivational needs of employees to assure their attitude and performance. This is one of the tenets of Maslow's theory, which guides the understanding of this study: developing all workers to the fullest extent possible for their own and their company's highest prosperity. Similarly, the findings of this study reveal the emphasis of Frederick Herzberg's two-factor theory earlier explained in this study that factors that result in job satisfaction are intrinsic to the job itself and are known as "Motivators or Satisfiers" such as achievement, recognition, responsibility, advancement, possibilities of personal growth and the work itself.

Relationship between rewards of teachers and their attitudes to work in senior secondary schools in Taraba state

Mean average, standard deviation, and Pearson correlation scores showing respondents' perception of teachers' attitudes to their work in senior secondary schools in Taraba state were presented. Most responses were seen to be above the criterion mean of 2.50 because respondents agreed with 6 out of the 7 items. When both variables were correlated, there was a significant, positive, and strong correlation of 0.657. Thus, the study finds that there is a relationship between the rewards of teachers and their attitudes toward work in senior secondary schools in Taraba state.

The findings of this study align well with Wasiu et. Al. (2014), and Biney (2020) whose studies also found a significant influence of both intrinsic and extrinsic rewards as well as the opportunity

for promotion, career development, staff abilities to accomplish tasks, and management trust in staff as the strongest predictors of performance of teachers. Given the established relevance of recognition, salary, and promotion as variables that present possibilities for personal growth, this study further affirms Herzberg's assertions based on the two-factor theory that achievement, recognition, responsibility, advancement, and possibilities of personal growth in a job can build a high level of motivation. In the same vein, the findings of this study affirm the core ethos of Victor Vroom's expectancy theory, where the theorist asserts that employees have different expectations and levels of confidence about what they are capable of doing. Management must discover what resources, training, or supervision the employees need.

Conclusion

From the results of the findings, the researcher concluded that:

There are reward systems that are capable of motivating teachers' attitudes to work in senior secondary schools in Taraba state and they were; remuneration and compensation, professional training and development, recognition, promotion, applause, salary offer, and retention are reward systems capable of motivating teachers' performance.

Secondly, there is a positive relationship between the rewards of teachers and their attitudes toward work in senior secondary schools in Taraba state and they are; teachers work hard if they are recognized, teachers perform well if they are well remunerated, salary offers increase the performance of teachers, support and welfare influence teachers performance, promotion increase teachers performance and retaining teachers influence their performance.

Recommendations

In the light of the findings of this study, the following recommendations are made:

1. Reward systems such as remuneration and compensation, professional training, recognition, promotion, applause, good salary offers and retention which are capable of motivating teachers' attitudes to work should be sustained where they are already in place and where they are lacking, they should be put in place.
2. There is need to discover what resources, training, or supervision the employees need which has relationship with their attitudes to work.

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RELATIONSHIP BETWEEN STUDY SKILLS AND ACADEMIC PERFORMANCES OF BIOLOGY EDUCATION STUDENTS IN TERTIARY INSTITUTIONS

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Abstract
Examination Malpractices, drop-outs, and poor academic performance have steadily risen in Tertiary Institutions. This menace has become a concern to educators and counsellors who want to understand and provide solutions to this epidemic. This study examined the relationship between Study Skills and Academic performance of Biology Education students in Tertiary Institutions in Lagos. Four objectives were raised, and five research questions and four hypotheses were formulated to guide the study. A total of 150 pre-service teachers completed the instruments (10-scale Learning and Study Strategies Inventory (LASSI 3rd Edition), Biology Achievement Test, and Study Skills Checklist). Percentage, mean, and standard deviation were used to analyse the research questions, while the null hypotheses were tested using ANOVA and multiple regression at a 0.05 significance level. The results revealed poor study skills and an overdependence on exams among biology education students. This concludes that study skills and their dimensions are statistically significant to academic achievement. It was recommended, among others, that government and non-governmental organizations should help set up Learning Laboratories in Tertiary Institutions.

Keywords: Study Skills, Pre-Service Teachers, Tertiary Education, Academic Achievement

Introduction
An African wise saying states, 'Success has many brothers', yet Success cannot be attained without deliberate and cumulative learning experiences or processes. It becomes even more tasking with the much-acclimatized distractions from technological breakthroughs today. The reality beholds us, if one must succeed, one must learn and re-learn; to learn and re-learn, one must consciously set out for an effective and efficient skill in studying. So, learning how to study or develop good study skills is a lifelong process (Karimiam, 2014; Kaushar, 2013), and modifying this study method according to the needs of the time. The development of good study skills is the highway to an individual's academic achievements and life goals (Udeani, 2012). The success of an individual could inevitably depend upon a simple, small change in study skills, which could make a big difference in goal setting and the organization of his life study skills.
The feeling of guilt upon failure is inevitable if one doesn't look forward to studying. Once an individual acknowledges that studying is not innate, it becomes clear that an organized program is necessary to encourage effective study habits. (Arul, 2014). Learning how to study is a long-term process. As one goes on studying, one finds more techniques and methods that offer new information, leading one on an interesting and successful path. So, learning how to study or develop good study skills is a lifelong process (Northedge A. 2007), and one should be ready to modify one's study method according to the needs of the time.

The foremost aim of education is the manifestation of perfection already in man. (Arul, 2014; Barbara, 1999; Sasikala, 2012). A choice of course in Biology Education among the Science Education department at a tertiary institution would be laudable since its objectives/goals range from the development of comprehensive education, problem-solving, analysing, scientific reasoning, communication of scientific understandings and many more skills, which are categorised as 21st-century generic skills. These skill sets are required for survival or as a basic human need and are essential for a decent living and moral life both in the workplace and in society. Thus, the tool enabling this manifestation is the study skills of that individual. (Arul, 2014).

Teaching students to use the appropriate study skills to understand how they are thinking about biology provides an important step on the path to thinking like a biologist (AAAS, 2011). In the context of undergraduate biology teaching, the choice of appropriate sets of study skills to be impacted or transferred during these transactions cannot be over-emphasized, rather a conscious effort is to be taken to ensure its visibility in the goal set ahead. Learning how to study is a long-term process. As we study, we find more techniques and methods that offer new information leading one to an interesting and successful direction. Adopting Claire Ellen Weinstein's (2016), Learning & Study Skills Inventory (LASSI) 3rd Edition which was birthed on extensive research, development, and testing for about ten years led to the creation of the LASSI, which is designed to measure learning and study strategies related to skill, will and self-regulation components of strategic learning. The focus is on both covert and overt thoughts, behaviours, attitudes, and beliefs that relate to successful learning and that can be altered through educational interventions. The LASSI identifies the strengths and weaknesses of the learner and provides feedback about areas that may prove to be more challenging, such as study skills, organization, or time management. The results of the LASSI assessment, if used in isolation, are a great resource to both the learner and the coach, who will work together to create a personalized learning plan and connect the learner with resources and strategies to improve performance and overall experience of being a distinctive learner. There are 10-scale dimensions of study skills identified by LASSI 3rd Edition, which are categorized into three Component of learning strategies that correlate to the Checklist from Cook Counselling Centre of the Students Affairs department of Virgin Tech, Blacksburg, USA, directed by Christopher Flynn (May 2, 2017) on dimensions of study skills, ranging Time Scheduling, Concentration, Reading, Listening and Note-taking, and Exam. The 10 LASSI scale is elaborated thus:

a. The Skill Component of Strategic Learning: Information Processing, Selecting Main Ideas, and Test Strategies - These scales examine students' learning strategies, skills, and thought processes related to identifying, acquiring, and constructing meaning for important new information, ideas and procedures, and how they prepare for and demonstrate their new knowledge on tests or other evaluative procedures.
b. The Will Component of Strategic Learning: Attitude, Motivation and Anxiety
- These scales measure students' receptivity to learning new information, their attitudes and interest in college, their diligence, self-discipline, and willingness to exert the effort necessary to complete academic requirements, and the degree to which they worry about their academic performance.
c. The Self-regulation Component of Strategic Learning: Concentration, Time Management, Self-Testing and Using Academic Resources – These scales measure how students manage, or self-regulate and control, the whole learning process through using their time effectively, focusing their attention and maintaining their concentration over time, checking to see if they have met the learning demands for a class, an assignment or a test, and using study supports such as review sessions, tutors or special features of a textbook.

There has been a growing emphasis on critical thinking skills and meaningful learning in the 21st century, which are essential for achieving outstanding performance, particularly in the Sciences

that demand strong analytical and diagnostic abilities. To understand the ongoing issue of poor academic performance in science subjects among students in Nigeria, it is crucial to assess their study skills. Examination malpractice and increased drop-out rate (Daily Trust, 2024) are fast becoming Nigeria's biggest threat to educational development today (Chikendu, 2022). This scourge is the order of the day in our primary, secondary, and tertiary institutions inclusive of teacher education institutions. These anomalies have been linked to the superficial study skills among teachers during their training, thereby instilling the same dexterity in their students and the educational system at large. Thus, a critical examination of neonate teachers will be imperative to retrospect and be therapeutic for this malady. This study aimed to investigate the relationship between study skills and the academic performance of Biology Education students in tertiary institutions in Lagos State, Nigeria.

Objectives of the Study

a. To examine the level of study skills of Tertiary Education Students in Biology
b. To examine the relationship between study skills and academic performance of Tertiary Education Students in Biology.
c. To determine the relationship between dimensions of study skills and academic performances of Tertiary Education Students in Biology.
d. To determine the joint contribution of gender, age, educational qualification, and dimensions of study skills to academic performances of Tertiary Education Students in Biology.

Research Questions

a. What is the level of study skills of tertiary education students in the study of biology?
b. To what extent will study skills relate to the academic achievement of tertiary education students in biology?
c. To what extent will dimensions of study skills relate to the academic achievement of tertiary education students in biology?
d. To what extent will age relate to tertiary education students' study skills to their academic achievement in biology?
e. What are the relative contributions of age, gender, academic qualification, and each dimension of study skills to the explanation of variance in tertiary education student's academic achievements in biology?

Research Hypotheses

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

$H0_1$ – there is no significant relationship between study skills and academic performance of tertiary education students in biology.

$H0_2$ – there is no significant relationship between dimensions of study skills and academic performance of tertiary education students in biology.

$H0_3$ – there is no significant relationship between the age of tertiary education students and study skills in their academic performance in biology.

$H0_4$ – there is no significant contribution of age, gender, academic qualification, and each dimension of study skills to the explanation of variance in tertiary education students' academic performances in biology.

Significance of the Study

By addressing these issues, the study hopes to provide actionable recommendations for; Educational Policy Makers: The findings of this study can provide valuable insights for educational policymakers. School Administrators: Teachers are the most important school-based factor in affecting student achievement levels. Knowing what study skill sets would improve teacher's academic performance during training will help administrators and evaluators prioritize

who to hire, retain, and assign to classes through definite measures of their study skill sets. Curriculum Developers and Teacher Training Institutions: Findings are useful to enhance teacher training programs, ensuring that new teachers are equipped with effective strategies for teaching biology. The mastery of good study skills by pre-service teachers would be of immense value to individual teachers' academic achievement (mastery of the contents and delivery), thereby handing on such batons of success to students during interactions and classroom transactions.

Research Methodology Research Design

The descriptive survey research design was adopted for the study. The study surveyed the relationship between study skills and academic performances of biology education students in tertiary institutions in Lagos state.

Population of Study

The target population of the study were undergraduates and postgraduate pre-service biology teachers from tertiary institutions in Lagos State, Nigeria. The sample of the study consists of 150 pre-service biology teachers randomly selected (both male and female) from four purposively selected tertiary institutions as these institutions offered biology education as a course of study.

Research Instrument

The research instruments used were an Inventory, Checklist and Biology Achievement Test.

1. Adopted Learning & Study Skills Inventory (LASSI, 3rd Edition 2016). The LASSI is a 10-scale, 64-item (5-point Likert type) assessment device that was developed at the University of Texas at Austin by Claire Ellen Weinstein, Ph.D. & Co. Scoring items were done as follows; Very much typical of me (A) = 5, Fairly typical of me (B) = 4, Somewhat typical of me (C) = 3, Not typical of me
   (D) = 2, and Not at all typical of me (E) = 1. Using the statistical software SPSS the internal consistency reliability was determined at Cronbach Alpha (**α**) 0.844.
2. A checklist was used to assess the pre-service teacher's 'toolbox' of study skills. Adopted from Cook Counselling Centre of the Students Affairs department of Virgin Tech, Blacksburg, USA directed by Christopher Flynn (May 2, 2017). Scoring items was done as follows; YES = 0, NO = 1. The reliability value of 0.779 was ascertained using Cronbach Alpha (**α**).
3. Biology Achievement Test (BAT) was used to assess the respondent's performance in Biology. This consisted of a 4-option multiple choice of 30 items for which a table of specifications was constructed to ensure content validity.

The researcher personally visited the selected institutions to administer the instruments. The inventory, checklist and BAT were personally distributed to respondents of this research in the four selected tertiary institutions with proper monitoring and collected after forty-five minutes. In each institution visited, the researcher sought and obtained permission from the Head(s) of the Department for the administration of the instrument with a letter of Authorization. The researcher obtained permission, introduced, and explained the purpose of the study, and achieved a 100% return rate of the distributed materials. The data collected were analysed using descriptive statistics of Mean and Standard Deviation. Inferential statistics of Analysis of Variance (**ANOVA**) and Multiple Regression Analysis were tested at the significance level of 5% using the SPSS v21.

The results of the analysis are presented in the tables below:

TABLE 1.1: Descriptive statistics of Academic performance B.A.T score

	N	Minimum	Maximum	Mean	Std. Deviation
B.A.T Score	**150**	**4.00**	**28.00**	**15.5667**	**4.93096**

TABLE 1.2: Distribution of Respondents by Gender

GENDER	Frequency	Per cent	Valid Percent	Cumulative Per cent
MALE	**44**	**29.3**	**29.3**	**29.3**
FEMALE	**106**	**70.7**	**70.7**	**100.0**
Total	**150**	**100.0**	**100.0**	

Table 1.2 revealed that 29.3% of respondents are male while 70.7% are female.

TABLE 1.3: Distribution of Respondents by Age Range

AGE RANGE	Frequency	Per cent	Valid Percent	umulative Percent
BELOW 18	**27**	**18.0**	**18.0**	**18.0**
19 - 24	**85**	**56.7**	**56.7**	**74.7**
25 - 30	**23**	**15.3**	**15.3**	**90.0**
ABOVE 30	**15**	**10.0**	**10.0**	**100.0**
Total	**150**	**100.0**	**100.0**	

Table 1.3 revealed that 18%, 56.7%, 15.3% and 10% of respondents are between the age range of below 18, 19 – 24, 25 – 30, and above 30, respectively.

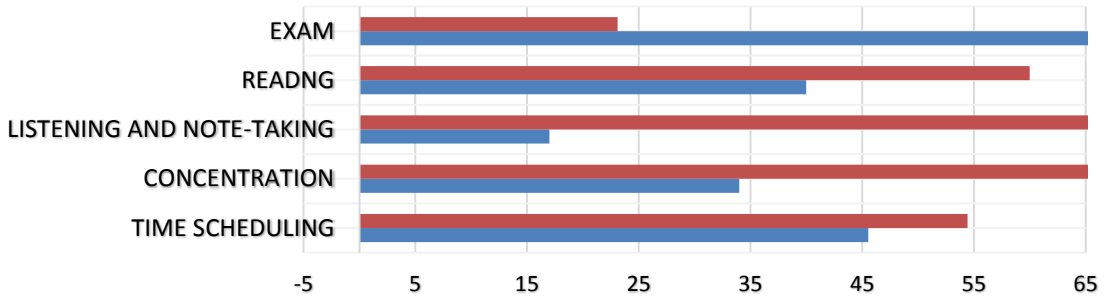
TABLE 1.4: Distribution of Respondents by Qualification in view

QUALIFICATION	Frequency	Per cent	Valid Percent	Cumulative Per cent
N.C.E	**28**	**18.7**	**18.7**	**18.7**
B.ED	**114**	**76.0**	**76.0**	**94.7**
M.ED	**8**	**5.3**	**5.3**	**100.0**
Total	**150**	**100.0**	**100.0**	

Table 1.4 revealed that 18.7%, 76%, and 5.3% of respondents were Biology Education Students, studying for the qualification of N.C.E, B.ED, and M.ED, respectively.

ANALYSIS OF RESPONSES TO RESEARCH QUESTIONS RESEARCH QUESTION 1
What is the level of study skills of tertiary education students to the study of biology?

TABLE 2.1: Graphical presentation of the Respondents on the level of study skills



	TIME SCHEDULING	CONCENTRATION	LISTENING AND NOTE-TAKING	READNG	EXAM
NO %	54	66	83	60	23
YES %	46	34	17	40	77

The bar chart above describes the level of study skills of tertiary Education students to the study of Biology, which states 77% study skill set on Exam. 46%, 34%, 40%, and 17% on Time Scheduling, Concentration, Reading, Listening, and note-taking, respectively. Subjectively, we could say academic achievement of Tertiary Education Students could be linked to their Exam skills (Test Strategies or Self-Testing and Anxiety).

Research Question 2

To what extent will study skills relate to the academic performances of tertiary education students in biology?

TABLE 2.2: Mean Ratings and Standard Deviation of the Respondents on the relationship to study skills levels

Variables	N	Mean (μ)	S.D
Academic Performance	**150**	**16.79**	**3.96**
Study Skills Total	**150**	**212.87**	**25.06**

Table 2.2 shows the mean ratings and standard deviations of the respondents. The results show respondents' study skills with a mean score of 212.87 (25.06) and academic performance of 16.79 (3.96), respectively.

Research Question 3

To what extent will each dimension of study skills relate to the academic achievement of tertiary education students in biology?

TABLE 2.3: **Mean Ratings and Standard Deviation of the Respondents on the relationship to each dimension of study skills and Biology Achievement Test score.**

VARIABLES	Mean	Std. Deviation	N
B.A.T	**15.5667**	**4.93096**	**150**
MOTIVATION (MOT)	**30.1133**	**7.05067**	**150**
ATTITUDE (ATT)	**13.7200**	**3.47787**	**150**
ANXIETY (ANX)	**29.9467**	**6.51873**	**150**
CONCENTRATION (CON)	**15.8267**	**3.03392**	**150**
INFORMATION PROCESSING (INP)	**26.7867**	**3.47491**	**150**
SELECTING MAIN IDEAS (SMI)	**22.3533**	**4.23336**	**150**
SELF-TESTING (SFT)	**19.6400**	**2.94987**	**150**
TEST STRATEGIES (TST)	**16.5667**	**4.18437**	**150**
TIME MANAGEMENT (TMT)	**20.9800**	**3.77108**	**150**
USING ACADEMIC RESOURCES (UAR)	**16.9333**	**2.53212**	**150**

Table 2.3 indicates the average performance of the sample on the different dimensions of study skills. The dimensions of study skills of the sample respondents were higher and very slight better results were observed for dimensions of Motivation (Mean=30.11), Anxiety (Mean=29.94), Information processing (Mean=26.78), Selecting Main Ideas (Mean=22.35), Time Management (Mean=20.98), Self-Testing (Mean=19.64), Using Academic Resources (Mean=16.93), and Concentration (Mean=15.82). While Attitude (Mean=13.72) is the only dimension of study skills its mean score is below average B.A.T score.

Research Question 4

To what extent will age have a direct influence on tertiary education students' study skills in biology?

TABLE 2.4 Mean Ratings and Standard Deviation of Age range of Respondents on their Study Skills.

AGE RANGE	N	Mean	Std. Deviation
BELOW 18	**27**	**215.8148**	**16.76314**
19 - 24	**85**	**211.5059**	**24.19348**
25 - 29	**23**	**204.3478**	**31.26225**
30 & ABOVE	**15**	**228.3333**	**26.65029**
Total	**150**	**212.8667**	**25.05930**

Table 2.4 indicates the overall average performance of the sample in the different age ranges. The mean scores of Below 18 (215.82) and 30 & Above (228.33) were higher, though the majority age range of 19 – 24 had a mean score of 211.51 while 25 – 29, men score of 204.35.

Research Question 5

What are the relative contributions of age, gender, academic qualification, and each dimension of study skills to the explanation of variance in tertiary education students' academic performances in biology?

TABLE 2.5 Mean Ratings and Standard Deviation of B.A.T score, age, gender, academic qualification, and each dimension of study skills.

VARIABLES	Mean	Std. Deviation	N
B.A.T	15.5667	4.93096	150
GENDER	1.7067	0.45682	150
AGE	2.1733	0.84143	150
QUALIFICATION (QU.ANF)	1.8667	0.47298	150
MOTIVATION (MOT)	30.1133	7.05067	150
ATTITUDE (ATT)	13.7200	3.47787	150
ANXIETY (ANX)	29.9467	6.51873	150
CONCENTRATION (CON)	15.8267	3.03392	150
INFORMATION PROCESSING (INP)	26.7867	3.47491	150
SELECTING MAIN IDEAS (SMI)	22.3533	4.23336	150
SELF-TESTING (SFT)	19.6400	2.94987	150
TEST STRATEGIES (TST)	16.5667	4.18437	150
TIME MANAGEMENT (TMT)	20.9800	3.77108	150
USING ACADEMIC RESOURCES (UAR)	16.9333	2.53212	150

TESTING OF HYPOTHESES RESEARCH HYPOTHESIS 1

There is no significant relationship between study skills and the academic performance of tertiary education students in biology.

Table 3.1: ANOVA TABLE on the Relationship of overall study skills to Academic performance

ANOVA TABLE	Sum of Squares	df	Mean Square	F-Cal	F-Tab	Remarks
Between Groups	1971.983	54	36.518	2.101	1.4290	Reject
Within Groups	1650.850	95	17.377			
Total	3622.833	149				

F – Calculated > F – Tabulated @ df = 54:95, 149. Critical value 0.05. H_{01} is rejected

Table 3.2: Measure of Association TABLE on the Relationship of overall study skills to Academic achievement.

Measures of Association

	R	R Squared	Eta	Eta Squared
B.A.T * SSQ.TOTAL	0.176**	0.031	0.738	0.544

****Significant at 0.05 level (2 – tailed)**

Both Table 3.1 and Table 3.2 show a strong positive association and significance between Study Skills and academic performance of tertiary Education Students in Biology, so better study skills lead to better academic achievement. Therefore, the null hypothesis is rejected. There is a significant relationship between Study Skills and the Academic Performance of Tertiary education Students in Biology.

Since Overall study skills are significant to academic performance. Thus, the a need to take a

closer look to ascertain the significant relationship between the dimensions of study skills on the academic performance of tertiary Education students in Biology.

Research Hypothesis 2
There is no significant relationship between **each dimension of study skills** and **academic performance** of Tertiary Education Students **in Biology.**

TABLE 3.3: **ANOVA table of the Respondents on the relationship between each dimension of study skills to Academic performance in Biology.**

ANOVA TABLE		Sum of Squares	df	Mean Square	F-cal	F-tab	REMARKS
MOT	Between Groups	986.373	19	51.914	1.051	1.57	Accept
	Within Groups	6420.700	130	49.390			
	Total	7407.073	149				
ATT	Between Groups	473.008	19	24.895	2.435	1.57	Reject
	Within Groups	1329.232	130	10.225			
	Total	1802.240	149				
ANX	Between Groups	1148.443	19	60.444	1.516	1.57	Accept
	Within Groups	5183.130	130	39.870			
	Total	6331.573	149				
CON	Between Groups	315.676	19	16.615	2.046	1.57	Reject
	Within Groups	1055.817	130	8.122			
	Total	1371.493	149				
INP	Between Groups	614.880	19	32.362	3.552	1.57	Reject
	Within Groups	1184.293	130	9.110			
	Total	1799.173	149				
SMI	Between Groups	1076.931	19	56.681	4.625	1.57	Reject
	Within Groups	1593.342	130	12.256			
	Total	2670.273	149				
SFT	Between Groups	169.364	19	8.914	1.028	1.57	Accept
	Within Groups	1127.196	130	8.671			
	Total	1296.560	149				
TST	Between Groups	808.876	19	42.572	3.075	1.57	Reject
	Within Groups	1799.957	130	13.846			
	Total	2608.833	149				
TMT	Between Groups	696.657	19	36.666	3.351	1.57	Reject
	Within Groups	1422.283	130	10.941			
	Total	2118.940	149				
UAR	Between Groups	181.191	19	9.536	1.601	1.57	Reject
	Within Groups	774.142	130	5.955			
	Total	955.333	149				

Recall, overall Study Skills have a significant relationship with the academic performance of Tertiary Education students in Biology, thus a closer look at each dimension of study skills identifies; Attitude, Concentration, Information processing, Selecting of Main Ideas, Test Strategies, Time management and Using Academic Resources having significant relationship with Academic performance. While the other dimensions of study skills are not statistically significant to Tertiary Education students' performance in Biology. Therefore, the null hypothesis is rejected for each dimension of study skills, except Motivation, Anxiety and Self – Testing dimensions of Study Skill.

Research Hypothesis 3
There is no significant relationship between the age of tertiary education students and their study skills in biology.

TABLE 3.4 ANOVA table on the relationship between Age and Study Skills of tertiary Education students to Academic performance in Biology.

ANOVA TABLE	Sum of Squares	df	Mean Square	F-Cal	F-Tab	nark s
Between Groups	**5649.461**	**3**	**1883.154**	**3.127**	**2.61**	**Reject**
Within Groups	**87917.872**	**146**	**602.177**			
Total	**93567.333**	**149**				

(F-cal = 3.127; F-tab = 2.61; df = 3:146 @ critical value 0.05 is Rejected).
The null hypothesis is rejected indicating that age is a statistically significant factor to the overall study skills of Tertiary Education Students in Biology.

RESEARCH HYPOTHESIS 4
There is no significant contribution of age, gender, academic qualification and each dimension of study skills to the explanation of variance in tertiary education students' academic performances in biology.
To analyse Hypothesis 4, the independent data collected (**age, gender, academic qualification, and each dimension of Study skills**) were correlated with **B.A.T scores** using Multiple Regression Analysis. The results are tabulated below;

TABLE 3.5 Multiple Regression Model of age, gender, academic qualification, and each dimension of study skills with academic performance of Tertiary Education students in Biology.

Model Summary

Model	R	R Square	Adjusted R Square	Error of the Estimate
1	**0.628[a]**	**0.395**	**0.337**	**4.01472**

a. Predictors: (Constant), UAR, ANX, QU.ANF, SFT, GENDER, MOT, AGE, INP, ATT, CON, TST, SMI, TMT
Table 3.5 indicates that coefficients of determination (Adjusted R^2) = 0.628, which gives proportion of variance (Adjusted R^2 X 100) = 62.8%. This implies that the independent variables (age, gender, academic qualification, and each dimension of study skills) accounted for 62.8% of the variance in the dependent variable (Academic performance in Biology). Hence, the joint contribution of age, gender, academic qualification, and each dimension of study skills is significant on the Academic performance in Biology (F-cal = 6.828; F-tab = 1.67; df = 13:136 @ critical value 0.05).

TABLE 3.6 ANOVA Table of age, gender, academic qualification, and each dimension of study skills with academic performance of Tertiary Education students in Biology.

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
Regression		**1430.785**	**13**	**110.060**	**6.828**	**.000[b]**
1	**Residual**	**2192.048**	**136**	**16.118**		
Total		**3622.833**	**149**			

a. Dependent Variable: B.A.T

b. Predictors: (Constant), UAR, ANX, QU.ANF, SFT, GENDER, MOT, AGE, INP, ATT, CON, TST, SMI, TMT

TABLE 3.7 Relative contribution of the Independent Variable (age, gender, academic qualification, and each dimension of study skills) to the dependent variable (academic performance of Tertiary Education students in Biology).

Coefficients[a]

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	-1.455	4.771		-0.305	0.761
GENDER	1.653	0.773	0.153	2.139	0.034
AGE	1.652	0.473	0.282	3.494	0.001
QU.ANF	3.648	0.772	0.350	4.727	0.000
MOT	0.054	0.052	0.078	1.037	0.301
ATT	-0.104	0.118	-0.073	-0.883	0.379
ANX	-0.123	0.073	-0.162	-1.685	0.094
CON	-0.056	0.146	-0.034	-0.384	0.702
INP	-0.017	0.114	-0.012	-0.146	0.884
SMI	0.1390	0.114	0.119	1.210	0.228
SFT	-0.162	0.126	-0.097	-1.282	0.202
TST	0.036	0.114	0.031	0.318	0.751
TMT	0.367	0.137	0.280	2.680	0.008
UAR	0.023	0.160	0.012	0.142	0.887

a. Dependent Variable: B.A.T

Table 3.7 shows the relative contribution of the Independent Variable (age, gender, academic qualification, and each dimension of study skills) to the dependent variable (academic performance of Tertiary Education students in Biology). All the independent variables AGE: B=1.652, t=3.494, p=0.00<0.05; GENDER: B=1.653, t=2.139, p=0.00<0.05; ACADEMIC QUALIFICATION: B=3.648, t=4.727, p=0.00<0.05; and
each dimension of study skills; MOTIVATION: B=0.054, t=1.037, p=0.00<0.05; ATTITUDE: B=-0.104, t=-0.883, p=0.00<0.05; ANXIETY: B=-0.123, t=-1.685, p=0.00<0.05; CONCENTRATION: B=-0.056, t=-0.384, p=0.00<0.05; INFORMATION PROCESSING: B=-0.017, t=-0.146, p=0.00<0.05; SELECTING MAIN IDEA: B=0.139, t=1.210, p=0.00<0.05; SELF-TESTING: B=-0.162, t=-1.282, p=0.00<0.05; TEST STRATEGIES: B=0.036, t=0.318, p=0.00<0.05; TIME MANAGEMENT: B=0.367, t=2.680, p=0.00<0.05; USING ACADEMIC
RESOURCES: B=0.023, t=0.142, p=0.00<0.05; contributed significantly to tertiary Education Students Academic performance in Biology.

Discussion of Findings

This study revealed that:

i. Tertiary Education Students possess poor study skills which emphasizes only on exam towards Biology.
ii. There is a significant relationship between Study Skills and Academic performance of Tertiary Education Students in Biology.
iii. There is a significant relationship between each dimension of study skills (except Motivation, Anxiety and Self-Testing) and the Academic performance of Tertiary Education Students in Biology.
iv. There is significant relationship between Age and Study Skills of Tertiary Education students towards their Academic performance in Biology.
v. AGE: B=1.652, t=3.494, p=0.00<0.05; GENDER: B=1.653, t=2.139, p=0.00<0.05; ACADEMIC QUALIFICATION: B=3.648, t=4.727, p=0.00<0.05; and each dimension of study skills; MOTIVATION: B=0.054, t=1.037, p=0.00<0.05; ATTITUDE: B=-0.104, t=-0.883, p=0.00<0.05; ANXIETY: B=- 0.123, t=-1.685, p=0.00<0.05; CONCENTRATION: B=-0.056, t=-0.384, p=0.00<0.05; INFORMATION PROCESSING: B=-0.017, t=-0.146, p=0.00<0.05; SELECTING MAIN IDEA: B=0.139, t=1.210, p=0.00<0.05; SELF-TESTING: B=-0.162, t=-1.282, p=0.00<0.05; TEST STRATEGIES: B=0.036, t=0.318, p=0.00<0.05; TIME MANAGEMENT: B=0.367, t=2.680, p=0.00<0.05; USING ACADEMIC RESOURCES: B=0.023, t=0.142, p=0.00<0.05; contributed significantly to tertiary Education Students Academic performance in Biology.

In Hypothesis 1, shows there is a significant relationship between Study Skills and Academic performance of Tertiary Education Students in Biology; hence the null hypothesis was rejected. Analysis of Hypothesis 2 shows that there is a significant relationship between each dimension of study skills (as listed by LASSI 3rd Edition except Motivation, Anxiety and Self-Testing) and Academic performance of Tertiary Education Students in Biology; the stated hypothesis is rejected. The analysis of hypothesis 3 indicates that there is no significant relationship between Age of tertiary Education students and study skills to their Academic performance in Biology; the null hypothesis is rejected. Also, hypothesis 4 shows that there is composite contribution of (dimensions of study skills) Using Academic Resources, Anxiety, Qualification, Self-Testing, Gender, Motivation, Age, Information Processing, Attitude, Concentration, Test Strategies, Selecting Main Ideas, Time Management to the variance of Tertiary Education students Academic performance in Biology which indicates that coefficients of determination (Adjusted R^2) = 0.628, which gives proportion of variance (Adjusted R^2 X 100) = 62.8%.; thus the hypothesis is rejected.

Conclusion

It is observed from the research findings with regards to dimensions of study skills that Tertiary Education students especially in Biology have over-dependent study skills relating to Examination this indicates, that students only study during or for Examination. It can also be deduced from the study that Biology Education student's study skills have a positive significant relationship to their academic performance. The study revealed that there is an influence of using academic resources, anxiety, qualification, self-testing, gender, motivation, age, information processing, attitude, concentration, test strategies, selecting main ideas, and time management to the explanation of variance of tertiary education students' academic performance in biology. Furthermore, it can be deduced that Anxiety, Motivation, and Self-Testing have a negative influence on the academic performance of students. It can be concluded that the little success rate recorded among Biology Education students is not deviant to the success rate of the subject at Secondary school level of Education which will require a good grasp of study skills and its dimensions to alleviate the trends.

Recommendations

1. The belief that students will inherently develop effective study habits is a misconception that should be abandoned. Research indicates that study skills are a significant predictor of academic success. In the realm of teaching Biology at the tertiary level, it is essential to choose the right set of study skills to impart during instruction. A deliberate effort must be made to integrate these skills into the learning objectives, as mastering the art of studying is a long-term endeavour. Therefore, I advocate for the inclusion of Study Skills as a mandatory credit course that all students must complete before graduating from their programs in higher education.
2. The slight statistical significance between study skills and academic achievement among pre-service biology teachers suggests that the existing grading system does not adequately reflect the influence of these skills. Assessing academic success about study skills can motivate students to enhance their abilities and establish these skills as graduation requirements. Therefore, it is essential to adjust academic evaluations to better recognize the impact of study skills on overall performance.
3. A programme of adequate study skills will definitely reduce the amount of debilitating anxiety a student possesses and this will subsequently improve his performance. It must be remembered that merely talking to students will not necessarily improve their study skills. It is important to engage them in conscious systematic training to improve their study skills practices.
4. The findings suggest that effectively utilizing academic resources plays a significant role in enhancing academic performance, particularly for tertiary education students in Biology. Establishing mentor relationships, including peer collaboration, is essential for cultivating important 21st-century skills.
5. We urge the Federal Government, the Ministry of Education, private organizations, and non-governmental organisations to establish 'Study Laboratories' or 'Study Learning Centres.' These centres would implement diagnostic measures to enhance the study skills of tertiary-level students. Additionally, they would gather valuable data on prospective students' entry-level study skills and track their progress, thereby informing admission decisions. This initiative has the potential to significantly reduce dropout rates, academic failures, and post-graduation unemployment while also minimizing incidents of examination malpractices.

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THE PARADOX OF DOING AND WRITING PHILOSOPHICALLY IN EDUCATION: AN EXPLORATION OF THE TENSION AND IMPLICATIONS

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Abstract
The hallmark of philosophy of education is generally centered on the clarification of concepts, logical connections between ideas, and critical analysis of arguments. This study explores the paradox of doing and writing philosophically in education, examining how critical pedagogy can help resolve this paradox. The paradox raises important questions about the nature of philosophical inquiry in education, which are addressed through a critical analysis of philosophical pedagogical approaches and their implications. This study enables stakeholders to understand the role of philosophy in teacher education programs, highlighting the need for a more balanced understanding of the complex relationship between philosophical thinking, methodological approaches, and educational practice globally. By exploring the paradox of doing and writing philosophically in education, this paper aims to inform and revitalize philosophical approaches that foster critical thinking, creativity, and intellectual growth. Philosophical reasoning is closely related to scientific experimentation, both involving hypothesis testing and evidence-based truth-seeking. Philosophy and science share common ground, starting with facts and seeking broad, compatible explanations. This paper argues that education programs should emphasize philosophical approaches to cultivate rationality in all areas of educational endeavours.

Keywords: Paradox, Education, Doing philosophy, Writing philosophy, and Philosophical inquiry.

Introduction
Understanding the nature of a discipline sheds light on its methodology of approach. The paradox of doing and writing philosophically in education significantly influences teaching and learning, challenging educators to reconcile the seemingly contradictory demands of practical and theoretical philosophical inquiry. This creates a pressing need for reflection on how philosophy undergirds or upholds its methodology, helping us understand what philosophy means. Philosophy, as a discipline, deals with genuine problems of nature and society, exploring fundamental questions about reality (metaphysics), values (axiology), and knowledge (epistemology). Our approaches in philosophy of education and philosophy are geared towards logical connections. Logic is the system of reasons or standards required for systematic and accurate reasoning. Lawrence (2008) states that *philosophy is rigorous disciplined and guided analysis of some most difficult problems that man has ever faced*. Philosophy examines, synthesizes, criticizes, evaluates, and analyzes various assumptions and beliefs to find logical relationships between concepts and words. Philosophy is characterized by logical, consistent, and systematic thinking to reach sound, coherent, and consistent conclusions. *Logical reasoning is the characteristic element of general philosophy, examining evidence from an impartial point of view, exposing prejudices, and giving evidence its due weight* (Akinpelu, 1981). Based on the above, one can opine that philosophy is based on persistent attempt to give insight and illuminate into the nature of realities through system _ reflection since its aims at knowledge, hence….*Philosophy seeks truth for its own sake and promotes intelligent inquiry, liberating us from prejudice and self-deception* (Pojman, 2012). Philosophy differs from other subjects and sciences in its facts,

methodology, and conclusions. This paper explores the paradox of doing and writing philosophically in education by examining its pedagogical approaches, nature of analysis, methodology, and modes of doing philosophy, such as prescriptive and speculative approaches.
The objectives of this paper are to examine and justify the nature of philosophical inquiry, investigate its fundamental characteristics and influence on education, clarify the structural framework for philosophical clarifications in education, and develop a philosophical framework addressing the paradox. The methodology used is phenomenological analysis and hermeneutic interpretation, examining the lived experience of philosophical method and interpreting the meaning and significance of the paradox within the educational philosophy framework. This paper sheds light on the complex nature of philosophical thinking and improves educational approaches that cultivate critical thinking, creativity, and intellectual growth to address the tension and resolve the paradox.

Statement of the Problem

Despite the factual nature of science and the abstract nature of philosophy of education, it is commonly observed that one of the most disturbing aspects of this situation is that we are in a world of constant change. This calls for logical reasoning to develop versatile solutions to educational problems. Equally, it is commonly observed that philosophy of education, unlike science, does not have a common method for finding solutions to problems. This is probably because philosophy is a profoundly theoretical activity that requires high intellectual capabilities to excel in its formulation. Based on the fact that philosophical inquiry is essential in education, the paradox of doing philosophy (practical application or approach) and writing philosophy (theoretical approach) or written representation is necessary to address the tension that hinders effective teaching and learning. Hence, the disconnect between the embodied, experiential nature of inquiry in education and the abstract written representation of philosophical ideas poses significant challenges for educators and learners.

About Doing and Writing Philosophically in Education

The logic of doing and writing philosophically in education represents two interrelated and interconnected approaches to philosophy of education discourse. These two approaches are interdependent and involve careful examination of several related issues, consolidating philosophical discourse. Philosophical methods are two ends of a straight line that can never be separated. Doing philosophy and writing philosophically are distinct aspects of philosophical inquiry or discourse. Doing philosophy is an active process of thinking, reasoning, analyzing, and evaluating ideas. Writing philosophy, on the other hand, refines, clarifies, and verifies the reasoning that occurs in the process of doing philosophy.
The two approaches can be categorized and analyzed:

a. Mode of doing philosophy
b. Mode of writing philosophically in education.

Modes of Doing Philosophy

There are three modes of doing philosophy in education, and these are:

a. Speculative Mode
b. Prescriptive Mode
c. Analytic Mode

Speculative Mode of Doing Philosophy of Education

In this mode, our mind is essential for speculation as an instrument in philosophy of education. With our mind, we can speculate on things that we cannot see or imagine things that are possible or impossible through pure reasoning. Our mind allows the philosophers to generate new ideas, valuable concept and creates innovation in education. Hence, the power of mind is to translate and relate. The speculation is energized with the power of the mind within context. The speculation

is done within the context of our social or cultural environment or political system. Hassan (2004) states that *philosophy of education is speculative when it seeks to establish theories about the nature of man, society, and the world by which to order and interpret the conflicting data of educational research and the behavioral sciences*. Speculative philosophy of education deals with the search for order, wholeness, linkages, and consistency in the realm of experience. It is interested in both the real and the abstract, hence it is sub-divided into metaphysics and epistemology. Ayeni (2016) states that *the speculative method deals with the application of reasoning to build a coherent and consistent worldview or the ideal world ought to be... integrates various ideas that generate from dimensions to establish/conclude.* One can therefore deduce that: this approach involves exploring possibilities and ideas about education, often considering hypothetical scenarios and their potential implications.

Prescriptive Modes of Doing Philosophy of Education

The prescriptive mode of philosophy of education focuses on specifying values, means, and ends that education should follow. *It seeks to establish standards, grounds, or criteria for judging values, conduct, and concepts like good and bad, right and wrong, and beautiful and ugly* (NTI 2018). This approach helps explore whether these qualities exist in things we presume or are merely projections of the mind. Prescriptive philosophers believe that behaviors are either positive or negative, not neutral, and seek to establish standards or criteria for actions as good or bad. In addition this approach involves making recommendations and setting standards for education, often based on established principles and values.

The logical deductions from this are:

a. Prescriptive philosophy of education aims to establish fundamental levels or standards for judging whether actions are worthwhile or not.
b. It specifies the ends of education, what education ought to do or follow, and the general means of attaining them, thereby solving problems of ends and means in education.
c. The prescriptive mode of philosophy of education is a reasoning attempt that gives direction to educational thought and practice by considering the nature of man, knowledge, and value systems.

Analytics Mode of Doing Philosophy in Education

Analysis is a method of philosophy that dates back to the origins of philosophy itself. It aims to clarify issues and concepts that arise from our daily discourse by examining the semantic properties of words and the logical organization of thought. Akinpelu (1981) attributes the development of analysis as a method of doing philosophy of education to rapid progress in the field of science and its empirical method of discovering truth and reality. Analytic philosophy has a broad scope and technique, which can be claimed as the analytic method, shared by most philosophers. It is considered the scientific approach to philosophy. The analytic mode of doing philosophy of education focuses on using words. and concepts to communicate, seeking clarity of thought through examination of meaning and logical connections between words, concepts, or ideas. Ayeni (2014) claims that *the analytical method of philosophy of education is characterized by logical, consistent, and systematic thinking to reach sound, coherent, and consistent conclusions. It examines how concepts, words, and issues are framed and organized to form a unified and reasonable thought.*

Logical deductions from analysis as a mode of doing philosophy of education include:

a. Preliminary diagnosis of issues and problems to prepare for solution-finding
b. Clear thinking and precise expression, applicable to one's ideas and statements or those of others
c. Need to clarify words and expressions through examination of meaning to determine the real sense of propositions
d. Identification of inconsistencies in logical and consistent presentations of ideas

e. Examination of educational issues and problems necessary for sustainable curriculum development

Analysis in the philosophy of education involves breaking down complex arguments or ideas into their constituent parts for a deeper understanding of their structural meaning or implications. Analysis can be categorized into:

a. Conceptual analysis
b. Logical analysis
c. Linguistic analysis

Conceptual Analysis

Conceptual analysis is the structural framework or the format into which philosophical arguments are fitted for proper clarification or presentation. Philosophy of education is analytic when it clarifies speculative and prescriptive statements, which involves explaining the meaning of the discourse, as well as clarifying its relevance, implication, and consequence for education as deemed fit. Wiredu (2016) states that *philosophy proceeds by concept analysis, generalization, and synthesis... it is important to realize from this onset that the elements that the philosopher deals with are concepts, and one (but please note only one) of his most pressing tasks is to elucidate them*. One may submit that Conceptual analysis is a technique that treats concepts as classes of objects, events, properties, or relationships, involving defining the meaning of a given concept by identifying and specifying the conditions under which any entity or phenomenon is or could be clarified under the concept in question. We can notice here that conceptual analysis examines the use, misuse, and abuse of words; it involves classification, examination of meaning, and the interrelationship of concepts in discourse. This is for the provision of an explicit understanding of the concepts under investigation. Conceptual analysis can be used as application, identification, and to explore the implications of different conceptual frameworks. For example, starting with questions like "What is knowledge?" or "What do we ought to know?" may start with conceptual clarification of the meaning of knowledge as well as critical examination of the issues relating to knowing. The various principal uses to which the word 'know' can be put would be considered. The conceptual analysis mode of the philosophy of education seems to rely on some sort of definitional structure of concepts so that one can give necessary and sufficient conditions for the application of the concept. For example, the concept of knowledge can be analyzed as having the concepts of belief, truth, and justification or the 'known' and the knowers as its components. Thus, the concept of knowledge can be thought to mean a true belief that can be justified. Sharma, A. P. & Highland (1991) states that *the philosopher wants to Know, not how the process of knowledge development takes place (though he will obviously have an interest in these areas of knowledge) but rather seeks to answer the process questions of what knowledge is and how education develops knowledge, is to proceed*. In conclusion, that particular form of knowledge can be justified at a particular time. It is here that philosophers of education will need, in addition to their conceptual equipment, to draw upon the centuries of tradition, in which sort have been examined and discussed. Such philosophers may then turn to Plato's conception of knowledge and examine its condition and relevance to education. In this wise, the nature, purpose, and scope of such knowledge can be examined and analyzed. All these are possible because humans have the ability to abstract ideas from sense experience, with capacity being controlled by natural laws of nature.

Logical Analysis

Logical analysis focuses on arguments and their logical structure. An argument occurs when one statement is inferred from another group or set of statements, which are said to provide grounds for the inferred statement. According to Adeniyi (2004), *an argument can be defined as a group of propositions or statements where one is claimed to follow from the others, which are alleged to provide grounds for the truth of that one*. Logical analysis examines how arguments are structured and identifies inconsistencies in the presentation of ideas through the use and discourse of certain

concepts. It shows how inconsistent arguments can be made consistent through logical presentation. *Logical thinking involves explaining why and how a result is obtained, how to conclude from available premises, and how to draw conclusions based on specific inference rules* (Fitrus & Malik, 2022). This includes analyzing arguments, identifying patterns of reasoning, and evaluating the strength of conclusions based on the evidence provided.

One can affirm that an argument exists when a statement is inferred from another set of statements that provide grounds for the inferred statement. The validity of logical arguments depends on the affirmation of their premises, which must provide absolute conclusion grounds for the conclusion to be true. Therefore, logical analysis premises on the validity of arguments within the discourse. The premises of arguments must equally provide supporting grounds to affirm the conclusion, as the logical connection between words is coherently connected and clarified. According to Towoju (2016), *logical analysis shows where appropriate how inconsistencies may come into logical presentation of ideas through the use of certain words.* Logical analysis is not always about the truth or falsehood of an argument but with its meaning in logical sequences.

Linguistic Analysis

In philosophical analysis, language is used to discover new grounds of knowledge and reconstruct existing knowledge, thereby adding to our store of knowledge. Through linguistic analysis, the logical connections between words, concepts, and ideas are clarified. Wittgenstein argues that language, *for instance, the word "know", can be used in various purposes and indefinite numbers of ways. He claims that the meaning of a word is determined by its use, meaning that in each case, the meaning of "know" is determined by its use in context. The word can mean different things across different contexts of usage.*

However, there may be cases where the meaning of a word cannot be essentially defined in terms of "truth", belief, or justification, which could constitute counterexamples to the linguistic analytical method. Fayzuilayera (2022) states that *linguistic analysis of words involves the study of the use of language tools in speech, examining methodological meanings, semantic capabilities, grammar, and syntactic capabilities of each morphological unit.* Additionally, linguistic analysis can be used to study the language of literary works, which may have relative meaning at a particular period, in order to interpret linguistic and linguopoetic derivations.

Mode of Writing Philosophically in Education

Writing philosophically in education requires clear conscience, logical presentation of ideas, and critical thinking. According to Owan Enol (2008), *philosophical writing in education aims to highlight the distinctive nature of philosophical inquiry, which involves critical, analytical, logical, and integrative thinking.* Philosophical writing in education employs various methods, including dialectical, speculative, prescriptive, scientific, historical, phenomenological, hermeneutical, and analytic approaches. The combination of these methods depends on the nature of the philosophical research. To write philosophically in education, one must be critical, which involves systematic and reflective evaluation, examination, and commentary on educational beliefs, practices, and theories. This requires analyzing and questioning assumptions, arguments, logical relations, and values. Additionally, philosophical writing in education involves integrating different elements, ideas, and concepts to form a meaningful whole. This integration fosters a comprehensive understanding of education, encourages critical and logical thinking, and recognizes education as an interconnected system of values.

Dialectical reasoning is another aspect of philosophical writing in education, which involves intellectual conversation, thesis, antithesis, synthesis, and critical thinking. This approach emphasizes the dynamics and relational nature of knowledge, creating a learning environment that values critical thinking and intellectual growth. Dialectic is the study of pure abstraction by pure

thought on reasoning, a reasons of attaining intellectual excellence and hence a general method of philosophical inquiry which occur at the discovery of a single ultimate principle of the universe. The logical deductions from the above are:

a. It emphasizes written reflection and analysis of discourse.
b. Encourages clear and concise communication of philosophical ideas in a logical, systematic, and consistent manner.
c. Focuses on developing well-supported arguments and critique.
d. Involves exploring philosophical concepts through written texts and scholarship.
e. Prioritizes clarity, coherence, and logical reasoning.

Steps for Doing and Writing Philosophically in Education:

With these few explanations, one may proceed to the steps of doing and writing philosophically in education majorly stipulation as:

a. Choose a philosophical issue or concept relevant to education such as the essence of man and education, the purpose of education, knowledge for educational reform, materialism and corruption in teaching and learning, ethics of teaching, and many more.
b. Analyse the existing philosophical underpinning of educational research related to the topic of your choice.
c. Relate your findings to the present needs in the field of education to determine its suitability to the present situation and continuity.
d. Define the philosophical terms relevant to your topics. Determine all the key concepts and define statement of the problems inherent in the researchable topic by analyzing the issue involved in the problem and synthesizes the critical point into a statement of the problem.
e. Construct logical arguments using a critical analysis, addressing your topic by using evidence and reasoning to support all your claims, this can be done through synthesizes of theme into thesis and antithesis.
f. Consider all your view from multiple and diverse perspective or (diverse philosophical perspective), through the application of relevant philosophical theories.
g. Using proper citation, write clearly and concisely in the presentation of your philosophical arguments and analysis.
h. Illustrate philosophical arguments/concepts with education theories.
i. Carefully address the potential criticism and conclude with implications for educational practices and present a base for future research.

Implications of Doing and Writing Philosophically in Education

Philosophy is intertwined with everyday life, and philosophical thinking promotes critical thinking, creativity, and innovation in educational approaches and problem-solving. Philosophical thinking informs writing, which enables clear and concise communication of essential ideas, leading to effective learning and teaching. The process of doing and writing philosophically in education has several implications:

a. It promotes informed and reflective educational practices
b. It fosters creativity and innovation in educational approaches
c. It informs ethical decision-making in education
d. It reveals the connection between education and other disciplines, encouraging a deeper understanding of complex issues
e. It ensures that educational practices are just and equitable
f. It has the potential to transform education by promoting social change through the examination of dominant narratives that hinder educational development Through doing and writing philosophically in education, we can discover and resolve paradoxes and tensions, ultimately revealing the value and significance of philosophical inquiry in education.

Conclusion

To develop a more comprehensive and effective philosophy of education, it's essential to understand the principles of doing and writing philosophically in education. The act of doing philosophy is closely tied to reasoning, which involves thinking, analyzing, and evaluating ideas. This reasoning process is the nucleus of doing philosophy and inherently informs and shapes writing philosophically in education. By recognizing the connection between reasoning and writing philosophically, we can work towards more effective philosophy of education.

Recommendations

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

a. Embrace uncertainty and skepticism: Philosophers should acknowledge the complexity and ambiguity of educational issues, embrace intellectual inquiry, and recognize that doubt is a crucial aspect of philosophical exploration.
b. Foster a spirit of wonder: Philosophers should cultivate curiosity and seek diverse perspectives, engaging with various philosophical traditions in educational contexts.
c. Write reflectively and explore multiple genres: Philosophers should explore their thoughts and assumptions through reflective writing, using dialogue, poetry, or other forms of expression to convey philosophical ideas and discourse.
d. Love, collect, and construct: Philosophers should allow practical conclusions from philosophical reflections on moral life to inform and marshal their actions, building coherent arguments and theories from the component parts of their thoughts.
e. Embrace vulnerability and truth: Philosophers should be willing to appropriate their ideas personally, recognizing that objective truth corresponds to the world in general. They should take risks to explore uncertain terrain in philosophical discourse and writing.

These recommendations serve as practical guides for researchers seeking to engage in philosophical inquiry and writing in philosophy and education.

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THE ROLE OF LANGUAGE, CULTURE, AND GOOD GOVERNANCE IN CURBING HUNGER AND POVERTY IN 21ST CENTURY NIGERIA

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Abstract
The concepts of language, culture and good governance possess merit for promoting community engagement, social cohesion, cultural awareness and understanding, language skills and active citizenship among others. Despite the facts that scholars in their field of discussion and critical works have made the importance of language, culture and good governance known as essential components of a healthy, functional society, yet, Nigeria is unable to find solutions to hunger and poverty in its society. Therefore, this paper focuses on investigating the effectiveness of the relatedness of language, culture and good governance in curbing hunger and poverty in 21st century Nigeria. The paper was based on Language and Social Change Theory. It is expected that this paper will help Nigerians to develop more effective strategies to addressing hunger and poverty through recognizing the interconnectedness of language, culture, and good governance.

Keywords: Language, Culture, good governance, curbing of hunger and poverty.

Introduction

Societal growth and development can be assessed from the perspective of a well-fed citizen with moderately available social amenities which guarantee the society a stable comfort in which to live in. With the present situation of Nigerians economy, it is clear that the country is undergoing a period of hunger and abject poverty. All claims of economic growth and development have barely impacted nothing on the lives of the common citizens. According to Pratt and Traugott (1980), language is viewed as a systematic means of communicating ideas and feelings by the use of conventionalized signs, sounds, gestures or marks having understandable meanings.

However, language if effectively used plays a major role in the process of correcting imbalances in the society wealth sharing and adjusting poverty rate with the hope of bringing down the level of poverty and hunger among the affected members of the Nigerian society. To this end, the importance of a language in any society cannot be overemphasized. Culture which is the beliefs, customs, practices and social behavior of a particular nation or people, if well harmonized can also play a crucial role in helping to curb hunger and poverty in Nigerian society. Good governance, on the other hands, involves the totality of the elected leaders doing the right thing to improve and impact positively on the lives of every citizen of their country. This will help as a major strategy to be employed to tackle if not if not totally eradicate hunger and poverty in the Nigerian society.

The main focus of this paper is to address the persistence of hunger and poverty in Nigeria despite economic growth highlight the need for innovative solutions and suggest strategies or policies that can provide answers to the following questions: How can language education enhance access to information on sustainable agriculture and nutrition? What role can cultural preservation play

in promoting traditional knowledge and practices that enhance food security? How can good governance forestall a society free from hunger and poverty especially in a multi-ethnic society like Nigeria in the 21st century?

The answer to these questions are not farfetched. Colonialism, slavery, lack of sustainable agricultural practices, rapid population growth, cultural and social norms perpetuate hunger and poverty, poor governance and corruption, authoritarian or oppressive regimes, international trade policies and agreements, climate change and natural disasters, weak social safety nets and support systems and unemployment and lack of job opportunities among others. Generally, the aim of this paper is to investigate the role of language, culture and good governance in curbing hunger and poverty in 21st century Nigeria.
In this article, the adopted theoretical framework is language and social change theory. On the other hand, attention is directed at the interconnectedness of language, culture, and good governance in addressing the issue of hunger and poverty in Nigeria country.

Objectives of the Study
i. To explore the potential of language education in enhancing access to information on sustainable agriculture and nutrition.
ii. To examine the role of cultural preservation in promoting traditional knowledge and practices that enhance food security.

iii. To investigate the impact of good governance to forestall a society free from hunger and poverty.

Literature Review
Theoretical Framework
The theoretical framework for this paper article is based on Language and Social Change Theory. This theory is attributed to various scholars, but the key figures include Ferdinand de Saussure, Ludwig Wittgenstein, Pierre Bourdieu, Mikhail Bakhtin and J. L. Austin. According to Ferdinand de Saussure, language and social change theory examines how language influences and reflects social structures, power dynamics and cultural norms, recognizing language as a tool for shaping and maintaining social reality. Hence, this theory is built upon the notion that language reflects and reinforces social structures (e.g., inequality, and dominance). The exponents argue that language ideology influences language use and social norms, and social cognition, shaping attitudes and beliefs.

The task that language and social change theory sets for itself is to analyze language's role in maintaining or challenging social hierarchies, investigate language's impact on shaping cultural norms and values, understand language's function in facilitating or hindering social change, and to also develop strategies for leveraging language to promote social justice and equality. It is to the credit of the theory for establishing the fact that language shapes reality and promotes social transformation.

Conceptual Framework
Language: According to Ajibade (2016), language is a pivotal of intention and a process of exchanging information from one person to another. Language is a means by which we express our thoughts and a key to unlocking all expressed thoughts. The misplacement of this vital key is the misplacement of people's thoughts and ideas.

Concept of Culture: Adeyẹmọ (2006) sees cultures as an all-encompassing term that identifies not only the whole tangible lifestyle of a people, but also their prevailing values and beliefs. To Ajibade (2016), culture is the general ways of life of people in a particular society which includes

language, art, music, dance, cuisine, architecture, values, norms, attitudes, rituals, dressing, customs and family life, patterns of work, religious ceremonies and leisure among others. Culture unites people through shared experiences and traditions, culture preserves history, customs, and tradition, culture transmits knowledge, skills, and values. In short, culture provides coping mechanisms and adaptability in Nigerian society.

Concept of Good Governance: Good governance according to Ferdinand de Yitametu (2024) is the totality of the elected leaders doing the right thing to improve the lives of the citizens of their country or community as the case may be. He stresses further that good governance refers to effective, accountable, and inclusive management of an institution, or country with the hope to ensure transparency, accountability, rule of law, responsiveness, equity, sustainability and efficiency. Base on this, people tend to see and believe that the benefits of good governance is entrenched in economic growth and stability, improved public services, enhanced citizen trust and engagement, better decision-making, corruption reduction, increased transparency and accountability, protection of human rights and sustainable development. Good leadership style ensures that power is exercised in a responsible, transparent, accountable manner, which ultimately benefits every citizen and society (Hadi, 2024).

Concept of Hunger: Hunger is viewed as a period when people are starving because they have no food to eat or feed on. Poverty is defined as a period in one's life whereby every opportunity of good living is tied to no improvement as a result of inadequate or complete absence of resources. To Daramola (2004), among the causes of hunger include poverty, conflict, climate change, food insecurity and social inequality. He stresses further that all these can lead to malnutrition, health problems, cognitive impairment, productivity loss and social unrest. Corroborating this, the United Nations confirms that 820 million people suffer from hunger globally.

Concept of Poverty: According to economics scholars and political analysts, poverty is a complex issue spreading across different dimensions. While the World Bank sees poverty as deprivation in well-being, the United Nations on the other hand considered it as a denial of choices and opportunities and a violation of human dignity. In the Nigeria society, the following types of poverties are observable; lack of education, unemployment or underemployment, limited access to healthcare, social inequality and discrimination, conflict and violence; environmental degradation, economic instability, corruption and poor governance. The effects of all these no doubt, lead to malnutrition and hunger, poor health outcomes, limited access to education, reduced economic opportunities, social isolation and exclusion, psychological trauma and increased mortality rates (Nussbaum, 2011).

Inter-Relationship of Language, Culture, and Good Governance as a Tripartite Solution to Hunger and Poverty Reduction

Looking at the above definitions of language, culture and good governance along with the various functions of language in human society, it is very clear that language is a very vital tool for promoting culture and good governance. No wonder then that Sola (2003) asserts that language can be used to soothe anger, excite, intimidate, discriminate, energize, create, destroy and so on. It is affirmative at this juncture to affirm that culture and good governance cannot be discussed without language, the three are interwoven. There is no denying the fact that hunger and poverty can be addressed and curbed, if the relatedness of language, culture and good governance are effectively strategized.

The Role of Language, Culture, and Good Governance in Curbing Hunger and Poverty in 21st Century Nigeria

The intersection of language, culture and good governance is critical for addressing the complex

challenges of hunger and poverty in 21st-century Nigeria. In the first instance, language is the medium through which every plan and programmes is communicated and shared among people of like minds in the society. Language influences how people think and understand hunger and poverty, how the use of language in policies and programmes affects resource allocation, how language stigmatizes or uplifts vulnerable communities, how effective use of language helps to convey requirements for assistance and how language maintains cultural identity and heritage. For instance, some language use such as, language of desperation assists to emphasize urgency and scarcity, language of empowerment fosters self-reliance and resilience while language of rights asserts entitlement to resources and dignity.

In an attempt to use language as a tool to curb hunger and poverty in our society, there should be a way of deliberating, opinion seeking, plan drawing, assessment and conclusion drawing. Language should be a vehicle through which the good view of well-meaning people of the society is communicated in order to pave way for positive development and socio-economic adjustment in the lives of the common citizen. Also, the language used should be free from bias, abuse, and sentiments and reflect the total commitments of the leaders in the society.

Accepting our cultural heritage would be of immense help to solving our problem especially hunger and poverty. Nigeria culture is cheaper, adorable and easy to maintain. Therefore, if we go by our culture, by patronizing our local materials like food, clothes, agricultural produce, fashion materials and so no, the problem of hunger and poverty will be adequately attended to because of the patronage. Today, many states are building tourism centers, natural resources centers and media cultural concerts in order to boost their economic activities. The example of ỌṢUN ÒṢOGBO celebration which drew participants and tourists all over the world to Òṣogbo is a very good example of how cultural heritage can promote income earning from the sales of local materials, fees charged from the attendees all help to improve the well being of the people of Oshogbo and adding to the popularity not only of Nigeria but Òshogbo of a tourist centre.

Good governance is the hub on which the lifeline of a developed society rotates, that is, a society cannot grow or develop when the leaders are corrupt, partial, insincere, and allow injustice at high places. Good governance, if put in place, would promote understanding, language harmonization, cultural and mineral resources exchange, and well managed along with unparalleled love among the citizens. Effective communication through orientation agencies of government on resources management, avoidance of waste, not setting on fire, not gracing cropped lands by herdsmen and avoid dumping waste in our rivers will go a long way in providing more food and water protein (fish) through our rivers. A society with good governance will never allow a citizen to wallow in hunger and be sending food meant for consumption in a state to another country for money. Example, during the recent food scarcity across the country different policies were adopted by different governors of each state in order to sustain food security in their various states.

Methodology

The study adopted the Language and Social Change Theory. The source of data collection was based on extensive reading of relevant textbooks in the library, journal articles, newspapers, recorded music and resource scholars.

Conclusion

The language will play a major role in efforts to get rid of hunger and poverty in the country if properly put into use. Language as a major means of sharing ideas has a lot of role to play in curbing hunger and poverty in Nigeria in the 21st century. Our heritage is also an essential solution provider while addressing the problem of hunger, poverty and good governance in our society. Language, culture and good governance are three children of the same mother whose proper harmonization would go a long way in solving the menace of hunger, poverty and poor governance

in the modern-day Nigeria society.

Effective government policies, and adherence to socio-justice through language use will no doubt promote rapid growth, rescue the society from poverty ridden communities, and freedom from corruption and resource mismanagement which are the impetus to speedy growth and total development.

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EFFECT OF TRAIT-FACTOR THERAPY ON VOCATIONAL CHOICES AND PREFERENCES AMONG SECONDARY STUDENTS IN SIX EDUCATION ZONES, TARABA STATE

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Abstract
This study examined the effects of trait-factor therapy on vocational choices and preferences of secondary students in Taraba State, Nigeria. The study adopted quasi- quasi-experimental research design. The sample consisted of 363 students from a population of 11,395. The "Motivation for Occupational Preference Scale for Senior Secondary School Students" (MOPSSSS) was adapted and validated (Cronbach Alpha Coefficient = 0.85). Mean, standard deviation, and Analysis of Covariance (ANCOVA) were used to analyze the data. The study revealed significant effects of trait-factor therapy on vocational choices and preferences. Reality therapy also showed significant effects on vocational choices. However, no significant differences were found between male and female students in terms of trait-factor therapy's impact on vocational choices and preferences. The study recommends training guidance and counseling officers in trait-factor counseling therapy. The results highlight the prevalence of gender stereotyping in vocational choices. The findings conclude that trait-factor therapy positively influences students' vocational choices and preferences. Recommendations include integrating trait-factor therapy into school counseling programs and addressing gender stereotypes to promote inclusive vocational guidance. The study contributes to the development of effective career guidance interventions in Nigerian secondary schools.

Keywords: Vocational Choice, Career Development, Trait-Factor, Therapy

Introduction
Vocational choice and career development are critical aspects of an individual's life that determine the appropriate shaping of future prospects and well-being (Corey, 2017). Previous studies and literature reveal that students have problems with their vocational choices and preferences. Researcher’s personal experiences and observations as a teacher at both the Junior Secondary and Senior Secondary Schools show that many students have no idea of vocational choices and preferences. It is common to see students in Arts and Humanity aiming at study Medicine and Engineering in future which obviously not possible. Sometimes students in Social and Management Sciences aiming at study Nursing, Midwife, Architecture and so on. This is a serious problem where secondary school students keep moving aimlessly without even knowing where they belong in terms of vocational choices and preferences. Studies by Zunker (2016) also show that vocational choices and preferences among secondary school students are influenced by a complex interplay of factors, including individual interests, family expectations, peer influences and societal norms. Understanding these factors is essential for providing effective career guidance and ensuring that students make informed decisions about their future careers. Efforts to eliminate gender stereotypes and provide diverse opportunities contribute to a more inclusive and equitable vocational landscape for all students. Students often fall towards vocations that align with their personal interests, passions, and natural abilities.

Career assessments and counselling can help students identify these interests and match them with suitable vocations. Research suggests that family and peer dynamics significantly influence vocational choices. Gatic et al. (2019) emphasize that parental expectations, guidance, and peer pressure play a pivotal role in shaping students' career decisions. Students often choose vocations

encouraged or discouraged by their families and friends. Educational experiences during secondary school years also impact vocational preferences. Corey (2019) notes that exposure to diverse subjects, extracurricular activities, and vocational guidance programs broaden students' horizons, informing their career decisions. Moreover, socio-economic background affects vocational choices. Students from lower-income families tend to prioritize vocations offering immediate financial stability; whereas those from more affluent backgrounds have the freedom to explore options aligned with their interests and established excellence.

Gatic et al. (2019), gender stereotypes mostly in an African context continue to influence vocational choices among secondary school students because of the initial backgrounds of our learners. Traditionally, certain careers have been associated with specific genders, and breaking away from these stereotypes can be challenging. Efforts to promote gender equality in vocational choices and preferences are essential condiments that promote appropriate career decisions among the students. Studies have shown that gender plays a significant role in vocational preferences among secondary school students. Research has identified trends in vocational preferences among male and female students, although individual variations exist. Male students tend to favor STEM fields (Science, Technology, Engineering, and Mathematics), such as engineering, computer science, and physics. Additionally, they show interest in careers related to sports, the military, and trades. In contrast, female students are more inclined towards careers in healthcare, education, social sciences, and arts. However, a growing trend of females entering traditionally male-dominated fields has emerged, driven by educational and societal shifts. This shift is particularly relevant in Taraba State, Nigeria, where vocational preferences are influenced by various factors. These include educational experiences, socio-cultural norms, family expectations, and access to resources and opportunities. These factors significantly impact senior secondary school students' career decision-making processes. Understanding these influences is crucial for developing effective career guidance programs that cater to the diverse needs and aspirations of students in Taraba State. It is imperative to provide senior secondary two (SS2) students with guidance and counselling interventions to help them make informed vocational choices and preferences. Trait-Factor offer unique perspectives and methodologies for assisting students in this crucial decision-making processes.

Trait and factor theory propounded by Frank Parsons in 1909, is an approach to career counselling that emphasizes the matching of individuals' traits and characteristics with the requirements of a specific occupation or career. It operates on the premise that individuals have inherent traits, abilities, and interests that are best suited for certain professions or occupations. Trait and factor theory therefore places a strong emphasis on assessing and identifying an individual's traits, including personality characteristics, aptitudes, interests, and values. These assessments are used to determine the most appropriate career paths that therapists use to put their clients on the right track of their realistic decisions, determinations, and processes. The theory relies on a comprehensive database of occupational information, including job requirements, responsibilities, and characteristics. This information is used to match individuals with careers that align with their traits. Trait-factor theory has historically been a foundational approach in career counselling. It provides a systematic and structured framework for helping individuals with career choices and preferences. However, critics argue that it oversimplifies the complexities of career decision-making by reducing it to a matching process.

There are various empirical studies that show the effectiveness of this approach. Gatic et al. (2019), Zunker (2016), Corey (2017) and Abdullahi (2016) found that trait-factor is effective and significant with vocational choices and preferences of students especially at the senior secondary school level of their education. Trait-factor represent distinct approach within counselling and psychotherapy, with each offering valuable insights and techniques for different therapeutic goals. Trait-factor theory has been foundational in career counselling, responsibility-focused approach

applicable in various counselling contexts. This choice depends on the specific needs and goals of the client as well as in the context in which counselling is taking place. Contemporary counselling practice often draws from multiple theoretical orientations to best serve the diverse needs of clients. Understanding the factors that influence vocational choices among secondary school students is crucial for guiding who toward fulfilling sustainable careers. Some recommendations based on the review of literature include: Schools should provide comprehensive career counselling services to help students identify their interests, strengths, and career options. This counselling should begin early in secondary education. Efforts should be made to eliminate gender stereotypes and biases in education and career guidance. Promoting diversity and inclusivity in vocational choices requires encouraging girls to explore STEM fields and boys to consider careers in traditionally female- dominated fields. To achieve this, active engagement from parents, communities, and educational institutions is crucial.

Parents and communities have a vital role to play in supporting students' vocational choices and preferences. This includes providing information on various career paths, access to resources and networking opportunities, and emotional support to foster confidence and self-awareness. Schools also play a critical role in exposing students to diverse career options. This can be achieved through interactive workshops and seminars, internships and hands-on experiences, and vocational programs and career guidance initiatives. Such exposure enables students to make informed decisions aligned with their strengths, interests, and values. To ensure the effectiveness of career guidance programs, educational institutions and policymakers must continually monitor and assess their impact. Programs should be adapted to address changing trends and student needs, and foster collaborations with industry partners and community organizations. By adopting this holistic approach, we can empower students to pursue fulfilling careers, bridge the gender gap, and cultivate a diverse and inclusive workforce.

Vocational development among secondary school students is a crucial aspect of their academic and personal growth, as it shapes their future career paths and life satisfaction. In Taraba State, like in many other regions, students often face challenges in making vocational choices and preferences due to various factors which include limited access to career guidance and counselling services, career talks, career trades, and career activities. Additionally, the effectiveness of different therapeutic approaches, such as trait-factor and reality therapies, in aiding students' vocational decision-making processes remains largely unexplored within the context of senior secondary education. This study aims to tackle the pressing issue of limited access to comprehensive career guidance faced by Senior Secondary Two (SS2) students in the Six Education Zones of Taraba State, Nigeria. Specifically, the key problem areas include: The scarcity of comprehensive career guidance and counselling services leaves SS2 students without the necessary support, leading to uncertainty and uninformed vocational choices. This deficiency in career support severely hinders their ability to make informed decisions about their future career paths and prospects, potentially jeopardizing their long-term success. The efficacy of trait- factor has been established as valuable tools in assisting individuals in making career decisions, of senior secondary education in the Six Education Zones, Taraba State, Nigeria. There is a need to determine whether these therapeutic approaches can effectively enhance students' vocational choices and preferences in the Six Education Zones of the State. Regional disparities in Education Zones: Taraba State, comprising ten distinct education zones, presents a complex landscape of socio-economic, cultural, and educational diversity. Each zone's unique characteristics potentially influence students' vocational choices and preferences in varying ways. Recognizing the impact of these regional disparities on the effectiveness of therapeutic interventions is crucial for developing tailored and targeted career counselling strategies. The existing literature reveals a significant knowledge gap regarding the impact of trait-factor and reality therapies on vocational choices and preferences among Senior Secondary Two students in diverse educational settings, particularly in Taraba State's Six Education Zones.

Purpose of the Study

The following objectives were formulated to guide the research study. These objectives include:

vii. Find out the effect of trait-factor therapy on vocational choices among Senior Secondary Two (SS 2) students in Taraba State.

viii. Determine the effect of trait-factor therapy on vocational preferences among Senior Secondary Two (SS 2) students in Taraba State.

ix. Find out the effect of trait-factor therapy on vocational choices among male and female Senior Secondary Two (SS 2) students in Taraba State.

x. Determine the effect of trait-factor therapy on vocational preferences among male and female Senior Secondary Two (SS 2) students in Taraba State.

Research questions

The following research questions were answered in this study

i. What is the effect of trait-factor therapy on vocational choices of Senior Secondary Two (SS 2) students in Six Education Zones, Taraba State?

ii. What is the effect of trait-factor therapy on vocational preferences of Senior Secondary Two (SS 2) students in Six Education Zones, Taraba State?

iii. What is the difference in the effect of trait-factor therapy on vocational choices of male and female Senior Secondary Two (SS 2) students in Six Education Zones, Taraba State?

iv. What is the difference in the effect of trait-factor therapy on vocational preferences of male and female Senior Secondary Two (SS 2) students in Six Education Zones, Taraba State?

Hypotheses

The following null hypotheses were postulated to guide the study and were tested at a 0.05 level of significance;

$H_{o1:}$ There is no significant effect of trait-factor therapy on vocational choices of Senior Secondary Two (SS 2) students in Six Education Zones, Taraba State.

$H_{o2:}$ There is no significant effect of trait-factor therapy on vocational preferences of Senior Secondary Two (SS 2) students in Six Education Zones, Taraba State.

i. There is no significant difference in the effect of trait-factor therapy on vocational choices of male and female Senior Secondary Two (SS 2) students in Six Education Zones, Taraba State.

ii. There is no significant difference in the effect of trait-factor therapy on vocational preferences of male and female Senior Secondary Two (SS 2) students in Six Education Zones, Taraba State.

Methodology Research Design

The research design that was adopted for the study was a quasi-experimental.

Population of the Study

The study covered all the senior secondary two (SS II) students in Taraba State, Nigeria with a total population of 11,395 students. The main reasons for selecting senior secondary two students for the study were based on the long stay experiences of the senior secondary two students in the schools and the fact that the final selection of subjects that determine career prospects of students is usually done in the second year of the senior secondary school level of their studies.

Sample and Sampling.

The study used a stratified and purposive random sampling technique at three different levels. At the first level, the selection of the two senior secondary school two students each from the Six Education Zones was stratified and it was based on the school type (private and public schools), school location (urban and rural areas) and the stratification process was carried out based on the spread of the three political zones in Taraba State. Three senior secondary schools were selected from the urban area and same for the rural area each, giving a total of six senior secondary schools

for both the experimental and the control groups. At the second level, purposive sampling was used to select the senior secondary schools II for the study.

Instrumentation

Motivation for Occupational Preference Scale (MOPS) developed by Bakare 1977 was adapted by this study. The title of the instrument was modified to "Motivation for Occupational Preference Scale for Senior Secondary School Students (MOPSSSSS) and the number of the items was increased from Bakare's 16-item to researcher's remodeled 40-item as responses that depicted the motivational forces that determined the vocational choices and preferences of the senior secondary school two students in the Six Education Zones, Taraba State, Nigeria.

Validation of the Instrument

Since the instrument for the study was adapted from Bakare 1977 instrument titled 'Motivation for Occupational Preference Scale', it was therefore taken to experts in Measurement and Evaluation, Guidance and Counselling, Mathematics, Statistics and Science Education in Taraba State University in order to validate the integrity of the adapted instrument. The face and content validity of the instrument was established.

Reliability of the Instrument

To establish the reliability index of the instrument, a pilot test was conducted in some selected senior secondary schools outside the sampled study area in Taraba State, Nigeria. The split half method was used to establish the reliability of the instrument.

Data Analysis Techniques

This study employed a combination of descriptive and inferential statistical techniques to analyze the collected data. The descriptive statistics utilized include frequency counts, percentages, bar graphs, means, and standard deviations. These statistical tools enable the summarization and visualization of the data, providing insights to address the research questions. Furthermore, inferential statistical methods are applied to draw conclusions and make inferences about the population.

Results

Table 1: Frequency and Percentage of Trait-Factor Therapy on Gender of Senior Secondary II Students

Therapy	Gender	Frequency	Per cent	umulative Percent
Trait-factor	Male	73	30.4	60.8
	Female	47	19.6	100.0
	Total	120	50.0	

Table 1 shows the frequency, percentage and cumulative percentage of gender of senior secondary II students that received the therapy. The table shows that frequency of male senior secondary II students that received trait-factor therapy is 73 constituting 30.4 percent with cumulative percentage of 60.8. The table further shows that frequency of female senior secondary II students that received trait-factor therapy is 47 constituting 19.6 percent with cumulative percentage of 100.0. The total frequency is 120 constituting 50 percent of the sample for the study received trait-factor therapy.

Table 2: Frequency and Percentage of Reality Therapy Used on Senior Secondary II Students

Therapy	Frequency	Per cent	Cumulative Percent
Trait-Factor Therapy	120	50.0	50.0
Total	120	100.0	

Table 2 shows the frequency, percentage and cumulative percentage of therapies used on senior secondary II students. The table shows that frequency of Trait-Factor Therapy is 120 constituting 50.0 percent with cumulative percentage of 50.0.

Research Question One

What is the effect of trait-factor therapy on vocational choices of Senior Secondary Two (SS 2) students in Six Education Zones, Taraba State?

Table 3: Mean Effect of Trait-Factor Therapy on Vocational Choices of Senior Secondary Two (SS 2) Students in Six Education Zones, Taraba State

TFT TFT		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pre vocational choice in	2.52	120	.59	.05
	Post vocational choice in	2.95	120	.66	.06
	Mean difference	0.43			

Table 3 shows the mean effect of trait-factor therapy on vocational choices of 120 Senior Secondary Two (SS 2) students in Six Education Zones, Taraba State. The table shows that the mean vocational choice before trait-factor therapy is 2.52 with a standard deviation of 0.59. The table further shows that the mean effect of trait-factor therapy on students' vocational choices after treatment is 2.95 with a standard deviation of 0.66. The mean difference in the effect of trait-factor therapy on vocational choices of Senior Secondary Two (SS 2) students in Six Education Zones, Taraba State is 0.43.

Research Question Two

What is the effect of trait-factor therapy on vocational preferences of Senior Secondary Two (SS 2) students in Six Education Zones, Taraba State?

Table 4: Mean Effect of Trait-Factor Therapy on Vocational Preferences of Senior Secondary Two (SS 2) Students in Six Education Zones, Taraba State

preference in TFT	preference in TFT	Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pre vocational	3.08	120	.74	.06
	Post vocational	3.76	120	.70	.06
	Mean gain	0.68			

Table 4 shows the mean effect of trait-factor therapy on vocational preferences of 120 Senior Secondary Two (SS 2) students in Six Education Zones, Taraba State. The table shows that the mean vocational preference before trait-factor therapy is 3.08 with a standard deviation of 0.74. The table further shows that the mean effect of trait-factor therapy on students' vocational preference after treatment is 3.76 with standard deviation of 0.70. The mean difference in the effect of trait-factor therapy on vocational preference of Senior Secondary Two (SS 2) students in Six Education Zones, Taraba State is 0.68.

Research Question Three

What is difference in the effect of trait-factor therapy on vocational choices of male and female Senior Secondary Two (SS 2) students in Six Education Zones, Taraba State?

Table 5: Mean Vocational Choices of Male and Female Students in Six Education Zones, Taraba State due to Trait-Factor Therapy

Gender		PreVC	PostVC	Mean gain
Male	Mean	2.44	3.00	0.56
	N	73	73	
	Std. Deviation	0.69	0.64	
Female	Mean	2.63	2.88	0.25
	N	47	47	
	Std. Deviation	0.56	0.67	
Mean difference				0.21

Table 5 shows the difference in the effect of trait-factor therapy on vocational choices of male and female Senior Secondary Two (SS 2) students in Six Education Zones, Taraba State. The table shows that 73 male students and 47 female students received trait-factor therapy in senior secondary schools in Taraba State, Nigeria. The table shows that the mean vocational choice of male students is 2.44 with a standard deviation of 0.69 before trait-factor therapy. The mean effect of trait-factor therapy on vocational choice of male students in senior secondary school in Taraba State, Nigeria is 3.00 with a standard deviation of 0.56. The table further shows that the mean vocational choice of female students is 2.63 with a standard deviation of 0.56 before trait-factor therapy. The mean effect of trait-factor therapy on the vocational choice of female students in senior secondary school in Taraba State, Nigeria is 2.88 with a standard deviation of 0.67. The table shows a mean gain of 0.56 for male and 0.25 for female students. The difference in the effect of trait-factor therapy on vocational choices of male and female Senior Secondary Two (SS 2) students in Six Education Zones, Taraba State is 0.21 in favour of male students that received trait-factor therapy. The summary of the pretest, posttest, and mean gain in vocational choice of male and female students in Six Education Zones, Taraba State, Nigeria that received trait-factor therapy is shown in Figure 1.

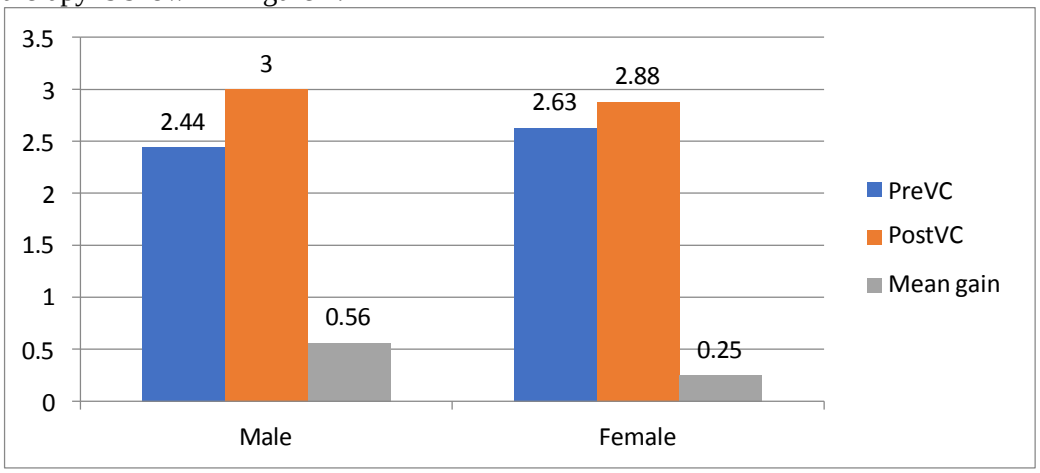


Figure 1: Pretest, Posttest, and Mean Gain in Vocational Choices of Male and Female Students in Six Education Zones, Taraba State due to Trait-Factor Therapy

Research Question Four

What is a difference in the effect of trait-factor therapy on vocational preferences of male and female Senior Secondary Two (SS 2) students in Six Education Zones, Taraba State?

Table 6: Mean Vocational Preferences of Male and Female Students in Six Education Zones, Taraba State due to Trait-Factor Therapy

Gender			PreVP	PostVP	Mean gain
Male	N	Mean	2.89	3.81	0.92
			73	73	
		Std. Deviation	0.74	0.75	
Female	N	Mean	3.37	3.68	0.31
			47	47	
		Std. Deviation	0.66	0.62	
Mean difference					0.61

Table 6 presents the differential effects of trait-factor therapy on vocational preferences of male and female Senior Secondary Two (SS 2) students in Taraba State's Six Education Zones. The results show that 73 male students and 47 female students received trait-factor therapy in senior secondary schools. For male students, the pre-test mean vocational preference score was 2.89 (SD=0.74), increasing to 3.81 (SD=0.75) post-test, with a mean gain of 0.92. In contrast, female students had a pre-test mean score of 3.37 (SD=0.66), rising to 3.68 (SD=0.62) post-test, with a mean gain of 0.31. Notably, the results indicate a significant difference in the effect of trait-factor therapy on vocational preferences, favoring male students by 0.61.

Figure 2 provides a visual representation of the pre-test, post-test, and mean gain scores for both groups.

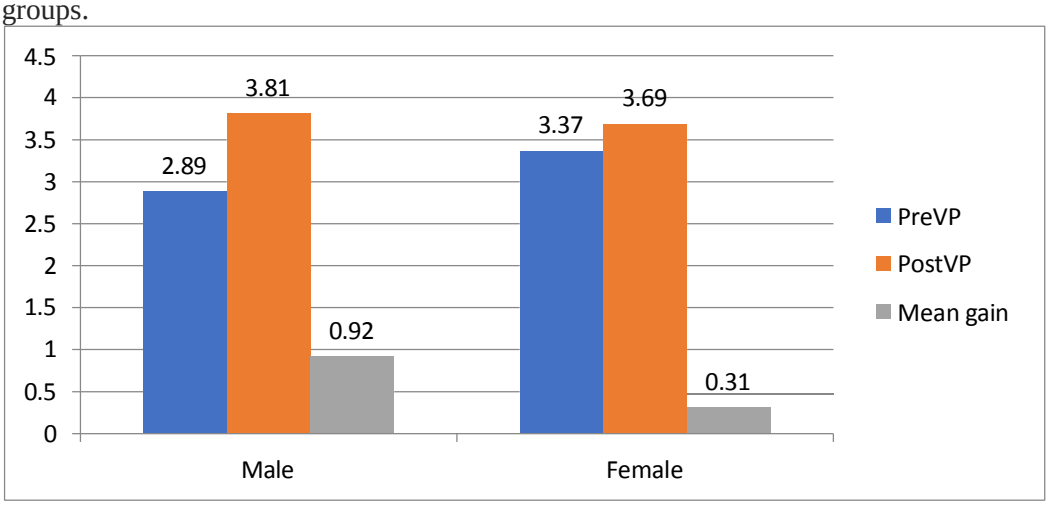


Figure 2: Pretest, Posttest, and Mean Gain in Vocational Preferences of Male and Female Students in Six Education Zones, Taraba State due to trait-factor therapy

Hypothesis One

There is no significant effect of trait-factor therapy on vocational choices of Senior Secondary Two (SS 2) students in Six Education Zones, Taraba State.

Table 7: Paired t-test of the Effect of Trait-Factor Therapy on Vocational Choices of Senior Secondary Two (SS 2) Students in Six Education Zones, Taraba State choice in TFT choice in TFT

Vocational choice in TFT	Mean	N	Std. Deviation	t	df	Sig
Pre vocational	2.52	120	.59	-4.716	119	.000
Post vocational	2.95	120	.66			

Table 7 reveals a gain in MOPSSSSS score from pretest (M = 2.52, SD = 0.59) to posttest (M = 2.95, SD = 0.66). The mean increase in MOPSSSSS score was 0.43; t(119) = 4.716; p = 0.000 < 0.05. This implies that there is significant effect of trait-factor therapy on vocational choices of Senior Secondary Two (SS 2) students in Six Education Zones, Taraba State. Thus, there is significant effect of trait-factor therapy on vocational choices of Senior Secondary Two (SS 2) students in Six Education Zones, Taraba State. Thus, the null hypothesis is rejected.

Hypothesis Two

There is no significant effect of trait-factor therapy on vocational preferences of Senior Secondary Two (SS 2) students in Six Education Zones, Taraba State.

Table 8: Paired t-test of the Effect of Trait-Factor Therapy on Vocational Preferences of Senior Secondary Two (SS 2) Students in Six Education Zones, Taraba State

Vocational preference	Mean	N	Std. Deviation	t	df	Sig
Pre vocational preference in TFT	3.08	120	.74	-6.376	119	.000
Post vocational preference in TFT	3.76	120	.70			

Table 8 reveals a gain in MOPSSSSS score from pretest (M = 3.08, SD = 0.74) to posttest (M = 3.76, SD = 0.70). The mean increase in MOPSSSSS score was 0.68; t(119) = 6.376; p = 0.000 < 0.05. This implies that there is significant effect of trait-factor therapy on vocational preferences of Senior Secondary Two (SS 2) students in Six Education Zones, Taraba State. Thus, there is significant effect of trait-factor therapy on vocational preferences of Senior Secondary Two (SS 2) students in Six Education Zones, Taraba State. Thus, the null hypothesis is rejected.

Hypothesis Three

There is no significant difference in the effect of trait-factor therapy on the vocational choices of male and female students.

Table 9: ANCOVA of Vocational Choices of Male and Female Students due to Trait-Factor Therapy

Dependent Variable: Post vocational choice in TFT

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	4.745[a]	2	2.373	5.892	.004	.092
Intercept	85.424	1	85.424	212.142	.000	.645
Pre-vocation	4.333	1	4.333	10.760	.001	.084
Gender	**.102**	**1**	**.102**	**.252**	**.616**	**.002**
Error	47.113	117	.403			
Total	1100.587	120				
Corrected Total	51.858	119				

a. R Squared = .092 (Adjusted R Squared = .076)

Table 9 shows that F (1,117) = 0.252; p = 0.616 > 0.05. Thus, the null hypothesis is not rejected. This implies that there is no significant difference in the effect of trait-factor therapy on vocational choices of male and female Senior Secondary Two (SS 2) students in Six Education Zones, Taraba State. Therefore, there is no significant difference in the effect of trait-factor therapy on vocational choices of male and female Senior Secondary Two (SS 2) students in Six Education Zones, Taraba

State. The eta square of 0.002 shows that only 0.2 percent of vocational choices is accounted for by gender of students in trait- factor therapy class.

Hypothesis Four

There is no significant difference in the effect of trait-factor therapy on the vocational preferences of male and female students.

Table 10: ANCOVA of Vocational Preferences of Male and Female Students due to Trait Factor Therapy

Dependent Variable: Post vocational preference in TFT

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	4.879[a]	2	2.439	5.189	.007	.081
Intercept	121.944	1	121.944	259.410	.000	.689
Pre-preference	4.365	1	4.365	9.285	.003	.074
Gender	**.001**	**1**	**.001**	**.002**	**.964**	**.000**
Error	55.000	117	.470			
Total	1758.948	120				
Corrected Total	59.878	119				

a. R Squared = .081 (Adjusted R Squared = .066)

Table 10 shows that F (1,117) = 0.002; p = 0.964 > 0.05. Thus, the null hypothesis is not rejected. This implies that there is no significant difference in the effect of trait-factor therapy on vocational preferences of male and female Senior Secondary Two (SS 2) students in Six Education Zones, Taraba State. Therefore, there is no significant difference in the effect of trait-factor therapy on vocational preferences of male and female Senior Secondary Two (SS 2) students in Six Education Zones, Taraba State.

Discussions

Finding on the effect of trait-factor therapy on vocational choices of Senior Secondary Two (SS 2) students in Six Education Zones, Taraba State revealed a mean gain of 0.43. There was significant effect of trait-factor therapy on vocational choices of Senior Secondary Two (SS 2) students in Six Education Zones, Taraba State. This implies that trait-factor therapy had significant effect on vocational choices of Senior Secondary Two (SS 2) students in Six Education Zones, Taraba State. The finding agrees with Widarto (2017) that there is a significant and positive correlation between career insights and career choices. The finding agrees with Modupe, Ashupi, Oluwole, Odusanya and Alakijah (2018) that there was a desire for eventual specialization to some of the fields of medicine and it was evident at the early stages of the training programme. The finding agrees with Shazia, Mohammed, Syed and Hamza (2019) that parental perception plays dynamic role in children's education with respect to academic performance, vocational choice and eventually influence behaviour of their children towards career choices. The use of trait-factor therapy in the present study makes the counsellors to be optimistic about the students' vocational choice and believe that students could make the right choice if he learns how to use his abilities judiciously. The use of trait-factor therapy takes cognizance of the fact that a student is not capable of developing autonomously, hence the need for assistance from others to achieve full potentiality. This assistance lies largely in the objective identification of student's traits through the use of relevant test batteries and encouraging him to take decisions that are congruent with his traits. This may be responsible for the significant effect of trait-factor therapy on vocational choices of Senior Secondary Two (SS 2) students in Six Education Zones, Taraba State found in the present study.

A finding on the effect of trait-factor therapy on vocational preference of Senior Secondary Two (SS 2) students in Six Education Zones, Taraba State revealed a mean gain of 0.68. There was significant effect of trait-factor therapy on vocational preferences of Senior Secondary Two (SS 2) students in Six Education Zones, Taraba State. This implies that trait-factor therapy had significant effect on vocational preference of Senior Secondary Two (SS 2) students in Six Education Zones, Taraba State. The finding agrees with Nwokocha (2014) that a successful counselling procedure towards career preferences of both the day and boarding students can only be realized when professional counsellors are employed and retrained. The finding agrees with Olamide and Olanwaiye (2013) that, parents, peers, teachers, counsellors play a vital role in career preferences of students in both boarding and day system. The finding agrees with Mehdi and Leili (2014) that there was significant difference between the mean scores of metacognition and hope before and after the intervention of experimental group. The finding agrees with Ashipa, Akinyinka and Alakija (2017) that students' choice of medical school was informed by their preference for the religious and moral discipline of the institution and the ability of their sponsors to afford a private medical school. The finding agrees with Al-Bahrani, Allawati, Shindi and Bakkar (2020) that there are significant effects of parents' educational level and grade point average on adolescents' career aspiration. The use of trait-factor therapy enabled the therapist to see that every individual is essentially an organized and unique configuration of capabilities, potentialities and weaknesses which are relatively stable after adolescence. Objective measurement devices can thus be used to identify these characteristics. Since personality and interest patterns correlate with certain work behavior, it is possible to identify an individual's ability components and identify the ability requirements of occupations. Thus identification of characteristics of vocationally well-adjusted and successful workers can be useful information for those seeking placement on similar vocations. This may be responsible for the significant effect of trait-factor therapy on vocational preferences of Senior Secondary Two (SS 2) students in Six Education Zones, Taraba State found in the present study.

Finding on gender difference in the effect of trait-factor therapy on vocational choices of male and female Senior Secondary Two (SS 2) students in Six Education Zones, Taraba State revealed a mean difference of 0.21 in favour of male students that received trait- factor therapy. There was no significant difference in the effect of trait-factor therapy on vocational choices of male and female Senior Secondary Two (SS 2) students in Six Education Zones, Taraba State. This implies that the use of trait-factor therapy is gender friendly with respect to vocational choices of Senior Secondary Two (SS 2) students in Six Education Zones, Taraba State. However, the finding disagrees with Shumba and Naong (2014) that the family, the ability of the learners to identify their preferred career choices and the role of teachers were significant factors that influenced the career choices of female students the lower grades in Uganda. The finding disagrees with Archer, Jonathan, David, Justin and Bully (2014) that the gender of the students, participation levels of both the teachers and the students, parental attitudes and their level of education as some of the vital factors that influence the vocational choices of senior secondary school students before taking their final decision as to which of the careers to be chosen. Gender stereotyping permeates senior secondary schools in Taraba State when trait-factor therapy was used on vocational choices of male and female students. The present study found no significant difference in the effect of trait-factor therapy on vocational choices of male and female Senior Secondary Two (SS 2) students in Six Education Zones, Taraba State, Nigeria. This means that the use of trait-factor therapy is gender friendly concerning vocational choices of male and female students in Six Education Zones, Taraba State. This is because the therapist ensured that the determination of students' potentials and weaknesses preceded a kind of placement, be it in a school programme or work-setting.

Each individual possesses the desire to identify cognitively his abilities. He should thus be helped to use knowledge of his abilities to order and satisfy vocational aspirations finding the gender differences in the effect of trait-factor therapy on vocational preferences of male and female Senior

Secondary Two (SS 2) students in Six Education Zones, Taraba State revealed a mean difference of 0.61 in favour of male students that received trait-factor therapy. There was no significant difference in the effect of trait-factor therapy on vocational preferences of male and female Senior Secondary Two (SS 2) students in Six Education Zones, Taraba State. This means that the use of trait-factor therapy is gender friendly concerning vocational preferences of Senior Secondary Two (SS 2) students in Six Education Zones, Taraba State. However, the finding disagrees with Archer, Jonathan, David, Justin and Bully (2014) that the gender of the students, participation levels of both the teachers and the students, parental attitudes and their level of education as some of the vital factors that influence the vocational preferences of senior secondary school students before taking their final decision as to which of the careers to be chosen. Gender difference exists in senior secondary schools in Taraba State when trait-factor therapy was used on vocational preferences of male and female students. The present study however found no significant difference in the effect of trait-factor therapy on vocational preferences of male and female Senior Secondary Two (SS 2) students in Six Education Zones, Taraba State, Nigeria. This means that the use of trait-factor therapy is gender friendly with respect to vocational preferences of Senior Secondary Two (SS 2) students in Six Education Zones, Taraba State. This is because the objective determination of people's traits is possible through the use of appropriate test batteries. The excellence in human vocational pursuits is attained via knowledge of people's personality assets and weaknesses guides' choice of activities they engage in. The individual often lacks the resources to objectively determine his traits, and counselling should mainly preoccupy itself with the task of assisting people to determine their traits and use the knowledge gained therein as guides for the conduct of their lives irrespective of gender.

Summary

Based on the data collected and analyzed, the following findings were made:

i. The mean difference in the effect of trait-factor therapy on vocational choices of Senior Secondary Two (SS 2) students in Six Education Zones, Taraba State is

0.43. There was significant effect of trait-factor therapy on vocational choices of Senior Secondary Two (SS 2) students in Six Education Zones, Taraba State.

ii. The mean difference in the effect of trait-factor therapy on the vocational preference of Senior Secondary Two (SS 2) students in Six Education Zones, Taraba State is

0.68. There was a significant effect of trait-factor therapy on vocational preferences of Senior Secondary Two (SS 2) students in Six Education Zones, Taraba State.

iii. The mean difference in the effect of trait-factor therapy on vocational choices of male and female Senior Secondary Two (SS 2) students in Six Education Zones, Taraba State is 0.21. in favour of male students who received trait-factor therapy. There was no significant difference in the effect of trait-factor therapy on vocational choices of male and female Senior Secondary two (SS 2) students in six education zones in Taraba State.

iv. The mean difference in the effect of trait-factor therapy on vocational preferences of male and female senior secondary two (ss 2) students in six education zones, Taraba state is 0.61 in favour of male students that received trait-factor therapy. There was no significant difference in the effect of trait-factor therapy on vocational preferences of male and female senior secondary two (ss 2) students in six education zones, in Taraba State.

Conclusion

It is evident from this study that the use of trait-factor therapy has a positive effect on students' vocational choices and preferences, hence it makes the counsellors optimistic about the students' vocational choices and believe that students could make the right choice if they learn how to use their abilities judiciously help the therapist to spend less time on what he or she cannot do directly such as changing their feelings and physiology. Gender stereotyping permeates on vocational choices of male and female students.

Recommendations

The implication of this study and the associated recommendations as it borders on the vocational choices of secondary school students are as follows:

2. Guidance and counselling officers in secondary schools should be trained and encouraged in the use of trait-factor counselling therapy.
3. The use of trait-factor therapy makes the counselling to be optimistic about the students' vocational choices and the utmost belief of the students could serve as an opportunity for the students to make the right choices for their career prospects.
4. Gender stereotyping permeates on vocational choices of male and female students.

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IMPACT OF VIRTUAL LEARNING ON STUDENT ENGAGEMENT AND LEARNING OUTCOMES IN STEM EDUCATION AT TERTIARY INSTITUTIONS: A STUDY OF KWARA STATE UNIVERSITY

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Abstract
With the rapid advancement of technology, virtual learning has become increasingly prevalent in tertiary education, particularly in STEM (Science, Technology, Engineering, and Mathematics) disciplines. This study examines the impact of virtual learning on student engagement and learning outcomes, using Kwara State University as a case study. A quantitative approach was employed, gathering data through web-based surveys from students enrolled in STEM courses. The study investigates the relationship between virtual learning activities, student engagement, and learning outcomes. Statistical methods, including descriptive statistics and linear regression, were used to analyze the data. Findings reveal a positive correlation between virtual learning activities and student engagement, though no significant impact was observed on learning outcomes. The study concludes that while virtual learning can enhance engagement, learning outcomes may be influenced more by factors such as teaching methods, instructional quality, and student motivation.

Keywords: Virtual learning, STEM education, Student engagement, Learning outcome, Tertiary education

1.0 Introduction

The effect of COVID-19 necessitates social distancing across the global space. This challenge underscored the need to explore alternative methods for maintaining human contact, particularly in professional settings. Rapid technological advancements in the post-pandemic era have emerged as a key solution to mitigate the effects of social distancing and the barriers to human interaction it created. Consequently, exploring and utilising virtual spaces to facilitate human contact and interactions become essential (Sato *et al.*, 2020). This shift has prompted an evaluation of digital environments for supporting social interactions, professional collaborations, and educational activities (Sato *et al.*, 2023; Sigal and Ron, 2023). During the pandemic, the accelerated adoption of technology across various sectors was crucial for maintaining physical distance and controlling the virus's spread. This technological adoption fundamentally changed how people interact, work, and learn (Alghamdi and Alghamdi, 2022; Jose and Carmen, 2021). Virtual spaces become vital in bridging the gap created by physical separation, offering versatile and dynamic environments for engagement without geographical constraints.

A significant impact of technological evolution is the enhancement of social contact through virtual means. Platforms and tools like video conferencing applications, virtual reality environments, and social media have become integral in maintaining human connections (Bhardwaj, Bhardwaj, and Chaudhary, 2023). The post-pandemic era has seen a surge in demand for virtual learning and technological innovations in teleconferencing (Stoyanov *et al.*, 2022). This led to the emergence of applications like Zoom, Moodle, Microsoft Teams, Google Meet, and others. These technologies enhance the usability of virtual means to transmit information and support the teaching-learning process amidst social distancing constraints. They allow real-time interactions, meetings, and social activities despite physical distance. The education sector, in particular, has been profoundly affected by this shift to virtual spaces (Ascione, 2023; Alshehri, 2024; Vergara, Fernández-Arias, Extremera, Dávila, and Rubio, 2022; Obla and Ukabi, 2021). Traditional classrooms have transformed into hybrid or fully online models, leveraging technology to continue the teaching-learning process. Virtual classrooms, online courses, and

digital collaboration tools have become essential, offering new opportunities for interactive and personalized learning.

Studies have examined the correlation between virtual learning and various factors in higher education. Vergara *et al.* (2022) explored how the education sector has benefited from the ICT-driven revolution, which has introduced new tools and teaching methods that were not available a few decades ago. According to them, the technological shift led to the development of virtual laboratories (VLs) using virtual reality (VR), increasingly utilized to enhance the teaching and learning process across diverse training activities. Their study, involving 420 engineering students from Spanish and Portuguese universities, assessed different parameters in various VLs designed by the authors. The findings revealed that VR-based VLs are widely accepted and sought after by students, who also consider real laboratories (RLs) essential for face-to-face instruction.

Similarly, Obla and Ukabi (2021) found that learning in virtual spaces plays a significant role in developing pro-technology and pro-internet attitudes among students. Their research focused on sustainable strategies for achieving inclusive and tension-free learning during the COVID-19 pandemic. They highlighted that digital materials make the pedagogical approach more enjoyable, engaging, innovative, and inclusive. Their study examined whether virtual spaces for instructional delivery offer sustainable and inclusive methods for educating learners during and after the pandemic. By employing a theory-based conceptual approach and an inside-outside perspective, they addressed the Nigerian context, where virtual learning initially faced skepticism due to operational and policy challenges. They identified positive potential in virtual spaces and challenged earlier studies that failed to address uncertainty variables.

In contrast, Alshehri (2024) investigated the impact of digital education on modern educational institutions through existing literature and materials from public, educational, and expert sources. He argued that digital learning allows students to use a broader range of materials, thereby enhancing communication and study opportunities beyond the limitations of traditional classroom resources. Alshehri emphasised that while a positive attitude and motivation can improve academic performance and engagement, digital education also presents various pros and cons in the teaching environment and affects different beneficiaries.

The above perspectives align with Constructivist Learning Theory, as articulated by Jean Piaget (1896-1980) and Lev Vygotsky (1896 – 1934). Jean Piaget's Cognitive Development Theory emphasises how learners actively construct their understanding and knowledge through experience and reflection (Cherry, 2023). This concept is particularly relevant to virtual learning environments, where students interact with digital tools and resources. Such interactions facilitate active learning and cognitive development by enabling students to engage in interactive simulations and problem-solving tasks, thus helping them build and organise their knowledge (Darling-Hammond, Flook, Cook-Harvey, Barron, and Osher, 2019). This approach can significantly influence both student engagement and learning outcomes in STEM (Science, Technology, Engineering, and Mathematics) education.

Lev Vygotsky's Social Constructivism further complements this view by focusing on the social aspects of learning and the role of interaction with more knowledgeable others, such as peers and instructors, in cognitive development (Mcleod, 2024). Vygotsky's concept of the "Zone of Proximal Development" (ZPD) underscores that learning occurs through guided interaction and support. This theory applies to virtual learning environments that often feature collaborative tools and online forums, allowing students to engage in meaningful interactions with peers and instructors (Picciano, 2017). Thus, Vygotsky's theory highlights how social interactions and collaborative learning in virtual settings can enhance both engagement and learning outcomes.

Despite these advancements, virtual learning presents challenges such as ensuring equitable access to technology, maintaining student engagement, and addressing the digital divide. These issues impact student engagement and learning outcomes in tertiary institutions, including Kwara State University (KWASU) in Malete, Kwara State, Nigeria. Established in 2009, KWASU offers a range of programs from STEM to non-STEM disciplines, reflecting the broader shift toward integrating virtual learning in higher education. With the rapid advancement of technology, virtual learning especially the introduction Learning Management System (SMS) become increasingly prevalent in Kwasu, particularly in STEM disciplines. Educators have adapted their strategies to effectively use virtual tools and create engaging online learning environments. Given the existing studies on the nexus of the technological driven virtual learning environment and classroom engagement (Alshehri, 2024, Obla and Ukabi, 2021, Bhardwaj, Bhardwaj, and Chaudhary, 2023, Stoyanov *et al.,* 2022), only few literatures examine the impact of virtual learning on student engagement and learning outcomes in STEM education in Nigeria, especially in KWASU. Hence, this study examines the impact of virtual learning on student engagement and learning outcomes in STEM education, focusing on Kwara State University.

2.0 Purpose of the Research

This study aims to assess the impact of virtual learning on student engagement and learning outcomes in STEM education, focusing on Kwara State University as a case study. Hence the study will provide answers to the following questions:

1. How does virtual learning impact students' engagement in the STEM education process at Kwara State University?
2. How does virtual learning influence learning outcomes in STEM education at Kwara State University?

3.0 Hypothesis

$H0_1$: There is no significant relationship between virtual learning activities and students' engagement in STEM education in KWASU

$H0_2$: There is no significant relationship between virtual learning activities and learning outcomes in STEM education in KWASU

4.0 Methods and Materials

The research employed a quantitative approach using web surveys and a descriptive method to gather comprehensive data from both primary and secondary sources. Quantitative data was collected through surveys administered to students enrolled in STEM courses at Kwara State University, focusing on their virtual learning engagement and learning outcomes in virtual learning environments. The entire population of the study comprised 150 students in the STEM faculties at the university. Eighty students across the academic levels in the university were randomly selected, representing 53.3% of the entire population. Consequently, 80 questionnaires were sent to the respondents; only 63 (78.75%) of these were returned, and 60 (75%) were valid for analysis. Key variables examined included virtual learning activities, students' engagement levels, and learning outcomes in STEM courses in virtual learning environments. Descriptive analysis was employed for demographic data, while linear regression analysis was conducted to find the relationship between virtual learning activities and students' engagement in virtual learning and learning outcomes in STEM education at KWASU. The demographic details of the respondents are presented in Table 1.

4.1 Table 1: Demographic Data

Variables	Items	Frequency	Percentage
Gender	Male	31	51.7
	Female	29	48.3
Age	Below 18	11	18.3
	18-25	45	75
	26-30	3	5
	Above 30	1	1.7
Academic Year	100	19	31.7
	200	30	50
	300	4	6.7
	400	6	10
	400 and above	1	1.7
Virtual Platforms being used	Google Meet	17	28.3
	Moodle	5	8.3
	Zoom	20	33.3
	Others	18	30

Source: Author's Fieldwork, 2024

The above reflects the demographic details of the respondents. It shows that 51.7% of the respondents are male, while 48.3% are female.

Additionally, 18.3% of them are below the age of 18, 75% are between the ages of 18 and 25, 5% are between 26 and 30, and the remaining 1.7% are above 30 years old.

Similarly, 31.7% are in the 100 level, 50% are in the 200 level, 6.7% are in the 300 level, 10% are in the 400 level, and 1.7% are in classes above the 400 level.

Regarding the virtual platforms being used, 28.3% of the respondents used Google Meet, 8.3% used Moodle, 33.3% used Zoom, and the remaining 30% used other platforms.

5.0 Findings

5.1 Test of Hypotheses/Results

This section presents the analysis of the hypotheses set for the study. The hypotheses were tested using linear regression model.

$H0_1$: There is no significant relationship between virtual learning activities and students' engagement in STEM education in KWASU

5.1.1 Table 2: Regression Analysis of the relationship between Students' Virtual Engagement and Virtual Learning Activities

Variables	Beta (β)	T	Sig.	R^2	Adj. R^2	F	P
(Constant)	3.900	10.618	.000				
Students Virtual Engagement	-.407	.470	.000	.204	.190	14.837	.000[b]
Dep. Variable: Virtual Learning Activities Ind. Variable: Students' Virtual Engagement DF (F-Statistics) =59							

Source: Author's Fieldwork, 2024 y = a + bx

Virtual Learning Activities = a + b (Students' Virtual Engagement)
Virtual Learning Activities = 3.900 + (-0.407) (Students' Virtual Engagement)
The above table shows that there is a significant relationship between Virtual Learning Activities and Students' Virtual Engagement. The results indicate a significant relationship between Virtual Learning Activities and Virtual Learning Activities with $p < 0.001$, $R^2 = 0.204$, $F = 14.837$. The results further show that Students' Virtual Engagement accounts for about 20.4% of the Virtual Learning Activities. The F-statistic demonstrates the suitability of the regression model. Since sig value (0.000) < p-value (0.05), hypothesis one is rejected, concluding that there is a significant relationship between Virtual Learning Activities and Students' Virtual Engagement.
$H0_2$: There is no significant relationship between virtual learning activities and learning outcomes in STEM education in KWASU

5.1.2 Regression Analysis of the Relationship Between Learning Outcome and Virtual Learning Activities

Variables	Beta (β)	T	Sig.	R^2	Adj. R^2	F	P
(Constant)	2.915	4.299	.000				
Learning Outcome	-.061	-.547	.589	.005	-.012	0.299	.586[b]
Dep. Variable: Virtual Learning Activities Ind. Variable: Learning Outcome DF (F-Statistics) =59							

Source: Author's Fieldwork, 2024 y = a + bx
Virtual Learning Activities = a + b (Learning Outcome)
Virtual Learning Activities = 2.915+ (-.061) (Learning Outcome)
The table above shows that there is no significant relationship between virtual learning activities and learning outcomes. With $p < 0.001$, $R^2 = 0.005$, and $F = 0.299$, the results indicate that virtual learning activities account for about 0.5% of the learning outcomes. The F-statistic shows a fair suitability of the regression model. Since sig value (0.589) > p-value (0.05), hypothesis two is accepted, concluding that there is no significant relationship between virtual learning activities

and learning outcomes.

6.0 Discussion

Hypothesis one reveals a significant relationship between virtual learning activities and students' engagement in STEM education at KWASU. The reason for this could be due to its flexibility and convenience compared to face-to-face classroom interactions. Virtual learning allows students to access course materials and participate in classes from any location, as well as learn at their own pace. This conclusion aligns with the study conducted by Vergara et al. (2022), which found that VR-based VLs are widely accepted and demanded by students, who also consider real laboratories (RLs) necessary for face-to-face teaching. Also, Obla and Ukabi (2021) found that learning in a virtual space for pro-technology and pro-Internet generation contributes significantly to developing their inherent domains.

The second hypothesis indicates no significant relationship between virtual learning activities and learning outcomes. This lack of correlation could be attributed to other distracting intervening variables present in the virtual learning environment. According to Alshehri (2024), digital learning allows students to communicate and study using a broader range of materials. He suggests that students' academic performance and engagement in active learning improve with a positive attitude and motivation. However, in the absence of such positive factors, learning outcomes may suffer due to the various pros and cons of the teaching environment and its impact on different beneficiaries (Usman and Madudili, 2019).

Therefore, while the study confirms the relationship between virtual learning activities and students' engagement in STEM education at KWASU, given its flexibility and convenience compared to face-to-face classroom interactions, as noted earlier, there is no positive correlation between virtual learning activities and learning outcomes.

7.0 Conclusion

The study aimed to assess the relationship between virtual learning, student engagement, and learning outcomes in STEM education at tertiary institutions with a focus on KWASU. The post-pandemic era has highlighted the need to explore virtual spaces due to technological advancements, leading to the use of teleconferencing tools for knowledge transmission. The study employs Constructivist Learning Theory, as articulated by Jean Piaget and Lev Vygotsky, to explain the influence of the learning environment on student engagement and learning outcomes. Using quantitative methods to gather data, the study found a positive correlation between virtual learning activities and student engagement in STEM education. However, it also revealed that virtual learning activities do not necessarily correlate with student learning outcomes at KWASU. Consequently, the study concludes that learning outcomes are influenced by other intervening variables.

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ASSESSING PRIMARY SCHOOL TEACHERS' FAMILIARITY AND READINESS TO LEVERAGE AI TOOLS FOR IMPROVED TEACHING IN GUSAU, ZAMFARA.

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Abstract
This study investigates primary school teachers' familiarity and readiness to integrate artificial intelligence (AI) tools into their teaching practices in Gusau, Zamfara. A mixed-methods approach was employed, utilizing surveys and interviews to gather data from a sample of primary school teachers. The survey assessed teachers' confidence, skills, and perceptions regarding AI tools, while interviews provided deeper insights into their experiences and challenges. Findings indicate that while teachers moderately agree on their confidence and skills related to AI tools, there is a notable gap in their readiness to implement these technologies effectively. The mean scores for statements regarding their ability to select and experiment with AI applications were below the threshold for confidence. The results highlight the necessity for continuous professional development programs focused on AI literacy to enhance teachers' capabilities. Recommendations include targeted training sessions and resources to support teachers in integrating AI into their pedagogical practices, ultimately aiming to improve student engagement and learning outcomes. Addressing the identified gaps in AI readiness among teachers is essential for the successful integration of AI in primary education.

Keywords: Artificial Intelligence; Familiarity; Readiness; Evaluation

Introduction
Instructors play a pivotal role in the instructional process, particularly when introducing new concepts and subjects to learners. As the foundations of educational institutions evolve, there is an increasing necessity for innovation to bridge the gap between outdated teaching strategies and the dynamic needs of contemporary students. Encouraging a progressive dialogue about the interplay between technology—specifically artificial intelligence (AI)—and education, while considering both the threats and opportunities presented, will foster significant advancements in modern curricula and learning environments (Chen, Zou, Xie, & Cheng, 2021).

Artificial intelligence encompasses the capacity of machines to learn and perform tasks typically associated with human reasoning and interaction with the environment (Russell & Norvig, 2010). AI-powered tools can gather and analyze data from their surroundings, yielding adaptive, context-specific outputs. Various analytical approaches, including machine learning, natural language processing, and deep learning, are commonly employed in AI applications (Zawacki-Richter, Marín, Bond, & Gouverneur, 2019). AI is a central component of the fourth educational revolution, driving technological innovation that transforms economies and societies alike (Hwang, Xie, Wah, & Gašević, 2020).

AI studies intelligent machines capable of acquiring knowledge, communicating, and reasoning.

Although rooted in computer science, Verma (2018) emphasizes that AI primarily aims to create intelligent systems that replicate human functions, such as reasoning and language processing. According to Ocana et al. (2019), AI leverages vast datasets and processing capabilities to emulate various human cognitive abilities, marking a significant turning point in technological advancement. The rise of AI in education imposes new responsibilities on legislators, educators, and researchers to ensure its effective integration into schools, necessitating a thorough analysis of state policies and future demands (Sanusi et al., 2022).

Emerging technologies like AI are transforming the landscape of education and learning (Aruleba, Jere, & Matarirano, 2022). Understanding the factors influencing teachers' adoption of AI-based solutions becomes essential as we navigate the complexities of integrating AI into educational settings. Teachers' confidence in these tools, along with their digital competencies and ethical considerations, significantly shapes the future of education. This study aims to explore current research on the state of AI in education, highlighting the challenges and opportunities it presents, while emphasizing the need to equip teachers with the necessary skills and knowledge for successful AI integration (Sanusi & Oyelere, 2020).

AI is increasingly incorporated into various educational products, including dashboards, automated assessment systems, intelligent tutoring systems, and chatbots, making it one of the most commonly utilized AI technologies in basic education (Chen et al., 2022). Chatbots serve as virtual agents, allowing teachers to initiate conversations with students through voice or text inputs (Luo et al., 2019). These tools can enhance student motivation and provide teachers with insights into student learning progress (Huang, Hew, & Fryer, 2022; Chocarro, Cortiñas, & Marcos-Matás, 2021). Intelligent tutoring systems offer personalized learning experiences by enabling students to access materials tailored to their specific needs (Pai, Kuo, Liao, & Liu, 2021).

By alleviating teachers' workloads, intelligent tutoring systems allow educators to dedicate more time to instruction (Mohamed & Lamia, 2018). AI-enhanced dashboards enable educators to monitor cognitive and emotional engagement, as well as student knowledge acquisition, presenting visualizations that support the coordination and facilitation of learning (Verbert et al., 2013; Pardo et al., 2018). Automated assessment systems autonomously identify and grade student responses, utilizing technologies such as natural language processing and automated voice recognition (Ahn & Lee, 2016).

According to Nazaretsky et al. (2022), teachers' confidence in AI tools closely correlates with their willingness to integrate such technology into their teaching strategies. This confidence encompasses various dimensions, including the reliability, accuracy, and predictability of AI outputs. Teachers who trust in the efficacy and reliability of AI technologies are more inclined to experiment with these tools, viewing them as allies rather than adversaries (Nazaretsky et al., 2022). Familiarity with the fundamental technological capabilities of AI tools is essential for teachers to engage effectively (Seufert et al., 2021). Possessing the technical expertise necessary to utilize AI tools is crucial for the successful implementation of AI in education. Effective integration of technology within classrooms is positively associated with teachers' technological proficiency (Dogan, Dogan, & Celik, 2021), and understanding the pedagogical potential of relevant technology largely hinges on this knowledge (Schmid, Brianza, & Petko, 2020).

Huang et al. (2022) indicate that teachers who are more familiar with chatbots in everyday contexts

are likely to employ them for instructional purposes, such as providing feedback. Moreover, an increased understanding of AI technologies may lead teachers to utilize them for specific educational needs. For instance, teachers adept at using intelligent tutoring systems are more inclined to adopt field-specific intelligent tools. Additionally, teachers can rely on their technological skills to ethically evaluate their choices among various technological tools (Akgun & Greenhow, 2021).
Given this context, a multifaceted approach is essential as the integration of AI into educational environments gains increasing attention. This strategy must address teachers' pedagogical challenges, enhance their digital competencies, and align curriculum development with future demands. Therefore, this study aims to investigate two critical teacher characteristics: familiarity with and readiness to adopt AI tools in the teaching and learning process.

Objectives of the Study

The objectives of this study are to:

1. Evaluate teachers' understanding of artificial intelligence (AI) concepts and applications.
2. Assess their current use of AI tools in teaching.
3. Identify the challenges and barriers to AI adoption.
4. Determine teachers' willingness to integrate AI into their teaching methods.

Hypotheses

The following hypotheses will be tested:

HO1: There is no significant difference between the responses of male and female teachers regarding their familiarity with AI in fostering effective teaching and learning in primary schools.

HO2: There is no significant difference between the responses of male and female teachers concerning their readiness to harness AI tools for fostering effective teaching and learning in primary schools.

HO3: There is no significant difference between teachers' familiarity with AI and their readiness to use AI in promoting effective teaching and learning in primary schools.

Methodology

This study employs a descriptive survey research design, as data were collected through questionnaires administered to participants, focusing on non-manipulated variables. The variables investigated aim to understand teachers' familiarity with and preparedness to utilize artificial intelligence in teaching and learning within primary schools. This method was chosen for its effectiveness in capturing a comprehensive range of perspectives regarding participants' readiness and understanding of AI technology in educational contexts.

To ensure a diversity of experiences and viewpoints, random sampling was utilized to select participants. The study sampled twelve primary schools in the Gusau Local Government Area, each reflecting varying levels of expertise and experience with AI-based teaching methods. A total of sixty primary school teachers participated in the research, with careful consideration given to maintaining gender balance, years of experience, and exposure to technology.

The research instrument was adapted from the Technological Pedagogical Content Knowledge (TPACK) framework developed by Schmidt et al. (2009) and modified to suit the objectives of this study. The collected data were analyzed using descriptive statistics, including mean and percentage

calculations. Additionally, the hypotheses were tested using the t-test at a significance level of 0.05, employing the SPSS statistical package for analysis.

Results and Discussion

Table 1: Socioeconomic Characteristics of the Respondents

Respondent Profile	Frequency	Percentage (%)
Gender:		
Male	30	50
Female	30	50
Total	60	100

The socioeconomic characteristics of the respondents, as presented in Table 1, indicate an equal gender distribution, with 50% male and 50% female participants.

1. Teachers' Familiarity with AI

Table 2 displays the mean scores reflecting teachers' familiarity with artificial intelligence (AI) in promoting effective teaching and learning within primary schools in the Gusau metropolis.

s/n	Items	Mean	STD	Decision
1	I know how to interact with AI	2.638	0.65	Agreed
2	I know how to execute some tasks with AI	2.731	0.72	Agreed
3	I know how to initialize a task for AI	2.402	0.60	Disagreed
4	I have sufficient knowledge to use AI	2.682	0.68	Agreed
5	I understand how AI can be integrated into the teaching and learning process	2.836	0.72	Agreed
6	I know how to use AI-based tools to monitor learners' learning	2.575	0.62	Agreed

Table 2 illustrates the mean scores representing teachers' familiarity with artificial intelligence (AI) and its role in fostering effective teaching and learning in primary schools in the Gusau metropolis. According to the mean scores, respondents demonstrated the highest level of familiarity with integrating AI into the teaching and learning process, scoring 2.836. They also showed a good understanding of performing tasks using AI, with a mean score of 2.731, followed by their general knowledge of utilizing AI at 2.682. Their interactions with AI received a score of 2.638 while initializing tasks with AI garnered a score of 2.402. Finally, their understanding of how to use AI-based tools to monitor learners' progress was reflected in a score of 2.575.

2. Assessment of Current Use of AI Tools in Teaching

Table 3 presents the mean scores regarding teachers' current use of AI tools in teaching and learning within primary schools in the Gusau metropolis.

s/n	Items	Mean	STD	Decision
7	I have received training on using AI tools in the classroom	2.320	0.58	Disagreed
8	I am aware of AI applications that can support personalized learning for learners	2.910	0.75	Agreed
9	I can identify AI-driven educational tools that enhance student engagement	2.694	0.65	Agreed

10	I understand the ethical implications of using AI in education	2.440	0.62	Disagreed
11	I can understand alerting (or notification) from AI-based tools to scaffold learners' learning	2.402	0.62	Disagreed

Table 3 presents the mean scores reflecting teachers' assessments of their current use of AI tools in teaching and learning within primary schools in the Gusau metropolis. The findings indicate a strong agreement (mean score of 2.910) regarding the role of AI technology in supporting individualized learning for students. Additionally, teachers showed awareness of AI tools aimed at enhancing student engagement, with a mean score of 2.694. However, there were notable areas of disagreement concerning the ethical considerations associated with AI use, which received a mean score of 2.440. Teachers also expressed disagreement regarding their training in using AI tools in the classroom, scoring 2.320, as well as their ability to understand alerts or notifications from AI-based tools intended to scaffold learners' learning, which scored 2.402.

3. Identification of Challenges and Barriers to AI Adoption

Table 4 details the mean scores related to identifying the challenges and barriers to the adoption of AI in teaching and learning within primary schools in the Gusau metropolis.

s/n	Items	Mean	STD	Decision
12	I feel confident in explaining the benefits of AI in education to my colleagues	2.528	0.70	Agreed
13	I can understand the pedagogical contribution of AI-based tools to my teaching field.	2.530	0.65	Agreed
14	I can evaluate the usefulness of feedback from AI-based tools for teaching and learning.	2.742	0.52	Agreed
15	I can interpret messages from AI-based tools to give real-time feedback	2.861	0.73	Agreed

Table 4 displays the mean scores related to the identification of challenges and barriers to the adoption of AI in teaching and learning within primary schools in the Gusau metropolis. The data reveal a moderate acceptance regarding teachers' justifications of the advantages of AI to their colleagues, with a mean score of 2.528. Similarly, the statement, "I can understand the pedagogical contributions of AI-based tools to my teaching field," received a mean score of 2.530, indicating a somewhat moderate level of acceptance. In contrast, higher acceptance levels were noted for the statements, "I can evaluate the usefulness of feedback from AI-based tools for teaching and learning," which scored 2.742, and "I can interpret messages from AI-based tools to provide real-time feedback," which received a mean score of 2.861.4. Determining Teachers' Willingness to Integrate AI into Their Teaching Methods

Table 5 presents the mean scores that assess teachers' willingness to integrate AI into their teaching methods in primary schools within the Gusau metropolis.

s/n	Items	Mean	STD	Decision
16	I have the necessary skills to select AI-based tools for learners to apply their knowledge	2.662	0.66	Agreed
17	I am willing to collaborate with colleagues to explore AI applications in our school	2.925	0.74	Agreed
18	I feel confident in experimenting with AI applications to enhance student learning	2.652	0.67	Agreed
19	I am willing to invest time in learning more about AI in education	2.372	0.59	Disagreed
20	I have the knowledge to select AI-based tools to sustain learners' motivation	2.700	0.68	Agreed

The table above illustrates the mean scores determining teachers' willingness to integrate AI into their teaching methods within primary schools in the Gusau metropolis. The respondents moderately agreed with the statements regarding their confidence and skills related to AI tools: "I have the necessary skills to select AI-based tools for learners to apply their knowledge" (mean score: 2.662), "I feel confident in experimenting with AI applications to enhance student learning" (2.652), and "I have the knowledge to select AI-based tools to sustain learners' motivation" (2.700). They expressed a strong willingness to collaborate with colleagues to explore AI applications in their schools (mean score: 2.925). However, there was disagreement with the statement, "I am willing to invest time in learning more about AI in education," which received a lower mean score of 2.372.

Discussion of Findings

The results of this study reveal a balanced demographic of teachers with diverse qualifications, highlighting a range of experiences and perspectives regarding the integration of AI in teaching and learning processes. Overall, teachers demonstrated a moderate familiarity with AI tools, particularly in recognizing applications that support personalized learning and understanding how to integrate AI into their teaching practices. This indicates that teachers are open to exploring and learning about new technologies and possessing foundational knowledge about AI's potential to enhance educational outcomes. This finding aligns with the research conducted by Arvin, Hoseinabady, Bayat, and Zahmatkesh (2023), which noted a growing interest among teachers in leveraging AI to support adaptive learning and provide personalized feedback, acknowledging the significant capacity of these technologies to enrich learners' educational experiences.

Furthermore, the study assessed teachers' willingness to integrate AI into their teaching methods within a typical classroom setting. Many sampled teachers appeared willing to collaborate and utilize AI technology, indicating a proactive attitude toward adopting new tools. They showed readiness to engage in practical activities, such as interpreting AI-generated feedback and incorporating AI tools into their teaching processes. However, there was a reluctance to invest time in further learning, particularly regarding more technical aspects like AI alerts. Nazaretsky et al. (2022) affirm that when teachers believe in the efficacy and reliability of AI technologies, they are more likely to experiment with and adopt these tools, viewing them as allies in the educational process rather than as threats or competitors. Lindner and Berges (2020) found that while teachers with a basic understanding of AI can articulate essential concepts related to it, they struggle with detailed explanations without proper training.

The extensive and intricate nature of AI encompasses various complex topics, including AI and robotics, AI and machine learning, data science, big data analytics, high-performance computing, and cybersecurity. To develop a comprehensive understanding of AI and its related concepts, teachers require suitable professional training. The comparison of familiarity and readiness reveals a significant disconnect; while teachers possess some familiarity with AI concepts, they are not equally prepared to implement these tools effectively. This disparity underscores the need to bridge the gap between knowledge and practical application. To foster effective AI integration, schools must focus on not only enhancing familiarity but also building confidence and capability in using AI tools in everyday teaching practices.

It is crucial to train teachers on the pedagogical affordances of AI-based tools to enhance their understanding of effective integration. Ng, Leung, Chu, and Qiao (2023) emphasize that as education increasingly embraces hybrid or fully online models, teachers' ability to leverage AI tools effectively becomes paramount. This finding also aligns with the work of Ahn and Lee (2016), who highlighted the importance of educational technology courses designed to promote pre-service teachers' ethical assessment and knowledge of educational AI use.

Conclusion

This study thoroughly examined primary school teachers' familiarity and readiness to utilize artificial intelligence (AI) in fostering effective teaching and learning. The findings indicate that the teachers surveyed displayed relatively low levels of familiarity and readiness regarding AI. This research underscores the significance of AI in transforming the educational landscape, presenting unique opportunities for personalized and engaging learning environments, particularly at the elementary school level. It highlights the necessity for a coordinated effort to enhance teachers' skills in artificial intelligence, identifying areas for development to keep pace with technological advancements. While the integration of AI heralds a promising future in education, it also necessitates a comprehensive evaluation of its various impacts.

Recommendations

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

1. **Continuous Professional Development**: Primary school teachers should engage in ongoing professional development programs to deepen their understanding of AI. This will enable them to integrate AI effectively into their teaching practices, thereby enhancing classroom engagement and learning outcomes through the adoption of AI-based applications and innovative pedagogical methods.
2. **Government Support**: The government should develop, implement, and sustain policies that promote the adoption of AI in education. This includes allocating budgets for teacher training, acquiring AI tools, upgrading infrastructure, and establishing nationwide AI literacy programs.
3. **Curriculum Integration**: Curriculum planners should incorporate AI learning into both the curriculum and daily school operations. This includes investing in AI-driven platforms and providing seminars, workshops, and mentorship programs to ensure that teachers become fully familiar with modern teaching processes.

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POST ASUU INDUSTRIAL ACTION AND THE ACADEMIC PERFORMANCE OF UNDERGRADUATE STUDENTS IN A NIGERIAN UNIVERSITY

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Abstract
The education sub-sector in Nigerian universities has witnessed in recent times incessant closure due to industrial actions of the Academic Staff Union of Universities (ASUU). This calls for the assessment of the impact of the recent industrial action of the year 2022 on the academic performance of undergraduate students. This study examined the impacts of ASUU Industrial Action on the Academic Performance of undergraduate students in a Nigerian university. The study adopted a descriptive research design of survey type. The population of the study consisted of all undergraduate students in the Department of Social Sciences Education of the selected university. The target population consisted of 200-level and 300-level Social Studies and Economics Education undergraduates. A sample of 238 was purposively selected. A self-constructed questionnaire on the post-ASUU Industrial Action on Academic Performance was used for data collection. Cronbach Alpha was used to establish the reliability of the Instrument of which the value stands at 0.81. The data collected were analyzed using percentage, mean and t-test statistics at a 0.05 level of significance. The study revealed that post-ASUU industrial action significantly impacted the academic performance of undergraduates positively. The study also found that a significant difference exists in the impact of post-ASUU industrial action on the academic performance of undergraduate students based on CGPA, gender and academic level. Based on the findings, it was recommended that stakeholders in the Universities should continue to encourage undergraduate students to engage in self-directed academic activities such as group learning and research even if there is no university closure.

Keywords: Academic Performance, ASUU, CGPA, Industrial Action, Kwara State, Undergraduate Students

Introduction
The job descriptions of academia all over the world are tripartite and it requires self-dedication from a real academia to display professionalism in discharging these job descriptions of teaching, research and community service. Each of these is further broken down into different parts. For instance, teaching is presented as a common part of the academic job description as it is commonly understood to be the only mandate of university teachers or academic staff of universities, It is interesting to know that teaching alone is further broken into physical and virtual dissemination of information to and engaging undergraduate students; conducting assessment of work done at intervals commonly known as continuous assessment which involves different dimensions ranging from, assignment; individual or group project; test and presentation; conducting examination; marking, recording, and uploading of results; keeping records, project supervision and so on.

The research aspect is an integral job description to be a real academic, this part is attached to the

condition that any academic must fulfil continuously to get promoted at three-year intervals progressively to reach the peak of an academic career. This aspect ushered in the slogan " published or perished" meaning, it is required of a real university lecturer to carry out research and publish the report in reputable journal outlets continuously to enhance stakeholders' capacity to understand, retain and transfer the outcome for greater societal impact and get promoted successively. Any attempt to do otherwise is tantamount to such a lecturer remaining at the same level and status. To get this done successfully, it required considerable time, resources and full intellect. The resource requirement aspect has to do with lecturers spending from their meagre pay to source hard copies and virtual materials to put the research together including the publication expenses and more.

Community service as the name implies is the provision of teaching-learning innovation through seminars, workshops and training programmes within and outside the university, it also includes all the administrative duties associated with academic roles of academics such as student clearance, level advisement, processing of student results, and many designated administrative roles which are combined to ensure successful completion of undergraduate programmes till results are published and obtained. This aspect also includes services rendered outside the university as academics such as capacity building and training programmes for service teachers, and schools, at Basic, Secondary and tertiary levels. Other services rendered to showcase the area of specialization and professionalism of any academics locally, nationally and internationally fall under this category. Interestingly all these tripartite job descriptions are being carried out simultaneously by the university lecturers, which means their job requires 24 hours days and nights, This peculiarity is being lamented now by the members while realizing that the Nigerian government as ASUU employers have no knowledge of their job and the stress attached to the job.

From the foregoing, it is succinct to conclude that, the role of universities in human capital development, research and technological innovation cannot be under-evaluated. Therefore investment in University education becomes a critical component of national development efforts because, nations must continuously depend on knowledge, ideas and skills which are produced through research in the universities. Investment in university education is important as it is expected to contribute to national development in three principal ways. First, society expects universities to produce highly skilled personnel in technology, engineering, management and other professions; secondly, universities have the responsibility of producing their corps of academic personnel, that is, the intellectual resource pool that will, through scientific research generate new knowledge and innovation to solve developmental problems. Thirdly, universities produce teachers, administrators and managers for other levels of human resources development and institutions (Ogbete, 2017).

University worldwide is thereby regarded as the citadel of learning, the fountain of intellectual development and a ground for human capital development. The university must continue to fulfil a major function of knowledge and value provider, to sustain its productive mandate of human capital development. However, the university progresses when it is properly managed and able to deliver its mandate and when it is not properly managed by the stakeholders, it then fails in its function of providing knowledge and value.

University education in Nigeria has thus suffered tremendous setbacks due to the lack of political will of successive Nigerian Governments in funding public universities and fulfilling the pact of periodic welfare upgrade of the Academic Staff Union of Universities (ASUU) that carries out the stressful job description earlier highlighted in this paper. This has resulted in industrial actions by

both the Academic Staff Union of Universities (ASUU) and the non-academic staff in Nigeria over the years. These actions have always subjected the students to pitiable conditions of academic programme disruption, students' undeserved extension in the completion of study, poor student' concentration on academic programs and poor lecturer-student relationships amongst others. Consequently, students' academic performance may likely be affected because ASUU and industrial action have been inseparable over the years in Nigeria, tracing the union activity and its struggles during the military regime. In 1988 the union organized a National industrial action to obtain fair wages and university autonomy it was so tough that ASUU was proscribed on 7th August 1988 and all its property seized after which it was allowed to resume in 1990, but after another industrial action, it was again banned on August 23, 1992. Despite these past experiences under the military regime, the ASUU struggle persists after many decades, this shows that political will is lacking from the successive administration that refuses to demonstrate sincerity of purpose to raise and maintain the standards of university education and the workers as it is in operation in the world standard.

The demands of ASUU lately remain the issues of contention which include removal from the IPPIS payment platform that eroded the university autonomy, renegotiation of cumulative agreement on salary upgrade, payment of backlogs of Earned Academic Allowance (EAA), and outstanding salaries among others. ASUU has not been lucky to get an adequate and favourable response to these demands from the successive Nigerian government to date, the reason for continuous industrial actions by the university union. It beat the imagination of ASUU as to why the intellectuals are being treated like slaves among other workers in Nigeria during the immediate past administration and the current administration led by President Bola Ahmed Tinubu, workers such as the police force and judicial workers got salary increases without any atom of struggle or protest.

In a country where segregation, discrimination and persecution are being experienced by the brain box, then one begins to doubt if truly education is a vital tool for the survival of any nation. When education is being politicized, the incessant strike action by the Academic Staff Union of Universities (ASUU) became inevitable, industrial action has been the tool workers use to communicate grievances to their employers all over the world. This has inadvertently affected the Nigerian academic staff's well-being, a recent study revealed that the unpaid salaries of the university workers due to the strike of the year 2022 had led to the death of some academic staff because they were unable to pay for their medication (Adeosun & Egberha, 2024). On the undergraduate students, the academic performance of university students was adjudged to be affected as it poses a lot of challenges to their study duration, performance in examinations and their final grading. During the ASUU strike, most students hardly read their books the tendency to abandon their studies sets in, and it affects their learning capabilities negatively (Yusuf, 2017). Also, Olorunsola (2018) conducted a study on the impact of ASUU strikes on the academic performance of undergraduate students at the University of Lagos. The study found that the strikes led to a decline in the academic performance of students, as they missed important lectures and assessments. Also, the study found that undergraduate students who were in their final year were particularly affected negatively as they had to prepare for important exams without adequate preparation and time. According to Nwanyanwu et al (2023), the negative impact of ASUU strikes on the behaviour and academic performance of undergraduate students is significant. The study analyzed data on the University of Port Harcourt undergraduate students and found that ASUU strikes led to a high negative impact on students' behaviour resulting in increased drug abuse and other crimes among some students who refused to leave the campus during the strike. The study also found that the strikes led to the reduced academic performance of the undergraduate students.

The earlier study on the ASUU strike by Oluwagbemi and Akinade (2017), submitted that ASUU industrial action can provide an opportunity for students to engage in self-directed learning activities, such as reading and research. The study revealed that some students were able to use the strike period to engage in independent study and research, which improved their academic performance. Similarly, Oladipo and Adebiyi (2019) conducted a study that investigated the impact of ASUU strikes on the academic performance of undergraduate students at the Federal University of Agriculture, Abeokuta. The study found that the strike period provided an opportunity for students to engage in group discussions and peer learning activities, which improved their understanding of course materials and enhanced their academic performance.

Recent empirical studies related to the ASUU strike on the academic performance of undergraduate students in Nigeria were also considered to be significant to this study. The study by Asekun-Olarinmoye et al (2020) established that incessant ASUU strikes contributed to a damaging influence on the psychological healthiness of medical students. Also, Okeke et al (2021) examined the influence of the ASUU strikes on the psychosocial progress of lecturers in universities in South-Eastern Nigeria, their study revealed the grave influence on the social-emotional development of the academic staff in Nigerian universities. A study conducted by Adeosun, and Egberha (2024) on the influence of prolonged ASUU strikes on the well-being of lecturers and students in Nigerian universities also revealed that prolonged ASUU strikes had a negative influence on the well-being of Lecturers and students in Nigeria. Also, the study of Adeosun and Egberha revealed no significant difference in the ASUU strike of the well-being of lecturers and students based on sex. However, in the last industrial actions of ASUU between 14th February and 14th October 2022, students and their parents became frustrated because of the long expectation of school resumption that was far from sight. Some of the students while at home were adjudged to be doing nothing, and got engaged in other things other than academics that are not beneficial. This has contributed to social issues in Nigeria. The disruption caused by ASUU's industrial action in the academic activities and calendar of undergraduate programmes is one of the reasons some parents now prefer to send their children to private universities. Based on the background, Walberg's theory of educational productivity is adopted for this study.

Walberg's theory of educational productivity has been tested empirically as one of the theories of school learning. Walberg's (1984) educational productivity model identifies 9 factors influencing students learning outcomes, and one of the assumptions is that students' learning outcomes are measurable. Among the identified factors that can influence students learning outcomes as put forward by educational productivity theory include – students aptitude and motivation; teachers instructions and training; peer group influence; educational technology and resources and facilities. These are the possible factors that have contributed to the academic performance of the undergraduate students in this study. However, the model emphasized the importance of teacher quality and training, and students motivation and engagement, this is an indication that, more than one factor determines student's learning outcome and educational productivity. It is on this note that this study seeks to find out the position of the assumptions of the Walberg's theory of educational productivity (McGrew, 2008).

On these antecedents of unceasing ASUU industrial action in Nigeria, this study examined the post-ASUU-industrial action of the year 2022 on the academic performance of undergraduates at the University of Ilorin, Nigeria. One research question was raised with three postulated hypotheses in the study:

1. What type of impact does post-ASUU industrial action have on the academic performance of undergraduate students at the University of Ilorin?
$H0_1$: There is no significant difference in the impact of ASUU industrial action on the CGPA (academic performance) of undergraduate students

$H0_2$: There is no significant difference in the impact of post-ASUU industrial action on the Academic performance of undergraduate students based on sex.
$H0_3$: There is no significant difference in the impact of post-ASUU industrial action on the Academic performance of undergraduate students based on academic level.

Methodology

The study was a survey of descriptive type. The population were all undergraduate students in the Department of Social Sciences Education, Faculty of Education, University of Ilorin, Nigeria. The sample consists of (148) 300-level and (90) 200-level undergraduate students given a total of 238 sampled Social Studies and Economic education students using a random sampling technique. A researcher constructed a questionnaire on the impact of post-ASUU industrial action was the instrument used for the collection of data, the instrument was divided into parts. Contains parts which sought demographic information of the undergraduate students, and the impact of the 2022 post-ASUU industrial action where the sampled undergraduates were directed to rate their responses to the 14 items of the questionnaire using a 4-point Likert Scale of Strongly Agree-4. Agree-3, Disagree-2, and Strongly Disagree-1. The validity of the instrument was ascertained through the input by the experts in test and measurement. The reliability of the instrument was ascertained using the Cronbach Alpha measure of internal consistency with a reliability index of 0.84. The responses to the items of the questionnaire were analyzed using frequency counts, and percentages, while a paired sampled t-test was used to analyze participants' responses to items on post-ASUU industrial action in the questionnaire and their CGPA for the 2021/2022 academic session, to see the type of impact of Post ASUU industrial action on the academic performance on the selected undergraduate students. Also, a t-test statistic was used to test the postulated hypotheses.

Results

Descriptive Characteristics of the Respondents.

Undergraduate students at the University of Ilorin were asked to indicate their gender, and academic level. Their responses were summarized below

Table 1: Distribution of Respondents by Gender

Sex	Frequency	Percentage %
Male	62	26.1
Female	176	73.9
Total	**238**	**100**

Table 1 shows that out of the 238 undergraduate students who participated in this study, 62 (26.1%) were males while 176 (73.9%) were females. Thus, the majority of the participants were female.

Table 2: Distribution of Respondents by Academic Level

Academic Level	Frequency	Percentage %
200 Level	90	37.8
300 Level	148	62.2
Total	**238**	**100**

Table 2 shows that out of the 238 undergraduate students, 90 (37.8%) were in 200-level while 148 (62.2%) were 300-level students. Thus, the majority of the participants were 300-level students.

Research Question 1: What type of impact does post-ASUU industrial action have on the academic performance of undergraduate students at the University of Ilorin?

Table 3: Impact of ASUU Industrial Action on the Academic Performance of Undergraduate Students

S/N	Items Measuring the Impact of Industrial Action on Undergraduate Students' Academic Performance	Mean	Remark
1	Indicate your level of agreement with the following statements: The last ASUU industrial action did not necessarily dissuade my dedication to academic activities after the resumption	3.25	Agree
2	ASUU industrial action offered a chance to engage in petty business, but I am not demotivated from my academic activities.	2.98	Agree
3	During the ASUU industrial action, I developed better time management skills that helped improve my study habits.	3.21	Agree
4	Study groups during the industrial action helped improve my passion for study.	2.95	Agree
5	Willing lecturers made satisfactory alternative arrangements during the industrial action to continue academic activities.	3.19	Agree
6	ASUU industrial actions helped me to study well to prepare adequately for CA and examinations	3.20	Agree
7	The absence of physical teaching due to industrial action affected my comprehension of some courses.	2.49	Disagree
8	The industrial actions affected the level of engagement and participation in class activities.	2.28	Disagree
9	The industrial action provided an opportunity to explore alternative learning methods that positively impacted my study habits.	2.96	Agree
10	ASUU's industrial action led to a decline in my motivation to learn.	2.30	Disagree
11	There were innovative teaching approaches introduced after the industrial action that positively affected my	3.16	Agree
12	learning experience.	3.78	Agree
13			Agree

14	The industrial action resulted in more personalized attention from lecturers contributing to my academic success	2.97	Agree
	ASUU The industrial action increased the quality of my interactions with some academic staff	3.37	
	Mentoring attempts during the industrial action positively influenced my academic activities.		
	Cluster Mean 42.09	**weighted Average Mean 3.00**	

Undergraduate students were asked to indicate their level of agreement with the positive and negative worded statements of the item, the descriptive analysis of respondents tilted to agreeing with the positive worded items as indicated in the mean value of each statement and disagreeing with the negative worded items. It shows in the table the cluster mean of 42.09 and the average mean value of 3.00. since the the weighted average mean is greater than the Threshold of 2.5, it means, the ASUU industrial action impacted the academic performance of the undergraduate students positively.

H01: There is no significant impact of industrial action on the CGPA (academic performance) of undergraduate students

Participants' responses to items on the impact of ASUU industrial action in the questionnaire and their CGPA were analysed with paired sampled t-tests. The result is shown in Table 4.

Table 4: Summary of t-test statistics showing the impact of industrial action on the CGPA (academic performance) of undergraduate students

Variable	**N**	**Mean**	**SD**	**df**	**t-value**	**p-value**	**Decision**
Academic Performance	**238**	**3.30**	**0.73**	**237**	**82.76**	**0.00**	**Significant**
ASUU Industrial Action	**238**	**42.09**	**6.35**				

As shown in Table 4 the t-test calculated value is 82.76 while its p-value is 0.00 at the alpha level of 0.05. The null hypothesis one is turned down since the p-value 0.00 is less than 0.05 alpha level (0.00 <0.05). Thus, there is a positive impact of ASUU industrial action on the CGPA (academic performance) of undergraduate students.

H02: There is no significant difference in the impact of ASUU industrial action on undergraduate students based on sex.

Participants' responses to items on the impact of industrial action in the questionnaire based on their sex were analysed with an independent sampled t-test. The result is shown in Table 5.

Table 5: Summary of t-test statistics showing the impact of ASUU industrial action on undergraduate students based on sex

Sex	**N**	**Mean**	**SD**	**df**	**t-value**	**p-value**	**Decision**
Male	62	57.55	4.90	236	7.22	0.00	Significant
Female	176	49.55	5.44				

As shown in Table 5 the t-test calculated value is 7.22 while its p-value is 0.00 at the alpha

level of 0.05. The null hypothesis two is turned down since the p-value 0.00 is less than 0.05 alpha level (0.00 <0.05). Thus, there is a significant difference in the impact of ASUU industrial action on undergraduate students based on sex. Male undergraduate students with higher mean are more impacted by the ASUU industrial action.

H03: There is no significant difference in the impact of industrial action on undergraduate students based on academic level.

Participants' responses to items on the impact of ASUU industrial action in the questionnaire based on the academic level were analysed with an independent sampled t-test. The result is shown in Table 6.

Table 6: Summary of t-test statistics showing the difference in the impact of ASUU industrial action on undergraduate students based on academic level

Variable	N	Mean	SD	df	t-value	p-value	Decision
200 Level	90	50.60	7.31				
				236	1.39	0.17	Not Significant
300 Level	148	52.26	5.65				

As shown in Table 6 the t-test calculated value is 1.39 and the p-value is 0.17 at the alpha level of 0.05. It shows that the p-value is higher than the alpha value (0.17>0.05) The null hypothesis three is thereby retained. Thus, the positive impact of ASUU industrial action exists on undergraduate students based on academic level.

Discussion of Findings

Based on the data collected, analyzed and interpreted, the following findings were obtained. The study revealed that the ASUU industrial action had impacted the academic performance of undergraduate students positively. This finding could be attributed to the resolution from the lecturers and students to continue to do their best, during and after the eight-month ASUU strike. This finding is supported by the submission of Oluwagbemi and Akinade (2017) had earlier observed that industrial action can provide an opportunity for students to engage in self-directed learning activities, such as reading and research. when some students made use of the period of strike to engage in independent study and research, which improved their academic performance.

This study further revealed a meaningful impact of ASUU industrial action on the CGPA (academic performance) of undergraduate Students as the CGPA of the majority of the undergraduates who participated in the study revealed a 3.30 mean score, this showed that they were all in good standing in their academic performance. The finding agrees with Oladipo and Adebiyi (2019) whose study found that the previous ASUU strike period provided an opportunity for undergraduate students to engage in group discussions and peer learning activities, which improved their understanding of course materials and enhanced their academic performance.

The finding of the tested hypotheses showed a positive difference in the impact of industrial action on the CGPA (academic performance) of undergraduate students based on sex, the mean score of the male undergraduate students (57.55) being above the females (49.55) despite their low population in comparison with their female counterparts. The p-value (0.00) further showed a significant difference. The finding is in disparity with the finding of Adeosun and Egberha (2024) whose study revealed no difference in the influence of prolonged ASUU strike on the well-being of

undergraduate students based on sex.

The findings of this study showed that no significant difference exists in the impact of ASUU industrial action on the academic performance of undergraduate students based on academic level. This finding indicated that both 200-level and 300-level undergraduate students experienced a positive impact of ASUU industrial action on their academic performance. These academic levels were deliberately chosen to establish the findings on the undergraduate students who are not final-year students. This finding is in disparity with the previous studies of Olorunsola (2018) who conducted a study on the impact of ASUU strikes on the academic performance of undergraduate students at the University of Lagos. The study of Olorunshola found that the previous ASUU strikes led to a decline in the academic performance of students, to the extent that undergraduate students who were in their final year were particularly affected negatively as they had to prepare for important exams without adequate preparation and time. Also, Nwanyanwu et al (2023) study revealed that ASUU strikes negatively impacted the undergraduate students' behaviour so much that it reduced their academic performance.

Also, it could be deduced from the findings of this study that Walberg's theory of educational productivity is still relevant till date because, it has confirmed that the teacher quality and the trainings they have, including motivation the undergraduates received from both the university teachers and their peers during and after the ASUU strike of 2022 contributed positively to their Cummulative Grade Point Average (CGPA). This is a confirmation of hinging the study on Walberg's educational productivity theory.

Conclusion

This research work examined the impact of industrial action on the academic performance of undergraduate students in a Nigerian university. It was concluded that the impact of ASUU industrial action on the academic performance of undergraduate students is positive. The revelation of the study uncovered the erroneous belief of the stakeholders that the ASUU prolonged strike could only impact the undergraduates negatively. Also, the participants in this study are the appropriate set of graduates to be connected to industries to perform maximally for greater productivity in any endeavours. This is a further attestation that the potential to be developed is domiciled in the capable hands of Nigerian Universities. The outcome of this study has further vindicated ASUU members that it was only the physical teaching aspect that was missing during the eight months industrial action of year 2022, and that, the Socio-emotional attachment of the university lecturers to their work and students has contributed significantly to the positive impact and the impressive academic performance of the sampled undergraduate students in this study. This outcome does not necessarily mean that ASUU will want to embark on future industrial action, this patriotic reflection of ASUU at work as shown in the findings of this study should convince the Nigerian government that ASUU members deserve to be treated with more dignity.

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EFFECT OF GRAPHIC ORGANIZERS INSTRUCTIONAL STRATEGY ON SENIOR SECONDARY SCHOOL STUDENTS' RETENTION IN LEARNING CELLULAR RESPIRATION IN DUTSIN-MA ZONAL EDUCATION QUALITY ASSURANCE, KATSINA STATE, NIGERIA

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Abstract

The study investigated the Effect of Graphic Organizer Instructional strategy on senior secondary school (SS II) students' retention ability in Cellular Respiration concept in Dutsin-Ma Zonal Education Quality Assurance, Katsina State. The purpose of this study is to determine whether or not the Graphic Organizer Instructional strategy improves students' retention of cellular respiration concepts among SSII Biology students as against the use of conventional methods of teaching. Two research questions and two null research hypotheses guided the study. This study adopted a quasi-experimental design, specifically, the pre-test and post-test design, the study comprises a population of 781 SS II Biology students in the 12 public co-educational senior secondary schools in Dutsin-Ma Educational Zone which consists of 437 males and 344 females. A simple random sampling technique was used to select two schools which comprised 151 students. An instrument developed by the researcher titled the Cellular Respiration Achievement Test (CRAT) was used for data collection. The data collected were analyzed using Mean and Standard Deviation for research questions and t-test for the hypotheses testing. The result reveals that the mean performance scores of students taught using the Graphic Organizer Instructional strategy are significantly greater than that of students taught using the conventional method [$t = 9.89, p < 0.05$]. Another finding indicated that there is no significant difference in the mean performance scores of male and female students in cellular respiration concepts when taught using the Graphic Organizer Instructional strategy [$t = -0.08, p > 0.05$]. Graphic Organizers Strategy improves students' retention ability in learning cellular respiration concepts. The study recommends that secondary school biology teachers should expose their students to the Graphic Organizer Instructional strategy, to improve the students' retention ability

Keywords: Graphic Organizer Instructional strategy, Retention Ability and Gender

Introduction

Science can be described as the study of the nature and behaviour of natural things and the knowledge that we obtain about them (Adeuya, 2020). The major goal of science education is to develop scientifically, literate individuals who are concerned with high competence for rational thoughts and actions. Science education of today is expected to produce a scientifically literate citizenry that can operate in a scientific and technology-changing society (Ariyo, 2017). The teaching and study of sciences aim to encourage and enable students to provide the broader objectives of science such as knowledge, and curiosity; develop skills of scientific inquiry to design and carry out scientific investigations and evaluate scientific evidence to conclude; communicate scientific ideas, arguments and practical experiences accurately in a variety of way; demonstrate

attitudes and develop values of honesty and respect for themselves, others and their collective environment (Ezeh, 2016).

Teachers are expected to devise ways of making their students develop positive attitudes towards science and science-related disciplines (Agbowuro, Oriade and Shuaibu, 2015). In Nigeria, science subjects that are being taught in secondary schools include Biology, Chemistry, and Physics. The study of Biology is essential for the nation's scientific and technological development. Without sound knowledge and a wholesome attitude towards Biology, the much-needed and vouched-for technological breakthrough may not be achieved (Olasehinde and Usman, 2016). Biology as the subject of interest for this research is a branch of natural science that deals with the study of living organisms, including their structure, functions, evolution, distribution and interrelationships (Olayinka, 2017). For instance, the knowledge of biology is brought into play in the areas of manufacturing and processing industries, medicine, food production and pharmaceuticals among others (Nwagbo&Okoro, 2017).

Despite the significance and popularity of Biology as a science subject among many Nigerian students, performance at the senior secondary school level has been poor (Mutangana&Mwesigye, 2022). Much has been said about this poor performance in Biology. The desire to know the causes of poor performance in biology has been the focus of researchers for some time now. It has been observed that the major causes of declining performance in Biology at the senior secondary school level can be traced to the poor foundation at the Basic Education level, defective teaching strategies adopted by some Biology teachers and instructional strategies adopted by teachers of biology have been found to limit the learning of Biology (Kpiranyam, et al 2022).

Arokoyu and Chukwu (2017) ascertained that for every method of teaching a teacher uses, it's very important to incorporate an effective evaluation technique to measure the student's progress. WAEC Chief Examiner's Report (2018-2022) recommended that students should use past examination papers for practice, to learn the act of following instructions carefully, they should also practice drawing large, tidy, accurate diagrams and labelling their parts clearly. They should learn to explain compound terms in full and learn to define terms without relying on keywords from the term. They should practice the careful reading of questions to make sure that the questions being answered are the ones that were asked. This is where the graphic organizer's strategy comes about in this study. Lee (2014) regards graphic organizers as the most effective tool for teaching and improving writing skills. Dozens of empirical studies were conducted to verify the efficacy of such organizers, and almost all of these studies asserted their viability for teaching writing. It is found that these organizers help the students visualize abstract ideas, divide the writing tasks into smaller palatable parts, and monitor their writing progress (Unzueta, 2019). They are sometimes referred to as concept maps, cognitive maps, or content maps, but they are all used to serve the purpose of enhancing teaching and learning.

Graphic organizers are non-linguistic, visual tools that enable the learner to connect new information to their existing knowledge and see how concepts relate to each other and fit in, which in turn makes them recall information easily. Graphic organizers have many uses in the classroom and can be used across the curriculum and in increasing patterns of complexity and improving students' performance and retention. Therefore the importance of using Graphic organizers in teaching and learning biology and cellular respiration in particular in secondary schools cannot be overemphasized considering its

effect on developing the student's intellectual skills and hence promoting understanding as well retention of concepts being taught.

Retention is one of the most important aspects of educational life. Retention is a process, not a fixed skill that involves three key elements: encoding, storage and retrieval (Ormrod, 2016). Many researchers conducted studies on teaching methods and knowledge retention which yielded positive results in most cases Tran (2014) carried out a study on the effects of cooperative learning on students' achievement and knowledge retention. Edoho, et al (2020) agreed that effective teaching strategies improve students' retention ability, nevertheless, they reported that both male and female students have the same level of retention despite the use of effective teaching methods. This shows that the gender factor is not a barrier to students' retention ability as long as the teaching strategy is effective. Retention is the ability to store things experienced or learned. It can also be described as a form of reaction which has been presented in the past. In other words, it is a result of orientation or attitude which marks an ongoing perception (Bawa, 2014). According to Olanrewaju (2022), retention is the ability to store learned concepts which can be easily recalled from short and long-term memory. Appropriate coding of information provides the index that may be consulted so that retention takes place without an elaborate search in the memory lane.

Retention according to Isah (2014), has been found to improve the academic achievement of students in Mathematics, Chemistry and Biology. Graphic organizers help in the retention of learned concepts by providing anchorage between what the students already know and the intended learning task to be presented to the learner, it is also gender friendly. Gender refers to one of a range of identities that includes female, male and a combination of both (Nwona and Akogun 2015). Gender is one of the factors affecting the performance of students in science. Gender disparities in science education have long been observed, and they continue to exist today (Jia et al., 2020; Okorie&Ezeh, 2016; Stevenson et al., 2021). Gender issues have been a most important issue in science education. With the use of the graphic organizers strategy of teaching, both male and female students may have a greater understanding of the concept being taught and hence higher retention ability.
(Karpicke and Blunt, 2014). Thus, this study seeks to investigate the effects of the graphic organizers strategy of teaching on secondary school students' retention in Cellular Respiration concepts.

Statement of the Problem

Much has been done to advance the teaching and learning of science in secondary schools in Nigeria. Despite that, students persist in achieving poorly in science subjects, of which biology is one. In WAEC results by state ranking 2018, 2019 and 2023, Katsina State occupied 33rd, 32nd, and 33rd positions respectively out of the 36 states we have in Nigeria. These revealed that something has to be done to recover from this poor performance. The researcher made an effort to obtain WAEC and NECO Biology Examination result summary in the Dutsin-Ma Educational Zone, which is presented in Table1:

Table 1: Candidate Performance in NECO and WAEC May/June Senior Secondary School Certificate Examination in Biology in Dutsin-ma Zonal Education Quality Assurance From 2018-2023

Years	WAEC / NECO	No. of registered students	No. of students with Distinction	%	No. of students with Credit	%	No. of students with pass and fail	%
2018	WAEC	445	0	0	200	44.94	241	54.16
	NECO	843	0	0	520	61.68	320	37.96
2019	WAEC	493	2	0.41	230	46.65	262	53.14
	NECO	1067	0	0	692	64.85	371	34.77
2020	WAEC	561	8	1.43	282	50.27	271	48.31
	NECO	1084	28	2.58	552	50.92	504	46.49
2021	WAEC	362	12	3.31	148	40.88	202	55.80
	NECO	1044	11	1.0	556	53.26	477	45.69
2022	WAEC	332	3	0.90	144	43.37	184	55.42
	NECO	828	7	0.84	510	61.59	311	37.567

Source: Dutsin-Ma Zonal Education Quality Assurance

The West African Examinations Council (WAEC)\ National Examination Council Biology Examinations results of five (5) years as shown in Table 1 revealed that the student's performance in the zone has not been encouraging. Biology has recorded not more than 45% credit passes in the years 2018, 2021 and 2022 in WAEC and also not more than 62%. In 2018, 2020 and 2022 in NECO. However, there was an improvement in the results in 2020 with 50% in WAEC and 65% in 2019 in NECO. But even there is an improvement if we look back to the results of previous and subsequent years. This poor performance might be linked with unimproved teaching strategies from the teachers and other factors. Such poor performance might be continuous since Biology deals with scientific words, expression, drawing of diagrams, comparing of Biological processes, application of knowledge, use of terms and grasping of concepts. The unsatisfactory performance in biology is an indication that students have low retention (Mutangana&Mwesigye, 2022). This may negatively affect students who intend to study Biology and related courses at the post-secondary education level. Abdullahi, et al (2021) advocated that efforts to strengthen retention ability in students should be pursued by Biology teachers in Nigeria. This is because poor retention leads to poor performance (Adeniran, et al 2018).

The major causes of declining performance in Biology at the senior secondary school level can be traced to the poor foundation at the Basic Education level, defective teaching strategies adopted by some Biology teachers and instructional strategies adopted by teachers of biology have been found to limit the learning of Biology (Kpiranyam, et al 2022). Therefore, much has to be done in the investigation of the effect of graphic organizers strategy in Biology Education, concerning the students' gender in Nigeria, these were the main spots of this research study.

Purpose of the Study

This study aimed to examine the Effect of Graphic Organizers on Performance and retention in Cellular Respiration Concepts among Biology students in Dutsin-Ma Zonal Education Quality Assurance, The purpose is to

1. examine the effect of graphic organizers on the student's retention of the cellular respiration concept in Dutsin-ma Zonal Education Quality Assurance.
2. Determine the effect of graphic organizers on the Male and Female students in retention of cellular respiration concept in Dutsin-ma Zonal Education Quality Assurance.

Research Questions

1. What is the difference between the mean retention scores of students taught cellular respiration using graphic organizers and those taught using the lecture method?
2. What is the mean difference between the male and female students' retention ability when taught cellular respiration using graphic organizers?

Hypotheses

HO_1 There is no significant difference in the mean retention scores of students taught cellular respiration using graphic organizers and those taught using the lecture method.

HO_2 There is no significant difference between the mean retention scores of male and female students taught cellular respiration using graphic organizers.

Methodology

The design for this study was a pre-test and post-test quasi-experimental control research design. Thus, intact classes were used for both experimental and control groups, since it is not possible to disrupt existing classes in a school. The population of the study comprises 781 SS II biology students in public co-educational senior secondary schools in the Dutsin-Ma Educational Zone which comprises 437 males and 781 females. There are ten (12) co-educational public secondary schools in Dutsin-Ma Educational Zone.

In selecting the sample, a simple random sampling technique was used to select two schools, using the balloting method. School one with seventy (70) students was assigned as the experimental group, out of which thirty (30) are male students and forty (40) female students while school two eight one (81) students were assigned as the control group, out of which forty-four (44) students male and thirty-seven (37) female students.

An instrument developed by the researcher titled the Cellular Respiration Achievement Test (CRAT) was used for data collection. The face validity of the instrument was ascertained by two experts in tertiary institutions (universities). After the experts had made their suggestions, corrections were made. A test re-test approach was used for pilot testing the instrument. The results were compared using Pearson Product Moment correlation and the outcome of the analysis was 0.93. The experimental group was exposed to graphic organizers' instructional strategy of teaching while the control group was exposed to the conventional method for seven weeks. The data collected were analyzed using Mean, Standard deviation and t-test.

Results

Research Question One: What is the difference between the mean retention scores of students taught cellular respiration using graphic organizers and those taught using the lecture method?

Table 2: Descriptive Statistics of the Post Post-test Means Scores and Standard Deviations of both Experimental and Control Groups

Groups	N	Mean	SD	Std. Error Mean	Mean Difference
Experimental	81	40.97	8.29	0.92	
					11.6
Control	70	29.37	5.37	0.64	

Table 2: displays that, the post-post-test scores mean and standard deviation of the experimental group are 40.97 and 8.29 respectively while those of the control group are 29.37 and 5.37. The mean difference between the two groups is 11.6. Thus, the experimental group retain higher than the control group.

Research Question Two: What is the mean difference between the male and female students' retention ability when taught cellular respiration using graphic organizers?

Table 3: Descriptive Statistics of Post-Post-Test Means Scores and Standard Deviation of Male and Female Students in the Experimental Group Exposed to graphic organizers

Gender	N	Mean	SD	Std. Error Mean	Mean Difference
Male	44	40.73	8.03	1.29	
					-0.54
Female	37	41.27	8.69	1.43	

Table 3 revealed that the post-post-test scores, mean and standard deviation of male students in the experimental group are 40.73 and 8.03 and those of the female students are 41.27 and 8.69, their mean difference is -0.54. Despite that, the two groups have nearly equal means but the standard deviation indicates female students' scores are more closely related than that of the male students.

HO_1: There is no significant difference in the mean retention scores of students taught cellular respiration using graphic organizers and their counterparts taught using the lecture method.

Research Hypotheses

Table 4: Independent Samples t-test analysis of Post post-test scores in the experimental and control groups.

Groups	N	Mean	Std. D	Df	T	P-value	Remark
Experimental	81	40.97	8.29				
				149	10.33	0.00	Significant
Control	70	29.37	5.37				

Significance at 0.05

Results of Table 4.9: indicated that the p- p-value obtained was 0.00, while the t- t-value is 10.33 at 0.05 level of significance with degree of freedom 149. Hence, the null hypothesis was rejected. Since the **p** -p-value of 0.00 is less than 0.05 level of significance, the null hypothesis is rejected. This shows that there is a significant difference in the mean retention ability scores of students taught Cellular Respiration Concepts using graphic organizers and those taught with conventional lecture methods in favour of the experimental group.

HO_2: There is no significant difference in the mean retention scores of male and female students taught cellular respiration using graphic organizers

Table 5. Independent Samples t-test analysis of Post post-test scores of male and female students of the experimental groups.

Groups	N	Mean	Std. D	Df	T	P-value	Remark
Male	44	40.72	8.03				
				79	0.29	0.77 Not	significant
Female	37	41.27	8.69				

Significant at $\alpha = P > 0.05$

Table 4.8: revealed that there is no significant difference in the mean performance scores of male and female biology students taught cellular respiration using graphic organizer strategies. The p-value obtained was 0.79, while the t-value was 0.29 at 0.05 level of significance. Hence, considering the result of this finding it is necessary to retain the null hypothesis.

Discussion of the Findings

The result of this study revealed that students taught using graphic organizer strategies have higher retention ability in cellular respiration than those students taught using the conventional method. This implies that the graphic organizer's strategy is more effective in retention than the lecture method. This finding is in line with that of Amakiri and Ukwuije (2016) who revealed that graphic organizers and peer tutoring have a significant effect on science students' retention. Ejidike and Oyelana(2021) showed that there was a significant difference between the mean retention scores of students taught cellular respiration with reciprocal peer tutoring was effective in retention in biology. Also, Filgona and Sababa (2017) revealed that peer tutoring enhanced retention more than the conventional method.

The result of the t-test revealed that there is no significant difference in the level of male and female Senior Secondary School students' retention ability when exposed to graphic organizers strategy. The finding is in agreement with the finding of Osuolale (2015) who revealed that both male and female students performed equally during learning tasks. Nevertheless, contrary to this finding Burdo and O'Dwyer (2015) found that girls rather than boys performed significantly higher when the graphic organizers strategy is used as a method of instruction.

Conclusion

Graphic Organizers Strategy improves students' retention ability in learning cellular respiration concepts when used as a method of instruction and it is found to be gender pleasant technique of

teaching with regards to the retention ability of the students, just as the result discloses that there is no significant difference in the mean retention scores of male and female students in cellular respiration concepts when graphic organizers strategy is used to teach.

Recommendations

1. For better performances in biology, Biology teachers should incorporate the use of graphic organizer strategies to complement their traditional teaching-learning approach which was found ineffective in enhancing students' performance and retention.
2. Government and stakeholders in Education should encourage biology teachers by creating enabling instruments to incorporate graphic organizers in teaching biology, as a means to improve both male and female students' performance and retention in learning biology.
3. Experts in educational tests and measurement in collaboration with other educational agencies like (STAN, TRCN, VESA, NERDC etc.) should organize workshops, seminars and conferences to train science teachers on appropriate skills and develop appropriate models of graphic organizers in different subject areas to suit our classroom environment and also facilitate the training of teacher trainees.

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PRIVATE SCHOOL WELFARISM PACKAGE AS A DETERMINANT OF TEACHERS ATTITUDE TO WORK.

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Abstract
This study investigates the relationship between welfare packages and the attitudes of private school teachers toward their work in Nigeria. It highlights the critical role of teacher welfare in enhancing job satisfaction and motivation, which are essential for effective teaching and learning outcomes. The research employs both descriptive and inferential statistics to analyze data collected from 200 private school teachers, revealing a generally negative attitude toward work, with a mean score of 2.10 on a scale of 1-5. The findings indicate low satisfaction with various welfare components, including salary (mean score of 1.80), healthcare benefits (2.20), and professional development opportunities (2.40). The study also identifies specific welfare packages, such as maternity/paternity leave, vacation days, and access to loans, with a mean satisfaction score of 38%. The results suggest that inadequate welfare provisions contribute to teachers' disengagement and dissatisfaction, ultimately affecting their performance and the quality of education. The study concludes with recommendations for improving welfare schemes, emphasizing the need for systematic approaches to enhance teacher motivation and job satisfaction, thereby fostering a more conducive educational environment. Addressing these welfare issues is not only an ethical imperative but also a strategic necessity for achieving quality education in Nigeria.

Keywords: Teacher Welfare, Job Satisfaction, Private Schools, Work Attitudes and Professional Development

Introduction
Teachers are the cornerstone of any educational system, serving as the primary drivers of learning and intellectual development. Their attitudes toward work—characterized by motivation, commitment, and job satisfaction—are critical determinants of educational success. However, in both public and private educational settings, challenges surrounding teacher welfare continue to impact performance and overall educational outcomes. Welfare for teachers refers to the provision of benefits, both financial and non-financial, that ensure their well-being, motivation, and productivity. Armstrong and Taylor (2014) define welfarism as encompassing all measures that employers undertake to care for their employees, including salaries, bonuses, health insurance, pensions, housing, transportation, and professional development opportunities. These benefits serve as incentives that enhance job satisfaction and organizational commitment, fostering a positive and productive work environment (Nyakundi, Karanja, Charles, & Bisobori, 2012).

In Nigeria, teacher welfare has been a persistent issue of concern, particularly in private schools that complement the public education system. Bennell and Akyeampong (2007) highlight that private school teachers in low-income countries often face irregular salary payments, limited professional development opportunities, and job insecurity. These welfare inadequacies not only demotivate teachers but also lead to negative outcomes such as absenteeism, low morale, and diminished classroom effectiveness.

The role of teacher welfare in shaping attitudes and performance is underscored by several theoretical frameworks. Herzberg's Two-Factor Theory (Herzberg, Mausner, & Snyderman, 1959) identifies factors such as adequate compensation and recognition as critical to job satisfaction. Similarly, Maslow's Hierarchy of Needs (Maslow, 1943) posits that meeting basic needs—such as financial security and healthcare—is essential for achieving higher levels of motivation and professional engagement. These theories emphasize that teacher welfare is integral to fostering positive work attitudes and improving educational quality.

Despite the recognized importance of teacher welfare, Nigeria's education system continues to face significant challenges. Ogundele (2010) observed that "no educational system outgrows the quality and status of its teachers," stressing the need for nations to prioritize teacher welfare to ensure quality education and national development. Unfortunately, as Enimu Solomon (2017) noted, Nigerian teachers often operate in unfriendly work environments with poor remuneration and limited growth opportunities. Even in 2024, this observation remains valid, with many teachers earning meager salaries that cannot adequately support their families.

The contrast between teacher welfare in Nigeria and other countries is stark. For example, high school teachers in the United States earn an average salary of $48,631, with additional benefits such as housing and annual vacation provisions (American Education Association). In comparison, Nigerian teachers often earn the national minimum wage of 33,000 Naira, which is insufficient to meet basic living standards. This disparity underscores the need for improved welfare policies that recognize the critical role of teachers in national development.

Private schools, which often operate in competitive environments, face unique challenges in maintaining teacher welfare. As Day and Sammons (2016) note, the profit-driven nature of many private schools results in cost-cutting measures that adversely affect teacher welfare. Yet, research has shown that motivated and satisfied teachers are more likely to implement innovative teaching methods, foster positive classroom environments, and inspire their students (Darling-Hammond, 2010).

In addition, the privatization of education has introduced complexities in teacher management. While private schools bridge gaps in public education systems, their success largely depends on the quality and commitment of their teachers. Studies by Bennell and Akyeampong (2007) emphasize that improving welfare conditions in private schools can enhance teacher satisfaction, reduce turnover, and improve educational outcomes. However, as Ofoegbu (2004) observed, welfare challenges such as inadequate remuneration and lack of professional growth opportunities significantly contribute to low morale among private school teachers in Nigeria.

Addressing these issues requires systematic approaches to teacher welfare. Welfare schemes should include prompt payment of salaries, regular promotions, opportunities for professional development, and provisions for a conducive work environment. As Luthans (2015) and Achimugu (2015) argue, welfare provisions are essential strategies for motivating teachers and improving job performance. The Nigerian Union of Teachers (NUT), established to advocate for teacher welfare, must also play a more proactive role in addressing these challenges.

The welfare of teachers is a strategic priority for achieving quality education. As schools strive to meet 21st-century demands, addressing the welfare needs of teachers is not just an ethical imperative

but also a pragmatic strategy for ensuring educational success. The perspectives of Herzberg, Maslow, and other scholars highlight that investing in teacher welfare is key to fostering motivation, job satisfaction, and improved educational outcomes. Without such investments, the quality of education—and, by extension, national development—will remain at risk.

Statement of the Problem

During a teaching practice session in a private school, it was observed that some teachers exhibited a noticeable lack of motivation toward teaching their students. The underlying cause of this lack of motivation was unclear. One day, an incident occurred during a class when an administrator entered to review the mentor teacher's lesson note. An argument broke out between the mentor teacher and the administrator when the teacher was asked to take on additional subjects. The mentor teacher refused, citing the school's lack of care for its staff. The teacher further expressed dissatisfaction, revealing that despite teaching in the school for over ten years, their basic salary remained thirty-five thousand naira (₦35,000), irrespective of their educational qualifications. This scenario highlighted a potential issue with teacher welfare in private schools and raised questions about the impact of such welfare conditions on teachers' attitudes toward their work.

Purpose of the Study

This study examines the relationship between private school teachers' welfare packages and their attitudes toward work. Specifically, it seeks to:

a. Assess the attitudes of private school teachers toward their work.
b. Explore the welfare packages available to private school teachers.
c. Determine whether these welfare packages influence teachers' attitudes toward their work.

Research Questions

The following research questions guided this study:

a. What are the attitudes of private school teachers toward their work?
b. What welfare packages are provided to private school teachers?
c. Do welfare packages influence private school teachers' attitudes toward their work?

Research Hypothesis

Ho1: Teachers' welfare packages do not significantly determine their attitudes toward work.

Research Methodology

This study utilized a descriptive survey design to examine the relationship between private school teachers' welfare packages and their attitudes toward work. The choice of this design was informed by its suitability for collecting data from a sample population to explore perceptions, relationships, and trends within the subject area.

The population of the study consisted of all private school teachers in the Ilorin metropolis, encompassing individuals with diverse educational qualifications and years of teaching experience across various private schools. To ensure adequate representation, a sample of 200 teachers was selected using a stratified random sampling technique. This approach allowed the researcher to account for variations in gender, teaching experience, and educational background, ensuring that the sample reflected the broader population.

A structured questionnaire titled "Teachers' Welfare and Attitude to Work Questionnaire (TWAQ)" served as the primary instrument for data collection. The questionnaire was divided into three sections. The first section focused on demographic information, such as age, gender, years of teaching experience, and qualifications. The second section examined the welfare packages available to teachers, while the third section assessed teachers' attitudes toward their work. Respondents were required to indicate their level of agreement with various statements using a 5-point Likert scale ranging from "Strongly Disagree" (1) to "Strongly Agree" (5).

To ensure the validity of the instrument, it was reviewed by three experts in education and research methodology. Their feedback was used to refine the questionnaire for clarity, relevance, and comprehensiveness. A pilot study was conducted with 20 private school teachers from schools not included in the main study. The reliability of the instrument was tested using Cronbach's Alpha method, yielding a coefficient of 0.85, which confirmed the questionnaire's internal consistency.
Data collection involved seeking permission from the administrators of the selected private schools. The researcher, assisted by trained research aides, personally distributed the questionnaires to the respondents to enhance the response rate. The process was conducted over two weeks to ensure comprehensive data collection.

The data collected were analyzed using both descriptive and inferential statistics. Descriptive statistics, such as frequency counts, percentages, means, and standard deviations, were employed to summarize responses and address the research questions. To test the study's hypothesis and determine the relationship between teachers' welfare packages and their attitudes toward work, a simple regression analysis was conducted. The hypothesis was evaluated at a significance level of 0.05.

Answering Research Questions
Research Question One; What is private school teachers' attitude to work?

Table 1: Summary of Descriptive Statistics for Teachers' Attitudes and Welfare Packages

Variable	Mean	Standard Deviation	Frequency (N)	Interpretation
Teachers' Attitudes Toward Work	2.10	0.90	200	Generally negative attitude toward work (on a scale of 1-5)
Welfare Packages Satisfaction	2.30	0.80	200	Low satisfaction with welfare packages (on a scale of 1-5)
Salary Satisfaction	1.80	0.70	200	Low satisfaction with salary
Healthcare and Benefits	2.20	0.85	200	Low satisfaction with healthcare and benefits
Professional Development Opportunities	2.40	0.75	200	Low satisfaction with professional development opportunities

The first table provides a summary of the teachers' attitudes toward work and their satisfaction with various welfare components. The data reveals that private school teachers, on average, display a negative attitude toward their work. This is evident from the mean value of **2.10** for teachers' attitudes, which indicates dissatisfaction. This suggests that teachers are not highly motivated or

engaged in their work. Teachers might feel disengaged, which could be due to various factors such as poor working conditions, lack of appreciation, or insufficient support from the school management.

Research Question 2: What welfare packages are provided to private school teachers?

Welfare Package	Yes (%)	No (%)
Access to loan	35	65
Festive bonus	40	60
Maternity / Paternity Leave	30	70
Day off	40	60
Vacation	45	55
Annual leave	50	50
Professional development	45	55
Other benefits	25	75
Mean	**38.75**	**61.25**
Standard Deviation	**8.35**	**8.35**

The table reveals limited welfare support for private school teachers. Access to loans (35%) and maternity/paternity leave (30%) are among the least provided benefits, indicating insufficient financial and family-related support. Festive bonuses and days off are available to 40%, while vacation and professional development reach 45%. Annual leave is evenly split at 50%, but other benefits are the rarest, at just 25%. On average, only 38.75% of teachers receive these packages, with a standard deviation of 8.35% showing moderate variability. The findings emphasize the need for enhanced welfare policies to better support private school teachers.

Research Question 3: Do welfare packages influence private school teachers' attitudes toward their work?

Table 3: Correlation Analysis Between Welfare Packages and Teachers' Attitudes

Variable	Teachers' Attitudes Toward Work
Salary Satisfaction	-0.60**
Healthcare and Benefits Satisfaction	-0.65**
Professional Development Satisfaction	-0.55**
Overall Welfare Package Satisfaction	-0.70**

*Note: *$p < 0.05$ for all correlations (statistically significant)*

The correlation and regression tables provide valuable insights into the relationship between welfare package satisfaction and teachers' attitudes toward work.

Correlation Analysis (Table 3): The negative correlations in Table 3 show that the more dissatisfied teachers are with their salary, healthcare, and professional development opportunities, the more negative their attitudes toward work become. Specifically, the **s**alary satisfaction (r = -0.60**),** healthcare and benefits satisfaction (r **=** -0.65**),** and professional development satisfaction **(r =** -0.55**)** all have moderate to strong negative relationships with attitudes toward work. This suggests that poor welfare provisions are significantly linked to negative attitudes among teachers. As welfare satisfaction decreases, the negativity in teachers' attitudes toward their work increases.

Table 4: Regression Analysis for the Influence of Welfare Packages on Teachers' Attitudes Toward Work

Variable	Unstandardized Coefficient (B)	Standardized Coefficient (β)	t-value	p-value	R^2
Constant Leave/	2.40		4.80	0.000	
Salary Satisfaction	-0.30	-0.35	-4.80	0.000	
Healthcare and Benefits Satisfaction	-0.25	-0.30	-5.00	0.000	0.45
Professional Development Satisfaction	-0.20	-0.25	-4.20	0.000	
Overall Welfare Package Satisfaction	-0.40	-0.55	-6.80	0.000	0.56

*Note: *$p < 0.05$ for all variables (statistically significant)*

Regression Analysis (Table 4): The regression results further confirm the negative relationship between welfare packages and teachers' attitudes. All welfare components (salary, healthcare, and professional development) have negative coefficients, indicating that inadequate welfare provisions lead to more negative attitudes. The strongest influence comes from overall welfare package satisfaction (B = -0.40) and salary satisfaction (B = -0.30). The standardized coefficients show that salary satisfaction (β = -0.35) and overall welfare package satisfaction (β = -0.55) are the most significant contributors to teachers' attitudes. This means that teachers' attitudes toward their work are most influenced by their satisfaction with their salary and overall welfare package.

The R^2 value of 0.56 indicates that 56% of the variance in teachers' attitudes toward work can be explained by their satisfaction with welfare packages. This suggests a moderate to strong influence of welfare packages on teachers' work attitudes. In practical terms, improving welfare packages—especially salaries, healthcare, and professional development opportunities—could significantly improve teachers' attitudes and motivation, leading to a more engaged and productive workforce.

Discussion

The findings of this study reveal a generally negative attitude among private school teachers toward their work, with a mean score of 2.10 on a 5-point scale, indicating low motivation and engagement. Teachers' attitudes are critical to the quality of education, as previous research has shown that positive attitudes among educators enhance their teaching effectiveness and students' academic success (Dinham & Scott, 2000). However, in this study, the observed negative attitudes likely stem from dissatisfaction with welfare provisions, including salary, healthcare benefits, and opportunities for professional development.

Salary dissatisfaction emerged as a critical issue, with a mean score of 1.80, reflecting significant discontent. Several studies have established that low salaries are a major demotivator for teachers, particularly in private schools where remuneration often falls below the national average (Ololube, 2006). According to Herzberg's Two-Factor Theory, salary is a hygiene factor that, when inadequate, leads to dissatisfaction, even if other aspects of the job are satisfactory. Inadequate pay not only undermines teachers' financial security but also affects their psychological well-being, contributing to low morale and disengagement from work (Bennell & Akyeampong, 2007).

Research by Adeyemi (2008) similarly highlights that poor remuneration in private schools compels teachers to take on additional jobs, reducing their focus on teaching and exacerbating their negative attitudes.

Dissatisfaction with healthcare and other benefits was another significant finding, with a mean score of 2.20. The absence of adequate healthcare benefits can lead to physical and emotional strain, further diminishing teachers' capacity to perform effectively. Ofoegbu (2004) found that teachers who lack access to basic welfare provisions, such as healthcare and family leave, are more likely to experience job dissatisfaction. Additionally, the lack of maternity or paternity leave and limited access to loans, as reported in this study, reflects the broader neglect of teachers' personal and family needs by private school administrations. These findings align with earlier studies that emphasize the importance of welfare benefits in promoting job satisfaction and workforce stability (Oluremi, 2013).

Professional development opportunities were also found to be insufficient, with a mean score of 2.40. Teachers expressed dissatisfaction with the lack of training and career growth programs, which are crucial for maintaining relevance in the rapidly evolving educational landscape. As noted by Avalos (2011), professional development not only enhances teaching skills but also fosters a sense of accomplishment and purpose. However, the limited provision of such opportunities in private schools undermines teachers' sense of professional growth, leaving them feeling stagnant and disengaged. Studies by Darling-Hammond and McLaughlin (2011) underscore that investments in professional development yield significant returns in teacher efficacy and student achievement, yet private school administrators often fail to prioritize these initiatives.

The correlation analysis in this study showed a strong negative relationship between welfare package satisfaction and teachers' attitudes toward work. Specifically, salary satisfaction ($r = -0.60$), healthcare benefits satisfaction ($r = -0.65$), and professional development satisfaction ($r = -0.55$) were significantly associated with negative attitudes. This is consistent with the findings of Bennell (2004), who reported that inadequate welfare provisions result in demoralization and reduced productivity among teachers. The correlation highlights how dissatisfaction with welfare packages exacerbates teachers' negative perceptions of their roles, further emphasizing the critical role of welfare provisions in shaping work attitudes.

Regression analysis reinforced these findings, showing that 56% of the variance in teachers' attitudes could be explained by their satisfaction with welfare packages. Among the predictors, salary satisfaction and overall welfare package satisfaction had the most significant influence. These results align with the work of Sargent and Hannum (2005), who found that teachers' attitudes are strongly influenced by their perceptions of job security, remuneration, and overall workplace support. The standardized coefficient for overall welfare package satisfaction ($\beta = -0.55$) further illustrates its profound impact on attitudes, suggesting that teachers' discontent stems primarily from unmet basic and professional needs.

The implications of these findings are significant for private school administrators. Improving welfare provisions is essential for fostering positive attitudes among teachers and enhancing their performance. Competitive salaries, as advocated by Bennell and Akyeampong (2007), should be a top priority, as financial security is a fundamental determinant of job satisfaction. In addition, providing healthcare benefits, family-friendly policies, and access to professional development

opportunities can significantly improve teachers' well-being and commitment. Research by Oluremi (2013) highlights that comprehensive welfare policies not only enhance job satisfaction but also reduce turnover rates, contributing to institutional stability and improved educational outcomes.

Conclusion and Recommndations

The study underscores the critical role of welfare provisions in shaping private school teachers' attitudes toward their work. Dissatisfaction with salary, healthcare, and professional development opportunities emerged as key factors contributing to negative attitudes. These findings align with existing literature, including studies by Ololube (2006) and Avalos (2011), which emphasize the importance of addressing teachers' welfare needs to improve job satisfaction and professional engagement. Private school administrators must prioritize welfare reforms to create a more motivated and effective teaching workforce, ultimately benefiting both teachers and students. On the basis of this, the following recommndations were made:

a. Private school owners should provide competitive and timely salaries for teachers to improve financial satisfaction and work attitudes.
b. Offer comprehensive benefits such as healthcare, leave, and bonuses to enhance teacher well-being.
c. Implement regular training and career growth opportunities to boost motivation and engagement.

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EXAMINING THE IMPACT OF CHILD-CAREGIVER ATTACHMENT PATTERNS ON THE SELF-ESTEEM OF ORPHANS IN GUSAU, ZAMFARA STATE

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Abstract
This study examines the impact of child-caregiver attachment patterns on the self-esteem of orphans residing in public orphanages in Gusau, Zamfara State. Utilizing a mixed-methods approach, the research explores the complex dynamics of attachment relationships and their correlation with self-esteem levels among orphans. Findings indicate that secure attachment is generally associated with higher self-esteem; however, the institutional context of orphanages complicates this relationship. Insecure attachment patterns, particularly insecure-ambivalent and insecure-avoidant, are more prevalent and are linked to lower self-esteem in these children. The study underscores the necessity for tailored interventions to foster secure attachment through responsive caregiving practices. Recommendations include investing in caregiver training, implementing counselling and peer support programs, and ensuring personalized care to address the unique emotional needs of orphans. The research highlights the importance of understanding the role of institutional factors in attachment formation and self-esteem development, advocating for regular assessments to identify and address attachment-related issues early. Ultimately, this study contributes to the discourse on improving the psychological well-being of orphans and enhancing their emotional resilience.

Keywords: Child-Caregiver Attachment, Self-Esteem, Orphans, Institutional Care, Emotional Resilience.

Introduction
Self-esteem plays a crucial role in shaping an individual's overall well-being and social functioning. It is the internal evaluation a person makes about their worth, based on their perceptions and feelings about themselves. Self-esteem is not static; it fluctuates based on individual experiences and can be influenced by various social and environmental factors. According to Gorge (2020), self-esteem is an individual's overall judgment of their own characteristics, influenced by how they perceive their abilities, appearance, and value within society. This self-assessment begins to develop during early childhood, particularly between the ages of four and eleven, and is largely shaped by the relationships children have with their caregivers.

Self-esteem influences an individual’s behaviour, mental health, and social interactions. Children with high self-esteem tend to be more resilient, confident, and independent. They possess a strong

sense of self-worth and are more likely to navigate challenges with a positive outlook. Conversely, children with low self-esteem may struggle with feelings of inadequacy, lack of self-worth, and have difficulty maintaining healthy relationships. They may also be more prone to mental health issues such as depression and anxiety. As self-esteem is a key element of emotional and psychological growth, it is essential to foster its development in children, especially those in vulnerable situations, such as orphans living in institutional care.

Social adjustment, another key aspect of child development, refers to the ability of an individual to interact effectively with others and adapt to societal norms and expectations. According to Krisia and Barbara (2018), social adjustment is a continuous process wherein individuals adjust their behaviours to meet the standards of their social environment. For children, social adjustment plays a significant role in their ability to form meaningful relationships with caregivers, peers, and educators. It is closely linked to self-esteem, as children who feel valued and accepted by others are more likely to develop healthy self-esteem and social skills.

The attachment between a child and their caregiver is one of the most important factors influencing both self-esteem and social adjustment. Attachment theory, initially proposed by Bowlby (1969), suggests that the early bonds formed between a child and their caregiver provide the foundation for emotional security and social development. Secure attachment fosters a sense of safety, trust, and comfort, enabling the child to explore their environment and interact with others confidently. In contrast, insecure attachment patterns—such as ambivalent, avoidant, and disorganized attachment—can hinder emotional regulation and lead to difficulties in forming relationships. These children may struggle with feelings of insecurity, anxiety, and distrust, which can negatively impact their self-esteem and social adjustment (Wilder, 2017).

In Nigerian society, caregivers are expected to nurture children's physical, emotional, and social development. However, for orphans residing in institutional care, the situation can be more complex. Orphans often experience emotional neglect and attachment disruptions due to the lack of consistent and responsive caregiving. In some Nigerian orphanages, such as those in Minna, Niger State, caregivers have been criticized for not responding appropriately to the emotional and physical needs of the children. Many of these children, abandoned at an early age, are exposed to environments that fail to provide the emotional security needed for healthy development. These early experiences can lead to attachment issues, which, in turn, impact their self-esteem and social interactions.

Orphans who experience neglectful or inconsistent caregiving often exhibit behaviours such as shyness, withdrawal, clinginess, and difficulty forming bonds with others. Some children may even develop an aversion to authority figures, which further impairs their ability to develop healthy relationships. The impact of these attachment disruptions can be long-lasting, affecting not only the child's self-esteem but also their ability to interact successfully in social settings.

Research on the relationship between child-caregiver attachment patterns and self-esteem in Nigerian orphanages is limited, particularly in the North-West Zone of the country. While some studies have explored attachment in children from institutional care, much of this research has been focused on the southern regions of Nigeria. This gap in the literature calls for a focused investigation into how different attachment patterns influence the self-esteem of orphans in the North-West Zone. Gusau, Zamfara State, offers a unique setting for such a study, as it is home to numerous orphanages and vulnerable children who may face challenges in their emotional and social development due to

disrupted attachments with their caregivers.
The primary aim of this research is to examine the relationship between child-caregiver attachment patterns and the self-esteem of orphans in Gusau, Zamfara State. The study will assess how secure and insecure attachment patterns affect the children's perceptions of their worth and their ability to adjust socially. By understanding the dynamics of child-caregiver attachment and its impact on self-esteem, this research hopes to provide valuable insights into improving caregiving practices in orphanages and fostering the healthy development of orphans.

Ultimately, this study seeks to contribute to the existing body of knowledge on child development and self-esteem, with a particular focus on orphans in institutional care. By addressing the challenges faced by these vulnerable children, the research aims to offer practical recommendations for enhancing caregiving strategies, ensuring that orphans receive the emotional support and attachment security they need to develop strong self-esteem and effective social skills. These efforts can help improve the quality of life for orphans and promote their successful integration into society.

Research Questions

To guide the study, the following research questions have been formulated:

1. What is the relationship between child-caregiver secure attachment patterns and the self-esteem of orphans in public orphanages in the North-West Zone of Nigeria?
2. What is the relationship between child-caregiver insecure-ambivalent attachment patterns and the self-esteem of orphans in public orphanages in the North-West Zone of Nigeria?
3. What is the relationship between child-caregiver insecure-avoidant attachment patterns and the self-esteem of orphans in public orphanages in the North-West Zone of Nigeria?

Research Hypotheses

The following null hypotheses were proposed based on the research questions and will be tested at the 0.05 level of significance:

1. H0: There is no significant relationship between child-caregiver secure attachment patterns and the self-esteem of orphans in public orphanages in the North-West Zone of Nigeria.
2. H02: There is no significant relationship between child-caregiver insecure-ambivalent attachment patterns and the self-esteem of orphans in public orphanages in the North-West Zone of Nigeria.
3. H03: There is no significant relationship between child-caregiver insecure-avoidant attachment patterns and the self-esteem of orphans in public orphanages in the North-West Zone of Nigeria.

Literature Review

Theoretical Framework

This study draws from the theories of child development and attachment, particularly the foundational work of clinical psychologist John Bowlby. Attachment theory explains how the early relationship between a child and their caregiver influences the child's emotional and social development, including their self-esteem and social adjustment. Bowlby's attachment theory posits that self-esteem begins to develop in early childhood, rooted in the child's sense of trust, security, and unconditional love from their caregiver. These early psychosocial experiences shape emotional behaviours, which manifest in the child's future relationships and their ability to adapt socially.

John Bowlby's Attachment Theory

Bowlby's attachment theory centers on the idea that childhood development is influenced by the child's ability to form strong or weak bonds with their caregivers. His research into childhood temperament led him to conclude that a secure attachment to a caregiver provides the child with a foundation of safety and emotional security, which is crucial for healthy development. Bowlby emphasized that when children form strong attachments, they feel confident in the protection and support of their caregivers, which encourages exploration and social engagement with their environment.

Bowlby proposed three key tenets regarding attachment:

1. **Secure attachment fosters confidence**: Children who are raised with the assurance that their primary caregiver will consistently be available tend to experience less fear and anxiety than those who lack such confidence.
2. **Critical developmental stages**: This attachment-based confidence is particularly significant during the early stages of life, including infancy, childhood, and adolescence. It is during these formative years that attachment patterns are solidified.
3. **Long-lasting impact**: Bowlby asserted that the expectations formed in early childhood regarding caregiver responsiveness remain relatively unchanged throughout the individual's life, impacting their later relationships and emotional regulation.

   These propositions emphasize the role of secure attachment in fostering emotional and psychological resilience, which directly correlates to the child's self-esteem and social adjustment skills.

Concept of Orphan and Orphanage

An orphan is typically defined as a child who has lost both parents due to death or abandonment. While definitions can vary by context, the United Nations Children's Fund (UNICEF) and other organizations also recognize children who have lost one parent as orphans. These children may face significant emotional and psychological challenges due to the loss of parental care, which often leads to feelings of loneliness, anxiety, and insecurity.

In African societies, orphans may be taken in by extended family members, but the emotional and psychological challenges they face often persist. These children may struggle with issues of trust and attachment, particularly in environments where they do not receive consistent and nurturing care. Many orphans in such situations are vulnerable to social ills, including child labor and exploitation. Thus, proper caregiving and attachment formation are essential to mitigating these risks and fostering positive emotional development.

Orphanages are institutions designed to provide care for children who have lost their biological parents. These facilities aim to meet orphans' physical, emotional, and social needs by offering a stable environment and preventing exploitation and abuse. However, the quality of care in orphanages varies widely. UNICEF and other organizations emphasize the importance of providing orphans with not only physical care but also emotional support and a sense of belonging. In Nigeria, where orphanhood has become a significant concern, orphanages are essential in addressing the needs of these vulnerable children.

Concept of Child-Caregiver Attachment Patterns

In this study, child-caregiver attachment patterns refer to the emotional bonds formed between orphans and their caregivers, particularly in orphanages. Attachment is a motivational and

behavioural system that drives children to seek proximity to their caregivers when they are distressed, ensuring that the caregiver provides safety, protection, and emotional support. Attachment theory emphasizes the importance of these early bonds in fostering a secure base from which children can explore the world and develop social-emotional skills.

Bowlby described attachment as a lasting psychological connection between children and their caregivers. This bond develops through interactions where caregivers respond to the child's needs, fostering trust and emotional security. According to Myers (2019), attachment is essential for brain development and emotional health. Children who experience secure attachment are better equipped to cope with life's challenges and form healthy relationships later in life.

Concept of Self-Esteem

Self-esteem refers to an individual's overall sense of self-worth or value. According to Crocker, Brook, and Niiya (2016), self-esteem is a hierarchical concept that includes both the need for recognition from others and the need for self-respect. Self-esteem is not just about how individuals perceive themselves, but also how they value themselves in relation to others. It is shaped by various factors, including early attachment experiences.

Self-esteem is a crucial element of a child's emotional development and plays a key role in their ability to form relationships and adapt socially. For orphans, particularly those who lack secure attachment with caregivers, self-esteem can be fragile and unstable. The absence of a nurturing caregiver can lead to difficulties in forming positive self-concepts, which can hinder social and emotional development. Thus, fostering a secure attachment in orphanages is crucial to helping these children develop healthy self-esteem and positive social adjustment skills.

Methodology

A survey research design was employed for this study. The population consisted of 50 orphans from four orphanages: Magajin Gari Kaduna, Zaria, Gusau, and Zamfara State. A census approach was used, where all the orphans in these institutions were included in the study. Data was collected using two standardized instruments: the Attachment Style Classification Questionnaire for Latency Age Children (ASCQLAC) and the Rosenberg Self-Esteem Scale (RSSERS). The questionnaires were administered face-to-face, with research assistants providing explanations where necessary to ensure clarity.

The data was analyzed using descriptive statistics, including means and standard deviations, to answer the research questions. Inferential statistics, specifically Pearson Product Moment Correlation (PPMC), was used to test the hypotheses at an alpha level of 0.05. This approach allows for a thorough examination of the relationship between child-caregiver attachment patterns and self-esteem in orphans.

Results

The findings from the research questions are presented below:

Research Question One: What is the relationship between child-caregiver secure attachment pattern and self-esteem of orphans in public orphanages in North West Zone, Nigeria?

Table 1: Relationship between Secure Attachment Pattern and Self-Esteem of Orphans

Variable	N	Mean	SD
Secure Attachment Pattern	25	0.56	15
Self-esteem	19	0.59	

Analysis of the results in Table 1 reveals a relationship between child-caregiver secure attachment pattern and self-esteem among orphans in public orphanages in North West Zone, Nigeria. The mean score for the secure attachment pattern was 25, which exceeds the benchmark of 20, while the mean score for self-esteem was 19, indicating a lower level. The discrepancy in these scores suggests an inverse relationship between the secure attachment pattern and the self-esteem of the orphans. Thus, a negative relationship exists between child-caregiver secure attachment patterns and self-esteem among orphans in this region.

Research Question Two: What is the relationship between child-caregiver insecure-ambivalent attachment pattern and self-esteem of orphans in public orphanages in North West Zone, Nigeria?

Table 2: Relationship between Insecure-Ambivalent Attachment Pattern and Self-Esteem of Orphans

Variable	N	Mean	SD
Insecure-Ambivalent Attachment	23	0.77	27
Self-esteem	31	0.61	

The analysis of results in Table 2 shows a relationship between child-caregiver insecure-ambivalent attachment patterns and self-esteem in orphans in public orphanages in the North West Zone, Nigeria. The mean score for the insecure-ambivalent attachment pattern was 23, which is higher than the benchmark of 20, and the self-esteem mean was 31, also exceeding 20. These results indicate a positive correlation between the insecure-ambivalent attachment pattern and self-esteem of the orphans. Hence, insecure-ambivalent attachment patterns appear to positively influence the self-esteem of orphans in this context.

Research Question Three: What is the relationship between child-caregiver insecure-avoidant attachment pattern and self-esteem of orphans in public orphanages in North West Zone, Nigeria?

Table 3: Relationship between Insecure-Avoidant Attachment Pattern and Self-Esteem of Orphans

Variable	N	Mean	SD
Insecure-Avoidant Attachment	19	0.67	8
Self-esteem	27	0.57	

Results in Table 3 show a relationship between child-caregiver insecure-avoidant attachment patterns and self-esteem of orphans in public orphanages in North West Zone, Nigeria. The mean score for the insecure-avoidant attachment pattern was 19, which is below the benchmark of 20, whereas the mean for self-esteem was 27, which is above the benchmark. These results suggest a positive relationship between the insecure-avoidant attachment pattern and self-esteem of orphans, indicating that orphans with insecure-avoidant attachment patterns tend to have higher self-esteem in this context.

Hypotheses Testing

Hypothesis One: There is no significant relationship between child-caregiver secure attachment pattern and self-esteem of orphans in public orphanages in North West Zone, Nigeria.

Table 4: FPMC Statistics for the Relationship between Child-Caregiver Secure Attachment Pattern and Self-Esteem of Orphans

Variable	Mean	SD	N	r	Sig.
Secure Attachment Pattern	25	0.56	68	0.148	0.230
Self-esteem	19	0.59			

The analysis of results in Table 4 shows a weak relationship (r = 0.148) between the secure attachment pattern and self-esteem of orphans, with a p-value of 0.230. This p-value suggests that the relationship is not statistically significant. Therefore, the null hypothesis stating that there is no significant relationship between child-caregiver secure attachment pattern and self-esteem of orphans in public orphanages is retained.

Hypothesis Two: There is no significant relationship between child-caregiver insecure-ambivalent attachment pattern and self-esteem of orphans in public orphanages in North West Zone, Nigeria.

Table 5: PPMC Statistics for the Relationship between Child-Caregiver Insecure-Ambivalent Attachment Pattern and Self-Esteem of Orphans

Variable	Mean	SD	N	r	Sig.
Insecure-Ambivalent Attachment	23	0.77	47	0.511	0.033
Self-esteem	31	0.61			

Results in Table 5 show a strong positive correlation (r = 0.511) between the insecure-ambivalent attachment pattern and self-esteem, with a statistically significant p-value of 0.033. Therefore, the null hypothesis stating there is no significant relationship is rejected**.**

Hypothesis Three: There is no significant relationship between child-caregiver insecure-avoidant attachment pattern and self-esteem of orphans in public orphanages in North West Zone, Nigeria.

Table 6: PPMC Statistics for the Relationship between Child-Caregiver Insecure-Avoidant Attachment Pattern and Self-Esteem of Orphans

Variable	Mean	SD	N	r	Sig.
Insecure-Avoidant Attachment	19	0.67	31	0.529	0.016
Self-esteem	27	0.57			

Results in Table 6 reveal a strong positive correlation (r = 0.529) between insecure-avoidant attachment pattern and self-esteem, with a statistically significant p-value of 0.016. Therefore, the null hypothesis stating there is no significant relationship is rejected**.**

Discussion

This section discusses the results obtained from the study concerning the relationship between child-caregiver attachment patterns and the self-esteem of orphans in public orphanages in the North-West Zone of Nigeria. The study investigated three attachment patterns: secure attachment, insecure-ambivalent attachment, and insecure-avoidant attachment. The analysis presented in this study is framed within the context of psychological attachment theory, which underscores the importance of early childhood experiences in shaping emotional and social outcomes, including self-esteem.

The first research question sought to explore the relationship between child-caregiver secure attachment patterns and the self-esteem of orphans in public orphanages in the North-West Zone of Nigeria. The results revealed that orphans who exhibit a secure attachment pattern had a mean score of 25, while their self-esteem score was 19. The comparison of these mean scores with the benchmark value of 20 showed an inverse relationship between the secure attachment pattern and self-esteem, suggesting that secure attachment patterns are negatively associated with the self-esteem of orphans in these institutions. This finding indicates that, despite the positive outcomes often associated with secure attachment in typical child development, such as emotional stability, confidence, and positive self-regard, this may not hold true for orphans living in institutionalized care. Several factors may contribute to this result. For instance, the quality of care in orphanages may not always align with the ideal conditions required for fostering secure attachment. Orphans in institutional care may have experienced inconsistent caregiving, which can influence their sense of self-worth despite demonstrating secure attachment behaviours. It is also possible that the institutional environment, with limited emotional support and resources, might hinder the development of a robust sense of self-esteem. Children in orphanages often face stigmatization and social exclusion, which can erode their confidence and self-worth. Thus, while secure attachment is generally linked with positive psychological outcomes in normative settings, the institutional context may complicate this relationship, resulting in a weaker connection between attachment and self-esteem.

The second research question examined the relationship between the insecure-ambivalent attachment pattern and self-esteem among orphans. The results indicated that the mean score for insecure-ambivalent attachment was 23, which is greater than the benchmark of 20, and the mean score for self-esteem was 31. This suggests a positive relationship between insecure-ambivalent attachment patterns and self-esteem, implying that orphans with insecure-ambivalent attachment patterns tend to have higher self-esteem. Insecure-ambivalent attachment is often characterized by dependency, uncertainty, and a lack of trust in caregivers, leading to a mixed emotional response to attachment figures. Despite these traits, the finding that insecure-ambivalent attachment correlates with higher self-esteem might seem counterintuitive at first. However, it is plausible that children displaying this attachment pattern may seek to compensate for their emotional insecurity by overcompensating in their self-perception. The emotional uncertainty could lead these children to develop a stronger sense of self-worth as they may not have learned to depend on others for validation, thus fostering independence and an inflated sense of self. Another possible explanation could be the institutional dynamics in orphanages. Orphans with insecure-ambivalent attachment might demand more attention or approval from caregivers, leading to an increased sense of being noticed or valued, which might contribute to higher self-esteem. While this attachment style can lead to difficulty in forming stable relationships, the constant seeking of validation from caregivers may inadvertently increase the orphans' self-esteem in an institutional setting where attention is often limited.

The third research question investigated the relationship between insecure-avoidant attachment patterns and self-esteem of orphans in public orphanages. The results showed that orphans in the insecure-avoidant attachment group had a mean score of 19, which is below the benchmark of 20, while their self-esteem mean score was 27. This suggests a positive relationship between insecure-avoidant attachment and self-esteem, which is in line with the findings from the second research question. Insecure-avoidant attachment is often associated with emotional detachment and a lack of emotional responsiveness towards caregivers. In the context of orphanages, children with this

attachment style may have learned to suppress their emotions, potentially as a survival mechanism in response to neglect or emotional unavailability of caregivers. The positive relationship between this attachment style and self-esteem could indicate that these orphans have developed a stronger sense of autonomy and self-reliance in the absence of emotional support. Moreover, the institutional environment may foster detachment behaviors, as children may feel that emotional bonds with caregivers are transient and unreliable. Therefore, orphans with insecure-avoidant attachment might develop a more internally driven sense of self-esteem, as they have learned to rely less on others for emotional validation. This autonomy might lead to an inflated sense of self-worth, as these children may prioritize self-sufficiency over relational engagement.

The hypotheses were tested to assess the significance of the relationships between attachment patterns and self-esteem. The results showed that the relationship between secure attachment patterns and self-esteem was not statistically significant, with an r-value of 0.148 and a p-value of 0.230, which is greater than the 0.05 significance threshold. This suggests that, despite the initial assumption, the attachment-security relationship does not significantly affect self-esteem in orphans in public orphanages. On the other hand, both the insecure-ambivalent and insecure-avoidant attachment patterns demonstrated statistically significant relationships with self-esteem. For the insecure-ambivalent attachment pattern, the correlation coefficient was 0.511 with a p-value of 0.033, indicating a strong and statistically significant relationship. Similarly, for the insecure-avoidant attachment pattern, the correlation coefficient was 0.529 with a p-value of 0.016, which also confirms a strong and significant relationship. These findings suggest that insecure attachment patterns—whether ambivalent or avoidant—are more strongly associated with the self-esteem of orphans in public orphanages than secure attachment patterns. This could be due to the emotional dynamics within institutional care settings, where caregiving practices might inadvertently promote attachment insecurities rather than secure attachments.

Conclusion and Recommendations

The results of this study underscore the complex nature of attachment patterns and their relationship with self-esteem in orphans in public orphanages. While secure attachment generally correlates with positive self-esteem in typical developmental settings, the institutional context of orphanages complicates this relationship. In contrast, insecure attachment patterns—particularly insecure-ambivalent and insecure-avoidant—are more strongly associated with self-esteem in these orphans, possibly due to the emotional dynamics and caregiving practices within institutional care. These findings highlight the need for tailored interventions in orphanages to promote secure attachment and improve the psychological well-being of orphans, ultimately fostering higher self-esteem and emotional resilience. Future research should explore the role of institutional factors in attachment formation and self-esteem development, as well as the impact of caregiver training and emotional support in shaping the attachment relationships of orphans. Base on this the study following were recommended:

1. There is the need to invest in caregiver training to foster secure attachment through responsive, consistent care.
2. Introduce counseling and peer support programs to address emotional needs and boost self-esteem.
3. Ensure children receive personalised care to address unique emotional needs and strengthen self-worth.
4. Regularly assess attachment patterns and self-esteem to identify and address issues early.

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THE RELATIONSHIP AMONG SCIENTIFIC LITERACY SKILLS, SCIENCE PROCESS SKILLS AND BIOLOGY ACHIEVEMENT

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Abstract
This study examined the relationship among Scientific Literacy Skills, Science Process Skills, and Biology Achievement in two selected local government areas, in Lagos state. The study adopted a descriptive survey design. The instruments used for collecting data were the Biology Achievement Test (BAT), Test of Scientific Literacy Skills (TOSLS), and Science Process Skills Test (SPST) were adopted and administered to 500 Senior Secondary students to measure receptivity to Scientific literacy, Science Process skills and Achievement in Biology. Three null hypotheses were formulated to guide the study and analysed using SPSS-21 (Statistical Package for Social Science). The results reveal a low level of Scientific Literacy skills among senior secondary students but the relationship among scientific Literacy skills, science process skills, and Academic Achievement in Biology is greatly significant. Contrary to prior research, this study concludes that Science Process Skills have a significant relationship to Biology Achievement. It is hereby recommended that Scientific Literacy Skills be conscientiously included in the Biology Curriculum and Science Teaching should be channelled towards attaining the philosophical goal of making all SSCE students Scientific Literate.

Keywords: Science Process Skills, Scientific Literacy, Academic Achievement.

Introduction
It is fast becoming a shared vocabulary for employers, governments and organisations to complain about the skill sets of today's graduates. Changes in labour markets have changed the skill demands of many jobs. Work environments now may often be technology-rich, problems are frequently ill-defined, and people work in teams, usually multidisciplinary teams, to deal with them. We are moving away from narrow occupational title definitions and toward identifying ourselves as possessing particular skills that may be required across various occupational activities. To a large degree, the job-person or person-environment fit approach that was first well-described by Frank Parsons in the early 1900s still has sway. Still, the focus is more explicitly on the skills and characteristics an individual brings to the work rather than the occupational title or label. Many have attributed it to the stale curriculum, while educators have tried to defend their posts against such. The Federal Ministry of Education of Nigeria, in response to these agitations, have made compulsory inclusion of vocational and technological subjects to the senior secondary school curriculum, as Nigeria strive to come to par with developed nations of the World, which can be carefully traced to the inadequacies in the Science Curriculum. A good science curriculum, when

adequately implemented, will help students to acquire scientific skills that can be used in real-life problem solving; with proper science education at the secondary school level, students would have the opportunity to understand the nature and utility of theories (Miller, 2004). Curriculum planners hope that learning science at the secondary school level will produce scientifically literate people who will transform the country into a highly technologically developed state.

The extent to which learners acquire scientific literacy skills, which reflect their overall scientific literacy level, needs to be assessed to determine if the goals of secondary science education are being met. According to the National Science Foundation (2002), science and technology offer significant benefits to society, highlighting the need for concrete measures to ensure that today's youth, the leaders of tomorrow, are well-prepared in science and its applications. Several important questions arise from this situation. For instance, does the 6-3-3-4 curriculum in Nigeria adequately provide the scientific knowledge and skills necessary for social, economic, and technological development? Additionally, are graduates of the secondary school science curriculum equipped to meet the demands of modern society with a robust understanding of scientific concepts and skills? Furthermore, after two decades of implementing this curriculum, is the level of scientific literacy learners attain sufficient for promoting self-reliance? Lastly, is Nigeria progressing towards the technological development emphasized in the National Policy on Education?

Implicit in the successful completion of the Junior Secondary School curriculum is the assumption that JSS graduates would have acquired Science Process skills (both basic and integrated science process skills) contained in the integrated science core curriculum (Okebukola,1992). Esiobu's (1993) findings showed that secondary school students are not acquiring the skills. This was attributed to poor teaching, especially with teachers who preferred the traditional expository/lecture teaching method to the innovative activity-oriented teaching method, poor learning resources, and lack of students' interest, among many reasons. Given these problems, Nisbet, (2007) thought that much remains to be achieved in science learning at school "if we are to fill the science and technology places in our Universities and Polytechnics and make reasonable progress in science and technology". Murcia, (2005) in a similar manner, suggested that our generation needs more evaluation studies for primary and secondary science curricula to ascertain the directions for improvement". There is a concern about the level of understanding of secondary school students in science today because of the ignorance those students demonstrate when confronted with problems that need simple and basic scientific knowledge to solve. Secondary school graduates should be able to operate simple household equipment, repair simple appliances when damaged and appreciate the importance of practical technology.

Biology is one of the only compulsory science subjects in Lagos State that senior secondary school students offer. It is a vital science subject and an essential requirement for further learning science-oriented professions such as Medicine, Pharmacy, Nursing, Computer science, Biochemistry, Microbiology, etc. Among senior secondary school students, biology is considered an easy science subject. However, the achievement rate of students by the population of the candidates who sit for this subject does not reflect its being an easy science subject. Researchers have itemised a series of factors responsible for this abnormal trend, which links to the contemporary complexities of skills in the biology curriculum. Thus, improving Biology Achievement Test scores will be the yearning of Biology Teachers.

To overcome the challenges of the 21st century in the science and technology sector, students need

to be equipped with 21st-century skills to ensure their competitiveness in the globalisation era. They are expected to master 21st-century skills apart from just excelling in their academic performance. Therefore, it is crucial to incorporate 21st-century skills in science education. 21st century skills comprise four main domains: digital age literacy, inventive thinking, effective communication, and high productivity. Scientific literacy is one of the skills required in digital age literacy. It means knowledge and understanding of the scientific concepts and processes required for personal decision-making, civic and cultural affairs participation, and economic productivity. Scientific literacy is essential in our modern society since many issues relate to science and technology. Basic science process skills include observing, classifying, measuring and using numbers, making inferences, predicting, communicating and using the relations of space and time. The integrated science process skills consist of interpreting data, operational definition, controlling variables, making hypotheses and experimenting. Scientific literacy and science process skills have cultivated science students through science classes. With these two skills, it is hoped that science students will develop some skills needed in 21st-century skills. Therefore, this study is being carried out to examine the relationship between scientific literacy skills, science process skills, and students' achievement in biology in Lagos state, Nigeria.

Purpose of the Study

The study investigates the relationship between scientific literacy skills, science process skills, and students' achievement in Biology.

Specific purposes include:

a. To examine if understanding scientific literacy skills will relate to students' academic achievement in biology.
b. To examine if acquiring science process skills will influence students' academic achievement in biology.
c. To examine if scientific literacy and science process skills will jointly influence academic achievement in biology.

Research Questions

The following research questions were raised for the study.

a. To what extent will understanding scientific literacy skills influence students' academic achievement in biology?
b. To what extent will acquiring science process skills influence students' academic achievement in biology?
c. To what extent are scientific literacy and science process skills a joint influence on students' academic achievement in biology?

Research Hypotheses

In addressing this situation, the following research hypotheses were generated and aligned with the Research Questions as a guide to this study. Thus, this study would test the following hypotheses;

$H0_1$– There is no significant relationship between Scientific literacy Skills (TOSLS score) and students' academic achievement in Biology (BAT Score).

$H0_2$– There is no significant relationship between Science Process Skills (SPST Score) and students' academic achievement in Biology (BAT Score).

$H0_3$– There is no significant relationship among Scientific Literacy skills (TOSLS score), Science Process Skills (SPST Score) and students' academic achievement in Biology (BAT Score).

Methodology

The population for the study comprised all the students in S.S. II and S.S. III in two purposively selected local governments in Lagos (Surulere and Lagos Mainland local government), of which five private-owned and five government-runed senior secondary schools were selected in each local government. Each school had twenty-five respondents comprising male and female senior secondary students. The researcher personally visited the selected schools to administer the instruments. The TOSLS, SPST and BAT were personally distributed to a total of 500 respondents of this study in the twenty selected senior secondary schools in the two purposively selected local governments in Lagos state, with proper monitoring and collected after forty-five minutes.

The descriptive Survey Research Design was adopted for this study. The paper surveys the relationship between scientific literacy skills, science process skills, and student achievement in biology among senior secondary students in Lagos State, southwest Nigeria. The research instruments were adopted. Test of Scientific Literacy Skills (TOSLS) is a 4-option multiple choice test of 28 items. The Science Process Skill Test (SPST) is composed of 18 questions with five options that test students' science process skills, which consist of 10 items on the basic science process skills, 8 items on the integrated science process skills, and the Biology Achievement Test (BAT) is a 4-option multiple choice 30-items for which a table of specification was constructed to ensure content validity, developed by the researcher and validated by three experts. The reliability of the instruments was determined by the statistical analysis of the data collected from the pilot study. The data collected were analysed using frequencies and percentages for the respondents' data. Frequencies, percentage mean and standard deviation were adopted to analyse the research questions. Pearson correlation statistics was used to test null hypotheses at a (0.01) significance level.

RESULTS

The results of the analysis are presented in the tables below:

TABLE 4.1: Distribution of Respondents by Gender

	GENDER				
		Frequency	**Per cent**	**Valid Percent**	**Cumulative Percent**
Valid	**MALE**	**288**	**57.6**	**57.6**	**57.6**
	FEMALE	**212**	**42.4**	**42.4**	**100.0**
	Total	**500**	**100.0**	**100.0**	

Table 4.1 revealed that 57.6% of respondents were male, while 42.4% were female.

TABLE 4.2: Distribution of Respondents by Age Range

	AGE	Frequency	Per cent	Valid Percent	Cumulative Percent
Valid	BELOW 12	15	3.0	3.0	3.0
	13 - 15	214	42.8	42.8	45.8
	16 - 18	185	37.0	37.0	82.8
	ABOVE 18	86	17.2	17.2	100.0
	Total	500	100.0	100.0	

Table 4.2 revealed that 3%, 42.8%, 37.0%, and 17.2% of respondents are below 12, 13 – 15, 16 – 18, and above 18, respectively.

TABLE 4.3: Distribution of Respondents by Class

	CLASS	Frequency	Per cent	Valid Percent	Cumulative Percent
Valid	SSS 2	226	45.2	45.2	45.2
	SSS 3	274	54.8	54.8	100.0
	Total	500	100.0	100.0	

Table 4.3 revealed that 45.2% and 54.8% of respondents were SSS 2 and SSS 3 Science students, respectively.

Research Question 1: To what extent will understanding scientific literacy skills influence students' academic achievement in biology?

TABLE 4.4: Mean Ratings and Standard Deviation of the Respondent on BAT and TOSLS scores.

VARIABLES	N	MEAN (μ)	S.D
BAT SCORE	500	13.7180	3.36528
TOSLS SCORE	500	8.2220	2.78068

Table 4.4 reveals the mean ratings and standard deviation of respondents' BAT and TOSLS scores. It shows that respondents' BAT mean score of 13.7180 (3.36528) was significantly higher than the TOSLS mean score of 8.2220 (2.78068).

Research Question 2: To what extent will acquiring Science Process skills relate to students' Academic Achievement in Biology?

To answer this question, means, standard deviations and percentages have been used for all students on 18 items were calculated; besides the values for SPST, the mean and standard deviations for each component skill are also included in Table 4.9

TABLE 4.5: Mean Ratings and Standard Deviation of the Respondent on BAT and SPST scores.

VARIABLES	N	MEAN (μ)	S.D
BAT SCORE	500	13.7180	3.36528
SPST SCORE	500	7.0280	2.42052

Table 4.5 shows the respondents' mean ratings and standard deviations. The results show that respondents' BAT mean score of 13.7180 (3.36528) was higher than the SPST mean rating of 7.0280 (2.42052).

Research Question 3: To what extent do scientific literacy and science process skills jointly influence students' academic achievement in biology?

TABLE 4.6: Descriptive statistics of Academic performance B.A.T score

	N	Minimum	Maximum	Mean	Std. Deviation
B.A.T Score	**500**	**7.00**	**20.00**	**13.7180**	**3.36528**
TOSLS Score	**500**	**4.00**	**17.00**	**8.2220**	**2.78068**
SPST Score	**500**	**3.00**	**12.00**	**7.0280**	**2.42052**

Table 4.6 shows the respondents' mean ratings and standard deviations. The results show that respondents' BAT mean score of 13.7180 (3.36528) was higher, while the TOSLS mean rating of 8.2220 (2.78068) was slightly higher than the SPST mean rating of 7.0280 (2.42052).

Research Hypothesis 1: There is no significant relationship between Scientific literacy Skills and students' academic achievement in Biology.

Table 4.7: Correlation table on the relationship between Scientific literacy Skills and students' academic achievement in Biology.

Measures of Association

	Pearson Correlation	Sig. (2-tailed)	N	REMARKS
B.A.T * TOSLS	**0.021**	**0.642**	**500**	**Accept Ho_1**

Table 4.7 shows no association or significance between Scientific Literacy Skills Score and student's academic achievement in Biology, so Scientific Literacy skills have a dismal partial correlation with academic achievement. Therefore, the null hypothesis is accepted. There is no significant relationship between Scientific Literacy skills (TOSLS score) and students' academic achievement in Biology. It could be inferred that respondents have negligible levels of Scientific Literacy Skills.

Research Hypothesis 2: There is no significant relationship between Science Process Skills and students' academic achievement in Biology.

Table 4.8: Correlation table on the relationship between Science Process Skills (SPST Score) and student's academic achievement in Biology.

Measures of Association				
	Pearson Correlation	**Sig. (2-tailed)**	**N**	**REMARKS**
B.A.T * SPST	**0.245****	**0.000**	**500**	**Reject Ho_2**

**Significant at 0.01 level (2 – tailed)

Table 4.8 shows a strong positive association and significance between Science Process Skills and students' academic achievement in Biology. Better science Process skills lead to better academic achievement, so the null hypothesis is rejected. There is a significant relationship between Science Process Skills and students' academic achievement in Biology.

Research Hypothesis 3: There is no significant relationship between scientific literacy skills (TOSLS score), Science Process Skills (SPST Score), and students' academic achievement in Biology (BAT Score).

Table 4.9: Correlation table on the relationship between Scientific Literacy, Science Process Skills and student's academic achievement in Biology.

		BAT	**TOSLS**	**SPST**
BAT	**Pearson Correlation**	**1**	**0.021**	**0.245****
	Sig. (2-tailed)	**-**	**0.642**	**0.000**
TOSLS	**Pearson Correlation**	**0.021**	**1**	
	Sig. (2-tailed)	**0.642**	**-**	
SPST	**Pearson Correlation**	**0.245****	**0.168****	**1**
	Sig. (2-tailed)	**0.000**	**0.000**	**-**

****Significant at 0.01 level (2 – tailed)**

Table 4.9 shows a strong positive association and significance between Science Process Skills, scientific literacy, and students' academic achievement in Biology. Better science Process skills lead to better academic achievement. Thus, it could be predicted that scientific literacy is a precursor to or is related to science process skills. Thus, a contributory explanation of improved academic achievement will be achieved if the SPST and TOSLS scores are high.

Discussion of Findings

In Hypothesis 1, it was observed that there is no significant relationship between Scientific literacy Skills and student's academic achievement in Biology. This shows a negligible level of scientific literacy skills among senior secondary students. This finding corroborates with Oluwatelure (2012), An Investigation into the Scientific Literacy Level of the Nigerian University Undergraduates. Department of Science and Technical Education, Faculty of Education, Adekunle Ajasin University, Akunbga Akoko, Ondo State, Nigeria. Presented online to British Journal of Education, Society & Behavioural Science 2(2): 139-149, 2012. Similarly, the finding also agrees with Yael Schwartz et al. (2006) "The use of scientific literacy taxonomy for assessing the development of chemical literacy among high-school students". The Department of Science Teaching, The Weizmann Institute of Science, Rehovot, Israel. The study was to determine the level of teachers' attitudes about scientific literacy and achieve sustainable improvements in scientific literacy; teachers must develop a positive attitude toward science.

Analysis of Hypothesis 2 shows there is a significant influence between Basic Science Process Skills and students' academic achievement in Biology. This result indicates that Science Process skills will ultimately be evidenced in better Biology Achievement. This finding is similar to that of Kyunghee, et al, (2012), Norris, , & Phillips. (2003) and Laugksch, (2000). All observed a significant positive correlation between science process skills and academic achievement. Analysis of Hypothesis 3 shows a strong positive relationship between Science Process Skills and Scientific literacy, Science Process Skills and students' academic achievement in Biology, so better Science Process skills lead to better academic achievement, which will ultimately impact scientific literacy skills level. This finding aligns with Bruner's constructivist theory, which relies on learners' cognitive structures, experiences and mental models towards learners' development and innovation.

Conclusion

It is observed from the research findings that Scientific Literacy Skills are at a low level. The current biology curriculum is not conscientiously instituted based on the philosophy of making all scientific learners. The study revealed a positive correlation between science process skills and biology achievement. The positive correlation between Science Process skills and academic achievement in Biology, which was evaluated by the general point averages of respondents, can be interpreted as there is no evaluating and grading system in which these concepts affect the success evaluation of the students. Evaluating students' academic achievements according to scientific literacy skills will make students put effort into gaining these skills and will set the requirements for graduating with them.

Recommendations

1. Scientific Literacy and Science Process Skills have been observed to be a strong predictor of academic achievement in Biology, thus gaining a 21st-century skill set. In Biology teaching, choosing appropriate sets of Scientific Literacy skills to be impacted or transferred during the teaching-learning transactions cannot be done. It is overemphasised that a conscious effort must be made to ensure its visibility in the set goals during lesson planning. The call is therefore made for the inclusion of Scientific Literacy Skills as a philosophical goal in science education curriculum development.
2. The State or Federal Government should make available funds and sponsor the training of teachers in developing science process skills and scientific literacy skills. The rightful rubrics should be required to measure these skills. Improving students' academic performance in biology should be done conscientiously via workshops, seminars, and conferences for teachers to raise their awareness.
3. A call to the Federal government, Ministry of Education, private organisations, and non-governmental organisations to conscientiously include scientific literacy skills as a philosophical tenet in developing science curriculum, especially Biology curriculum.

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PERCEIVED IMPACT OF FURTHER MATHEMATICS KNOWLEDGE ON STUDENTS' ACADEMIC PERFORMANCE IN MATHEMATICS AT SENIOR SECONDARY SCHOOL

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Abstract
Further mathematics has been described to be the bedrock of science, technology, engineering and mathematics (STEM). In Nigeria, mathematics is divided into pure mathematics and further mathematics. Further mathematics has been seriously neglected by most students' in Nigeria since it is not compulsory in senior secondary school and it has a positive effect in their academic performance in mathematics. On this note, the study investigated the perceived impact of further mathematical knowledge on students' academic performance in mathematics at Senior Secondary School, Ilorin, Kwara State. Ex-post facto research design was used to elicit information needed for analysis. The stratified sampling technique was used to select students for each school. However, 200 hundred students are considered in the study, 10 students were picked from a school comprising of 20 schools from two local governments in Ilorin, Kwara State. The acquired data was analyzed using the Regression and t-test statistical tools. The findings revealed that there is strong relationship between further mathematics and mathematics. It also revealed significant impact of further mathematics on academic performance of students in mathematics. The study also found that gender had significant impact on pupils' understanding of further mathematics and academic achievement in Mathematics. It was also discovered that school type had a significant effect on the academic performance of students in mathematics with knowledge of further mathematics. The researchers suggested that mathematics teachers be encouraged to teach further mathematics in school in order to strengthen students' scientific skills right from senior secondary schools. Further mathematics should be made require for all scientific and non scientific students in senior secondary schools, as the majority of them take a similar course in further mathematics when they get to tertiary institution

Keywords: Further Mathematics Knowledge, Mathematics Performance, Secondary school

Introduction
Further mathematics is described as a crucial instrument for all science subjects in both senior secondary schools and higher institutions. Further mathematics extends the skills and knowledge acquired in mathematics and is offered as an elective subject in senior secondary schools of Nigeria. This subject introduces students to advanced topics in mathematics, getting them prepared for further studies in mathematics or related courses. It is mandatory for all students to take basic mathematics, only a few science students opt for further mathematics. The Nigerian educational system has embraced this global trend and recommends that further mathematics be regarded as an elective in senior secondary school classes. Lyakhova & Neate (2018) stated that participation in advance mathematics is expected to increase the number of undergraduate students pursuing courses in the Sciences, Technology, Engineering, and Mathematics (STEM) fields.

Further Mathematics is intended for students who are mathematically-inclined who are willing to deepen and improve their understanding of mathematics and its applications in society. Students will gain advanced mathematical thinking and reasoning skills, as well as a broader understanding of mathematical methods and instruments. This will give students who wish to study mathematics or related university courses like Science, Engineering and even some non science discipline like Economics, Accounting can benefit from a more solid foundation in the subject.

However, Gbamibole (2013) referred to further mathematics as an analytical subject encompassing advanced mathematical concepts. In the Nigerian Educational System, further mathematics is a relatively recent curriculum that relates to advanced secondary school mathematics. According to Odili and Asuru (2011), a national workshop on policies and strategies for improving the teaching and learning of mathematics at all levels, convened by the National Mathematics Centre (NMC), proposed the addition of further mathematics into the Nigerian school curriculum.

Experts and researchers have identified further mathematics as mostly relevant in STEM fields, especially at the tertiary level (Barham, 2012; Bowyer & Darlington, 2016). Students perceive further mathematics as an importance subject that prepares them for STEM fields, particularly in the sciences (Ademola, 2014; Baldwin, de Pomerai & Smith, 2016). The subject is introduced at the senior secondary school level (Baldwin et al., 2016; Rossdy, et al., 2019). Further mathematics is more demanding than basic mathematics but is considered more rewarding in terms of tertiary education and career opportunities (Ademola, 2014; Baldwin et al., 2016; Chadwick, 1985).

Mathematics is categorized into general mathematics and further mathematics at the senior secondary school level. General mathematics is compulsory for all students, regardless of what the students want to study in advance course (Dehipawala et al., 2014; Baskan et al., 2010). Mathematics is the requirement for university admission in most disciplines (Ahmed et al., 2015; Okey & Gladysibibo, 2015). Conversely, further mathematics is optional and typically taken by pure science and technical students (Ademola, 2014; Oluwatusin & Dele-Rotimi, 2017). Further mathematics is not compulsory in Nigeria and is often avoided by students due to the challenges they face in learning it (Bowyer & Darlington, 2016; Michelsen, 2015). However, the relevance of further mathematics to the learning of basic mathematics and other science subjects has grown in popularity among researchers

Students in Senior Secondary School are exposed to advanced level mathematics topics, preparing them to pursue Engineering, mathematics or mathematics related fields. Meanwhile, all students offer mathematics, only a few number of science students or non science students typically offer further mathematics (Olawatusin & Dele, 2017).

Lyakhova and Neate (2018) stated that students find it difficult to correlate the knowledge of Mathematics learnt at secondary school and the knowledge Mathematics learnt at the University. The objectives of the Nigerian Further Mathematics curriculum are to:

1. Students should acquire conceptual and manipulative math skills to get prepared for further math courses and implementations.
2. Maintain consistency with those employed in Federal Colleges of Education, Universities, and Polytechnics so that graduates of the program won't need to pick up any new skills when they enroll in any of the aforementioned establishments.
3. Develop advanced mathematical abilities in aspiring scientists, engineers, and mathematicians.

(NERDC, 2012)

Math is one of the most important subjects taught in schools all around the world. It is a topic that has direct connections to other topics, particularly the sciences and technology. Mathematics is another subject that is mandated for both primary and secondary education. Mathematics is a vital and essential tool for every nation's advancement in science, technology, and the economy, according to Umameh (2011) in Tshabalala & Ncube (2013).

Due to mathematics' importance in today's world, it is a required subject in secondary education. Every discipline is impacted by mathematics to varying degrees (Charles and George 2019). According to Onwudire (2015), mathematics is essential to the development of every person and every country. It is believed to be an instrument for political, socio-economic, scientific and technological developments (Chang, 2002). Mathematics is perceived as the foundation of scientific and technological knowledge, cherished worldwide. Over centuries, it has been viewed as a prime vehicle for developing logical thinking and higher-order cognitive skills in students. Additionally, mathematics plays a significant role in various scientific fields, such as physics, engineering, and statistics. Picker (2010) opined that mathematics is the root of science, essential for a nation's prosperity and economic independence. Competence in mathematics provides opportunities for personnel needed in industry, science, technology, and education.

Neale (2010) stated that mathematics lessons are likely to be instructed in schools and colleges worldwide more than any other subject. Despite the benefits, mathematics is often perceived as difficult, obscure, and uninteresting to some people. Nevertheless, mathematics is crucial in life, though many learners find it difficult to learn the necessary mathematical skills and processes useful in their everyday lives. Odumosu et al. (2012) described mathematics metaphorically as the farmer's cutlass, the tailor's tape, the artist's pencil, the barber's clipper, the hairdresser's comb, the journalist's pen, the broadcaster's microphone, the doctor's stethoscope, and the lawyer's wig. This metaphor illustrates mathematics as a tool for solving societal problems. Otunu-Ogbisi (2009) described the teaching and learning of mathematics as the process of imparting and acquiring skills, knowledge, aptitude, abilities, and attitudes that enable individuals to be functional and productive, contributing to national development goals.

The status of mathematics as the root for developing scientific reasoning and the associated benefits likely informed its compulsory inclusion at all levels of basic education in Nigeria (Omenka & Otor, 2015). Mathematics is taught primarily to develop thinking skills, self-reflection, and problem-solving abilities concerning environmental and societal issues. The National Science Foundation (2002) affirmed that students should possess a conceptual understanding of mathematics in various forms and know how and when to Use various mathematical representations for diverse goals. Such presentations allow students to experience, discover, discuss, and reconstruct the socially negotiated nature of mathematics.

Despite the importance of mathematics, students' achievement in the subject at both junior and senior school levels has worsened over the years (Oyedeji, 1987). Researchers confirm low performance in mathematics in qualifying exams (SSCE) and placement exams like the University Matriculation Examination – UME (Okoro, 2005). In Kenya, Bosire et al., (2008) reported that mathematics performance is alarmingly low, with only 15% of students who took the mathematics examination scoring a D+ grade (30–40%). A ten-year study of mathematics performance in the Kenya

Certificate of Secondary Education Examination from 1999 to 2008 shows national mean scores ranging from 12.23 to 18.73 (Mbugua et al., 2012). Ngware et al.'s (2015) findings further underscore this issue, indicating that African countries' performance in mathematics is significantly poorer comparing to the rest of the globe. They highlight that in the International Mathematics and Science competition, five African countries participated and were ranked among the last seven of the 45 countries that took part.

Similarly, Nigerian curricula and policies give mathematics the full weight it deserves from elementary school through higher education. In light of this, all elementary and secondary school pupils must study mathematics as a core subject, according to a (2004) Federal Republic of Nigeria (FGN) declaration. A student must also pass mathematics as a required subject at the credit level in order to be admitted to any postsecondary institution in Nigeria. The following goals for secondary school math are stated in the Comparative Education Study and Adaptation Center (CESAC) (1982):

- To cultivate computing proficiency as well as the drive and capacity for accuracy to the extent that it matters for the task at hand.
- To cultivate exact, rational, and abstract thought
- To improve one's capacity to identify issues and use mathematical knowledge to solve them.
- To give the basis in mathematics that is required for higher education.
- To pique the learner's curiosity, inventiveness, and inventiveness.

In the view of the above context, this study aims to investigate the perceived influence of further mathematics knowledge on students' academic performance in mathematics in senior secondary schools in Ilorin, Kwara State.

Review Literature

Ademole (2007) investigated the effect of further mathematics on students' achievement in mathematics, biology, chemistry, and physics in Ogun State, Nigeria. He concluded that offering further mathematics is advantageous for understanding mathematics and other science subjects. He encouraged all science students to take further mathematics, as it enhances their performance in these subjects. Teachers should teach further mathematics effectively so students can apply the knowledge in other subjects.

Olamilekan & Loyison (2023) examined how further mathematics predicts students' performance in physics in Freetown, South Africa. They concluded that further mathematics strongly predicts students' performance in physics. They recommended encouraging students to undertake further mathematics due to its usefulness in tertiary education, particularly in STEM fields. Unlike several cited studies, gender and school type did not significantly influence the prediction between further mathematics ability and physics performance among participants.

Similarly, Hamza et al. (2015) studied the effect of further mathematics on students' achievement in mathematics, biology, chemistry, and physics in Katsina State, Nigeria. They observed that students offering further mathematics have an overall advantage over their non-further mathematics counterparts. Offering further mathematics at the secondary school level exposes students to advanced topics, enhancing their performance in various science subjects and providing a strong foundation for tertiary education, especially for those pursuing mathematics and engineering. They recommended that science students be encouraged to take further mathematics to enhance their performance in other subjects. Teachers should ensure that students understand and can apply the

knowledge gained.
Oluwatusin & Dele (2017) evaluated the impact of the further mathematics curriculum on students' performance in science-related subjects in the senior secondary certificate examination in Ikere Local Government. They concluded that including further mathematics in the curriculum leads to improved academic performance in other science disciplines. Students that are well-versed in advanced mathematics succeed in physics, chemistry, and biology.

Statement of the Problem
Further Mathematics is an advanced topic taught in senior secondary school to prepare students for higher-level courses at tertiary institutions. Further Mathematics is a broad program that aims to enhance students' mathematical knowledge. The WAEC chief examiner (2013, 2014, 2016, and 2017) claimed that students' performance has consistently fallen below standard, attributable to inadequate coverage of the Further Mathematics curriculum by students. The chief examiner recommends that students and teachers master all of the Further Mathematics curriculum topics before the exam, as questions are based on the complete curriculum, not just specific areas taught.

Despite the importance, most schools and parents are not encouraging students to offer further mathematics. The perceived influence of further mathematics knowledge on students' academic performance in mathematics in senior secondary schools in Ilorin, Kwara State, has not been extensively studied. While further mathematics is offered as an elective subject, there is limited research on its impact of further mathematics knowledge on students' performance in mathematics. This study aims to investigate the perceived the impact further mathematics has made in students' academic performance in mathematics in senior secondary schools.

Objectives of the Study
The purpose of this study was to perceived influence of further mathematics knowledge on students' academic performance in mathematics in senior secondary schools in Ilorin, Kwara State, Nigeria. The objectives of the study were to:

1. Find the relationship between further mathematics and mathematics and significant impart of further mathematics knowledge on academic performance of students in mathematics
2. Find the significant impart of further mathematics knowledge on academic performance of students in mathematics based on gender and school type.

Research Questions
What is the impact of Further Mathematics knowledge on academic performance of students in Mathematics?

Research Hypothesis
H_0: There is no significant impact of Further Mathematics knowledge on academic performance of students in Mathematics.
H_1: There is no significant impact of gender on academic performance of students in Mathematics.
H_2: There is no significant impact of school type on academic performance of students in Mathematics

Methodology

The researchers employed an ex post facto design. In this study, the mathematics results from SS 2 to SS 3 examinations were collated for analysis. Mathematics results from two years were collected from each school, comprising five students from science classes and five students from either commercial or arts classes. Because the five students in science are offering both mathematics and further mathematics while the five students in commercial or art class is only offering mathematics. The grading used for analysis was adapted from Badmus and Loyiso (2023), who categorized grades as A (excellent, 70-100%), B (good performance, 60-69%), C (satisfactory, 50-59%), D (less than satisfactory, 45-49%), E (unsatisfactory, 40-44%), and F (failed, below 39%). In this study, scores were categorized as high scorers (70-100%), medium scorers (50-69%), low scorers (40-49%), and failed (below 39%). The classes were considered to compare the performance of students offering both further mathematics and mathematics and those offering only mathematics. In Nigeria, most science students take both subjects, while arts or commercial students take only mathematics.

The participants offering mathematics were administered a consent form in science classes and arts or commercial students. The criteria for the selection of the participating schools included a common syllabus, qualified teachers, science students offering both subjects, and arts or commercial students offering only mathematics. Only students who filled and signed the consent form with their parents/guardians formed the sample for this study, ensuring that ethical processes were not compromised. It is worthy of note that all the participating students offered general mathematics as it is compulsory.

However, A sample size of two hundred (200) students were purposively selected from ten (10) senior secondary school in two local government participated in the study. One hundred (100) students were chosen from each local government consisting 5 in private schools and 5 in public schools. The data collected from the respondents were analyzed using regression and t-test

Results

In Table 1 below: 200 students were used in the study, 109 were male representing (54.5%) of the sample population, while 91 were female representing (45.5%) sample of the population. Out of the 200 students that were considered in the study, 131 students were from public schools which is (65.5%) sample population while 69 students were from private school which is also (34.5%) of the sample population. However, male students had more representation than female students.

Table1: ***Summary of Demographic Distribution of Respondents***

Variable	**Frequency**	**Percentage(%)**
Gender		
Male	**109**	**54.5**
Female	**91**	**45.5**
Total	**200**	**100.0**
School Type		
Public	**131**	**65.5**
Private	**69**	**34.5**
Total	**200**	**100.0**

H_0: There is no significant impact Further Mathematics knowledge on academic performance of

students in Mathematics.

Table 2: *Summary of the Regression for relationship between further mathematics and mathematics*

A. Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.918[a]	.843	.842	.51120

a. Predictors: (Constant), Further mathematics

B. Anova

Model		Sum of Squares	Df	Mean Square	F	Sig.
0	Regression	277.013	1	277.013	1060.034	.000
	Residual	51.742	198	.261		
	Total	328.755	199			

a. Dependent Variable: Mathematics

b. Predictors: (Constant), Further mathematics

C. Coefficients[a]

Model		Un standardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	.596	.090		6.605	.000
	Further mathematics	1.144	.035	.918	32.558	.000

a. Dependent Variable: Mathematics

Part A of Table 2 revealed that 0.918 indicates a strong positive similarity between further mathematics and mathematics. R Square is 0.843 indicates that 84.3% of the variance in mathematics is explained by further mathematics. In other words, students' academic success in mathematics is predicted by their further mathematics knowledge or Further Mathematics has a substantial and considerable effect on mathematics, accounting for a large percentage of the variance.

Parts B show how the independent variable further mathematics significantly predicts the dependent variable mathematics. To test the null hypotheses, since $p<0.0001$ which is less than 0.05 which indicates further mathematics predicts mathematics. The null hypothesis is therefore not accepted. Thus, the alternate hypothesis is accepted at the level 0.05 of significant. The relationship is considered statistically significant. Therefore, the results indicate that further mathematics has a considerable and strong positive influence on students' performance in mathematics

The Part C revealed the relationship between the Further mathematics and Mathematics can be represented in the equation 0.596+1.144 (Mathematics)

HO_1: *There is no significant impact of gender on further mathematics knowledge in academic performance of students in Mathematics.*

***Table* 3:** *Summary of t-test Analysis of the perceived impact of further mathematics knowledge on academic performance of students in mathematics based on gender*

Group	N	Mean	Std.Dev.	Df	t-value	Sig.
Male	109	1.63	0.48	198	12.47	0.000
Female	91	1.00	0.00			

The table 3 t-test results show a statistically significant difference in the perception of the impact of further mathematics on academic performance of students in mathematics based on gender. Evident from the calculated t-value of 12.47 which is greater than .05 α level (12.47 > .05). Thus, the hypothesis is not accepted. Male students perceive the influence of further mathematics on their academic performance differently compared to female students. Given the mean scores, male students have a higher perception of the influence of further mathematics on their academic performance compared to female students. Since the significance value is 0.000, it suggests that the observed difference is not due to random chance.
Therefore, the data indicates a significant gender difference in the perception of further mathematics' influence on academic performance in mathematics, contradicting the initial statement that there is no significant impact of gender.

HO_2: *There is no significant impact of school type on academic performance of students in Mathematics*

***Table* 4:** *Summary o*f *t-test Analysis of the perceived impact of further mathematics knowledge on academic performance of students in mathematics based on school type*

Group	N	Mean	Std.Dev.	Df	t-value	Sig.
Public	131	1.69	0.48	198	0.47	0.00
Private	69	1.00	0.00			

Table 4 shows the results of t-test analysis that determined the significant difference in the perceived influence of knowledge of further mathematics have a positive impact in mathematics academic performance in senior secondary school students in Ilorin, Kwara State based on the type of school (public or private). The calculated value of t is 0.47 for which is greater than .05 α (.47 > .05). Thus, hypothesis is therefore not accepted. It means there is a significant influence of further mathematics knowledge on academic performance of students in Mathematics based on school type

The public schools perceive the impact of further mathematics knowledge on their academic performance in mathematics differently compared to private schools. The public schools students had a higher mean score of 1.69 compared to private school students who had a mean score of 1.00. The type of school did not influence significantly the prediction between students' further mathematics ability and students' mathematics performance. Therefore, the data indicates a significant school type difference in the perception of further mathematics' impact on academic performance, contradicting the initial statement that there is no significant influence of school type.

Discussion

Further mathematics has been regarded as the most difficult subject and has been neglected by most students, particularly in Nigeria. In this study, we discovered a robust association between further mathematical knowledge and mathematical performance. 84.3% of the sample of the population demonstrated how much variation in mathematics is explained by further mathematics. Further

Mathematics has a considerable and favorable impact on students' mathematical performance. Students who had better scores in further mathematics also had better scores in mathematics; students with poor scores in further mathematics also had poor scores in mathematics from the study. H_0 was tested and it is statistically significant which predicts the relationship between mathematics and further mathematics. This finding is consistent with the findings of Hamza et al. (2015), who investigated the impact of further mathematics on students' achievement in science subjects such as mathematics, biology, chemistry, and physics in Katsina State, Nigeria, as well as Oluwatusin and Dele (2017), who also investigated the impact of the further mathematics curriculum on students' performance in science-related subjects in the senior secondary certificate examination in Ikere Local Government. Both stated that further mathematics has a beneficial influence in mathematics other mathematics related. Furthermore, the majority of topics in further mathematics are also in mathematics, therefore they are closely related.

Male students offered more mathematics than female students in this study. Male students obtained higher mean scores in mathematics and further mathematics than their female counterparts. However, the corresponding hypothesis indicated that gender has a considerable influence on student performance in further mathematics and mathematics. This study verifies the preceding position that gender plays an important role in learners' ability in both additional mathematics and mathematics. The hypothesis also confirmed that school type has a considerable impact on students' success in further mathematics and mathematics.

Conclusion

Form the study, there was revealed that there is a significant relationship between further mathematics and mathematics. Further mathematics is a strong predator of mathematics. There was a significant difference in the perception of both male and female base on gender and school type.

Recommendation

For better improved performance in mathematics, students should offer further mathematics. All schools should be encouraged to offer further mathematics in respect to any class. Female students should be given equal opportunity as their male counterpart to study science related carriers as they both exhibited the potential to excel in science. Public school should be exposed to the same resources available in private schools to bridge the gap in their performance.

Senior secondary schools should consider integrating relevant concepts from Further Mathematics into the standard Mathematics curriculum. This would help all students benefit from the deeper understanding that Further Mathematics provides, even if they do not take the subject formally. Invest in continuous professional development for Mathematics teachers, focusing on strategies to bridge the gap between students with and without Further Mathematics backgrounds. Teachers should be equipped to identify and support students who may struggle with advanced concepts due to a lack of exposure to Further Mathematics.

Senior secondary schools should encourage more students to take Further Mathematics by promoting its benefits, especially for those interested in STEM fields. This could be done through counseling sessions, career talks, and showcasing the success stories of former students who benefited from Further Mathematics.

Implement support programs for students who do not take Further Mathematics but wish to improve their performance in regular Mathematics. This could include extra classes, tutoring sessions, or peer study groups focusing on challenging topics.

Education policymakers should consider reviewing the Mathematics curriculum to ensure it is aligned with the demands of Further Mathematics, especially for students who plan to pursue STEM courses in higher education. A more cohesive curriculum could help bridge the gap between the two subjects.

Schools and educational authorities should continue to research the impact of Further Mathematics on students' performance in Mathematics and other subjects. Feedback from this research can be used to continuously refine and improve the curriculum and teaching methods.

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INVESTIGATING RELATIONSHIP BETWEEN NOTE-TAKING, KNOWLEDGE RETENTION AND ACADEMIC ACHIEVEMENT AMONG SENIOR SECONDARY STUDENTS IN KWARA STATE

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Abstract
The interplay between note-taking, knowledge retention, and academic performance has garnered significant attention in educational research. However, research has not been adequately conducted on the significant relationship between students' note-taking, knowledge retention and their academic performance in senior secondary schools in Kwara State and particularly Kwara North Senatorial District. This study examined the correlation between students' note-taking, ability to retain information and academic performance as a learning outcome at the research sites. The study employed a non-equivalent quasi experimental design; 45 students were in the experimental group which represented 56.25% and 35 in the control group which represented 43.75% from the two selected senior secondary schools in Edu Local Government Area, Kwara State. The samples employed were not randomly assigned to the group, since intact group were used in the experimental and control group due to the research method employed. Two-day training program was conducted as a means for data collection. The trainings were recorded and delivered in Nupe language and later translated into English. The training topic was validated by three language teachers from the research sites. Data obtained from pre and posttests were fed into SPSS for analysis. Descriptive statistics and Independent Sample T-test were run concurrently. The results of the reliability test turned out to be 0.79. The findings revealed that there is a statistical significant difference between experimental group who took notes after listening to the recorded training lectures before the tests and control group who neither took notes nor listened to the recorded training lectures as related to their knowledge retention of information as well as their academic performance. Suggestions were made for the improvement of students' learning outcomes. Educators in Kwara North particularly and Kwara State in general should prioritize teaching evidence-based note-taking strategies and incorporate innovative technology methods to engage students academically for their community development.

Keywords: Note-taking, retention, performance, state.

Introduction
Note-taking remains a significant component of classrooms' formal teaching and learning process in the 21st century. The ability to take effective notes is a critical skill for students, in order to influence their learning processes and academic outcomes. The relationship between learners' active notes-taking, knowledge retention, and academic performance has been the focus of various studies. As learning takes place everywhere at any time, however, it becomes more befitting and meaningful, if, the main ideas and important points from what is being learnt are written down, outlined or summarized and presented orally or in writing. Jianga, Midurab, Kellera, Bakerc, Paquetted and Jaclyn (2018), note-taking refers to either written document or a lecture and recording information by writing it down. In another word, note-taking is an active process that requires students to listen, engage, and distill information into manageable forms (Miller & Duffy, 2020). Effective note-taking

strategies are found to enhance understanding about teaching, retention and to provide a reference for learners' previous knowledge (Peverly, Ramaswamy, Brown, Sumowski, Alidoost, & Garner, 2007).

In the same vein, knowledge retention refers to the ability to recall or apply learned information over time. Studies indicated that active engagement during the learning process, such as through effective note-taking, significantly enhances retention (Roediger & Butler, 2011). Moreover, revisiting and reviewing notes can further reinforce learner's memory (Karpicke & Blunt, 2011) to perform academically. Study has shown that, integrating note-taking practices for students further contribute to improved academic outcomes (Dunlosky, Rawson, Marsh, Nathan, & Willingham, 2013). For students to take full advantage of both functions, they must both take notes as well as review them (Robinson, Katayama, Beth, Odom, Hsieh, & Vanderveen, 2006).

Interestingly, taking and reviewing notes from lectures or texts are associated with positive learning outcomes (Armbruster, 2009; Peverly et al., 2007). Considerable research has indicated that students who took lecture notes generally outperformed non-note-takers who merely listened to lectures or read texts on various tasks (Peverly, Brobst, Graham & Shaw, 2003). There is a plethora of studies to confirm it in a country like Nigeria and particularly in Kwara State. Thus, the present study aims to investigate the relationship between students' note-takings, retention and academic performance among two selected senior secondary schools in Edu Local Government Area of Kwara North, Kwara State, Nigeria.

Literature Review

Educational studies have long documented that effective note-taking strategies enhance understanding and retention, (Peverly et al., 2007) and facilitate academic success for students (Armbruster, 2009). Williams and Eggert, (2002) identify two basic functions of note-taking that play major role in enhancing retention and academic performance of a learner. The first one is the encoding function that is used as an internal storage for recording information from notes that help learner to convert information taken into memory. The second one is the external storage function that is used as an external memory storage that can be reviewed by learner afterwards.

Moreover, note-taking is cognitively demanding which requires learners to process information, make decisions on which information to record, hold temporarily in working memory, record it, organize, paraphrase, and elaborate on it (Bui, Myerson, & Hale, 2013; Piolat, Olive, & Kellogg, 2005). In addition, knowledge retention refers to the ability to recall or apply learned information over time. On this note, studies indicated that active engagement during the learning process, such as through effective note-taking, significantly enhanced retention (Roediger et al., 2011) while revisiting and reviewing notes further reinforced memory (Karpicke et al., 2011). Also, academic achievement is often measured through grades and performance assessments. Research has shown that students who employed effective note-taking strategies tend to achieve higher academic performance. Dunlosky et al., (2013) asserted that the integration of note-taking practices with other study techniques, repetition and self-testing, further contributed to improved academic performance of learners.

Relationship between note-taking, knowledge retention and academic performance

Several researchers have argued that notes-taking attracts learner's attention to instructional content (Haghverdi, Biria, & Karimi, 2010) increases their retention of information (Meyer, 2002),

facilitates instructional content into text and one's own understanding (Piolat et al., 2005), and enables better construction of deep-level mental representations of content (Bui et al., 2013). Also, note-taking was found to empower learners connect new content with existing prior knowledge to have positive effect on the learning performance (Kobayashi, 2005; Lee, Lan, Hamman & Hendricks, 2008) and serves as a contributor to students' comprehension, as well as their short-term and long-term recall (Boyle & Weishaar, 2001).

Interestingly, studies revealed that students who take notes learn, remember information and are better able to retrieve the information later (Ward & Tatsukawa, 2003; Kobayashi, 2006). A higher knowledge retention leads to better performance on assessments. Hattie (2009) found that students who can recall and apply information tend to excel academically, he also affirmed the significance of retention in the learning process. Also note-taking leads to an increase in positive effects on student learning, as more information is being processed by the students (Bui et al., 2013).

Furthermore, engaging in note-taking correlated with achievement (van de Sande, Abramson, & Judson-Garcia, 2017) betters retention, increases attention to material used (Kane, Smeekens, von Bastian, Lurquin, Carruth & Miyake, 2017). As well, note-taking benefited learners' memory (Peverly & Wolf, 2019) only that, while taking note, students need to pay attention, organize the information, and then record it in an understandable manner before it evaporates from their memories (Bui & Myerson, 2014).

In addition, group note-taking makes learning more effective than individual note-taking as Harbin, (2020) and Chen, Wang, and Huang (2021) found that collaborative note-taking in particular might be more effective than taking notes individually, this is because, note-taking places a cognitive burden on learners, which might be better resolved when working in a group rather than individually.

The cognitive challenge of trying to comprehend, process, and record information may be divided among group members, allowing students to retain more of the information from collaborative note-taking (Orndorff, 2015; Shi, Yang, Yang, Liu, & Yang, 2020) due to the fact that, If learners share the workload of note-taking among a group, individual members' cognitive capacities will be freed up, leading to higher levels of learning (Kirschner, Sweller, Kirschner, & Zambrano, 2018). In this area, studies are still lacking to reveal this importance in countries like Nigeria in which the present study was carried out.

Problem Statement

Note taking from lectures or from text is an autonomous activity that transverses many academic areas. Unfortunately, research has failed to address adequately the role that the learner plays when taking or reviewing notes. Studies on note-taking have largely focused on its importance but have minimally explored its relationship with learners' retention of information and academic performance, particularly among learners in Kwara State. Research is yet to capture the question of how senior secondary school students can best recall the flow of information in classroom lectures that will assist their learning outcomes (Piolat et al., 2004) and some experimental studies on students' academic performance have been inconclusive regarding the benefits of note-taking training (Boyle et al., 2001; Meyer, 2002) and have had serious methodological weaknesses and have not consistently involved meaningful training sessions that incorporate practice and evaluation of the note-taking skills. Based on the abovementioned statements, the following hypotheses were formulated, to investigate the relationship between students' note-taking, retention and their

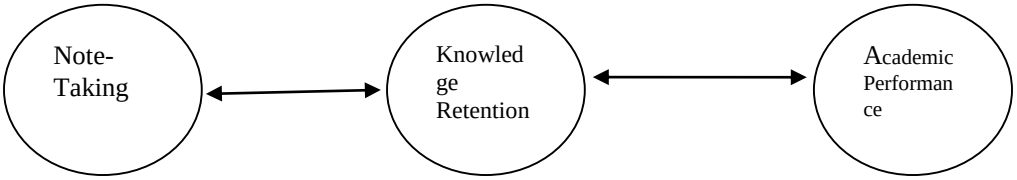
academic performance.

Research hypothesis

Two research hypotheses were formulated regarding this study as follows

H01: There is no significant difference in mean scores of students allowed to listen to the recorded training lectures, take notes and revise them before the tests and those neither allowed to listen to the recorded training lectures nor allowed to take notes before the tests as regarding their knowledge retention. H02: There is no significant difference in mean scores of students allowed to listen to the recorded training lectures, take notes and revise them before the tests and those neither allowed to listen to the recorded training lectures nor allowed to take notes before the tests as regarding their academic performance.

Figure 1 below shows the conceptual framework, on which the research hypotheses were formulated on.



The above figure 1 hypothesizes that, note-taking is related to student's retention of knowledge which in turns related to their academic performance.

Methods

Methods employed in this study are highlighted in the next subheads as follows:

Participants

80 participants were selected from two senior secondary schools in Edu Government Areas of Kwara State. A non-equivalent quasi experimental design was adopted including 45 students in the experimental group and 35 in the control group. The samples employed were not randomly assigned to the group, they willingly chose to be in the experimental and control group. The sample size was sufficient for this research design based on Creswell, (2012), Cohen, Manion and Morrison, (2007) and Brysbaert, (2019) who suggested that, 15 participants can be used for experimental studies. Table 1, shows the distribution of samples by treatment.

Table 1: Distribution of Participants by Treatment

S/N	Group	Frequency (n)	Percentage (%)
1	Experimental	45	56.25
2	Control	35	43.75
	Total	80	100.0

Table 1 presents the frequency and percentage of the participants in the groups as in the study. The number of students in the experimental group was 45 which represents 56.25% while there were 35

students which represents 43.75% in the control group. This shows that the number of students in the experimental group who participated in the study was slightly more than those who were controlled. But the variance is not expected to affect the outcome of the study. The distribution of the participants into experimental and control group contributes to the research method since a non-equivalent quasi experiment study was adopted in this study. Table 2, shows the sample sizes by their schools.

Table 2: Sample of the study by School

S/N	**Schools' names**	Sample Frequency (n)	Percentage (%)
1	Lafiagi Secondary School, Lafiagi	50	62.5
2	Tsaragi Unity Secondary School, Tsaragi	30	37.5
	Total	80	100.0

Table 2 presents the frequency and percentage of the participants from two selected senior secondary school within Edu Local Government, Kwara State who participated in the study. The number of participants from Lafiagi Secondary School, Lafiagi was n=50 (62.5%) and there were n=30 participants (37.5%) from Tsaragi Unity Secondary School, Tsaragi. This shows that the difference in number of participants from both schools who participated in the study was marginal. By implication, the distribution of participants on the basis of their school was not the same. This is expected to alienate the tendency of bias caused as a result of uneven distribution of participants on the basis of institutional affiliation.

Materials Used

Android phones were used to record the training sessions before the tests were conducted. Common Blue ink Ballpoint Pens and Higher Education 80 leaves tagged Ambition were used for writing the tests by the participants.

Procedure

At the inception of this study, prior to the experiment, the trainings were carried out by the researcher and other two enumerators employed. Each session of the trainings took forty five (45) minutes and recorded by the researcher and two enumerators. The trainings were delivered in Nupe mother language on a topic titled: **"CHALLENGES NIGERIAN YOUTHS ARE FACING EDUCATIONALLY AND WAY OUT OF THEM**". The English version of the training topic was validated by the Senior Secondary English teachers of the two selected schools in Edu Local government area of Kwara State. The topic was chosen to make the participants critically think focusing on note taking and its relationship with knowledge retention and academic performance. The trainings were later back translated into English for the purpose of the study and the researcher assures the consistency of the training activities throughout. Table 3, shows the details of the trainings before the tests.

Table 3: Trainings by Day and Time Used

S/N	Trainings	Morning Time	Evening Time
1	Day One (90 minutes)	8-8:45 a.m	5-5:45p.m
2	Day Two (90 minutes)	8-8:45 a.m	5-5:45p.m

Table 3 presents the number of days and exact time used for the conduct of trainings in the study. The training day one was carried out morning and evening. Each session was forty five minutes and

the same was in the second day. This shows that the distribution of days in the training was even controlling the extraneous variables that might influence the outcome of the experiment.

Additionally, in the third day, the pretests were conducted lasting 45 minutes as done in the trainings on intervals of morning and afternoon. The participants' pretests were collected, checked and marked with highest possible scores of 100. On the hand, to examine the relationship between note-taking, knowledge retention and academic achievement, the posttests were carried out on the fourth day within the same time the pretests were conducted. Before the posttests, the participants in the experimental group were allowed to listen to the recorded training lectures, take notes and revised them for 45 minutes while the participants from the control group were neither allowed to listen to the recorded training lectures nor allowed to take notes. The posttests were then conducted, collected and marked as did in the pretests for comparison. The students' raw scores obtained from their pre and posttests were fed into SPSS for data analysis. Descriptive statistics, reliability test and independent sample t-test were run concurrently. The results of the reliability test turned out to be 0.79 which is an acceptable range according to Nunally's Table cited in Sharifi, 2002, p. 202. Table 4 shows the results of descriptive statistics as below.

Table 4: Descriptive analyses for both pre and posttest results

S/N	Students' Note-Takings	Mean		St.d		Pretest results		Posttest results		Retention Matrix		Academic Performance Matrix		Decision rule
						Freq (n)	Freq (n)	Freq (n)	Freq (n)	Freq (n)	Freq (n)	Freq (n)	Freq (n)	
		Exp	Con	Exp	Con	Exp	Con	Exp	Con	Exp	Con	Exp	Con	
1	Able to summarize the lectures	41.75	14.25	1.50	.637	2730 (39)	2170 (31)	3010 (43)	765 (17)	41	10	43	9	In favor of Exp
2	Able to connect ideas in the lectures to others	40.00	11.50	1.69	.416	2590 (37)	1400 (20)	3010 (43)	675 (15)	42	7	44	6	In favor of Exp
3	Able to capture the information in the lectures	40.50	13.00	.707	.485	2800 (40)	2310 (33)	2870 (41)	315 (7)	42	11	43	7	In favor of Exp
4	Able to review the lectures	40.00	14.00	1.41	.414	2380 (34)	1540 (22)	2870 (41)	585 (13)	40	12	42	10	In favor of Exp
5	Able to paraphrase the lectures	38.00	19.50	1.42	.349	2520 (36)	2100 (30)	2730 (39)	450 (10)	39	-	41	-	In favor of Exp
6	Able to generate new knowledge from the lectures	41.08	12.35	1.47	.629	2870 (41)	1610 (23)	2800 (40)	405 (9)	43	-	44	-	In favor of Exp

·Freq = Frequency
·(n) = Sample size
·Exp = Experimental
·Con = Control

Table 4 above presents the two groups as employed in the study. The analyses show that the participants in the experimental group were able to outperform their counterpart in the control group as reflected in the posttests' scores, albeit, they are at par in pretests' scores. The participants in the experimental group showed the potentials to retain knowledge and perform academically in terms of lectures' summarization (M= 41.75, SD =14.25), connection of ideas (M= 40.00, SD =11.50), capturing the information (M= 40.50, SD =13.00), reviewing (M= 40.00, SD =14.00), paraphrasing the lectures (M= 38.00, SD =19.50), and generating novel knowledge from the lectures (M= 41.08, SD =12.35) all in favor of experimental group. This means that, if students have more time to take notes, almost 60% of knowledge can be retained by them which in turn will help them perform academically than they were seen performing. Table 5, shows the significant difference in the participants' scores related to their knowledge retention.

Table 5: Comparison between Mean Scores of Students Who took note while listening to the recorded training lectures and those who were not as related to their knowledge retention

Group	N	Mean	SD	Df	t-value	Sig (2 tail)
Experimental	45	73.76	16.54	78	10.38	0.211
Control	35	25.17	5.08			

Table 5 of Independent Samples t-test shows that, there is a statistical significant difference between participants' mean scores in experimental group and control group. This showed that significant differences existed in the mean scores of students who took notes, listened to the lecture and reviewed them before the tests and those neither took notes nor listened to the recorded training lectures as related to their knowledge retention of information. This is due to the fact that the calculated p value of 0.211 (2-tailled) is found to be less than the α=0.05 alpha level of significance while the t-calculated value of 10.38 is greater than the t-critical value of 1.96, at Df 78. Their calculated posttests mean scores were 73.76 and 25.17 for experimental and control groups respectively. Consequently, the null hypothesis which states that there is no significant difference in mean scores of students allowed to take note while listening to the recorded training lectures and those neither allowed to listen to the recorded training lectures nor allowed to take notes as related to their knowledge retention is hereby rejected. Table 6, shows the significant difference in the participants' scores as related to their academic performance.

Table 6: Comparison between Mean Scores of Students Who took note while listening to the recorded training lectures and those who were not as related to their academic performance

Group	N	Mean	SD	Df	t-value	Sig (2 tail)
Experimental	45	80.03	22.73	78	12.66	0.072
Control	35	19.54	3.62			

Table 6 of Independent Samples t-test shows that, there is a statistical significant difference between participants' mean scores in experimental group and control group. This showed that significant differences existed in the mean scores of students who took notes, listened to the lecture and reviewed them before the tests and those neither took notes nor listened to the recorded training lectures as related to their academic performance. This is due to the fact that the calculated p value

of 0.072 (2-tailled) is found to be less than the α =0.05 alpha level of significance while the t-calculated value of 12.66 is greater than the t-critical value of 1.96, at Df 78. Their calculated posttests mean scores were 80.03 and 19.54 for experimental and control groups respectively. Consequently, the null hypothesis which states that there is no significant difference in mean scores of students allowed to take notes while listening to the recorded training lectures and those neither allowed to listen to the video-recorded training lectures nor allowed to take notes as related to their academic performance is hereby rejected. Next to this is the presentation of the results.

Results and Discussions

Results of the study indicated that note-taking by the students in group or individually or giving them notes prior to the conduction of tests plays a pivotal role in retaining information that will assist them to excel academically. Additionally, note-taking either an outline or online helps students to retain courses taught which in turn assist them in tests or examinations. Moreover, the findings show that a statistically significant difference exists between note-taking, knowledge retention and academic performance of learners.

The findings of this study agreed with what the study of Haghverdi et al., (2010) revealed that note-taking on an outline increased test performance beyond other note formats (check Iranian paper). Students recorded lecture notes on various outline or matrix frameworks or without aid in their conventional manner.

In this regard, considerable studies have indicated that students who took lecture notes generally outperformed non-note-takers who merely listened to lectures or read texts on various tasks or text notes (Peverly et al., 2003; Kobayashi, 2005). On the other hand, a number of other studies have shown no significant difference in performance between note-takers who did not review notes and non-note-takers or have indicated that taking notes can even interfere with learning (Jianga, et al., 2018). The well-documented literature on effect of note-taking on retention and performance indicates that having learners generate information and meaning during study leads to increased retention and learning, compared to merely passively processing the information without generation (Richland, Bjork, Finley, & Linn, 2005). The findings of this study are in line with study of Robinson, et al., (2006) which found that students to take full advantage of both functions, they must both take notes as well as review.

Suggestions

Upon the findings above, the following suggestions were made among others that,

1. Future studies should investigate the effectiveness of different note-taking strategies on knowledge retention and academic performance or compare the effectiveness of teacher-provided notes versus student-generated notes on knowledge retention and academic performance.
2. Focus groups interview be conducted to explore students' experiences with note-taking, knowledge retention and academic performance qualitatively to identify patterns and themes.
3. Note-taking programs be developed and evaluated for students or incorporated into existing teaching and learning to support learners.
4. Longitudinal studies be conducted to investigate the long-term effects of note-taking on students' knowledge retention and academic performance.
5. Mixed method research be carried out on this topic to make it more practically inclined.

Conclusion

In conclusion, this study has demonstrated the significant relationship between note-taking, knowledge retention and academic performance among senior secondary school students in Kwara North, Kwara State, Nigeria. The findings underscore the significance of note-taking as a vital skill for academic performance, particularly in the regions where resources may be limited. In order to improve learning outcomes, educators in Kwara North should prioritize teaching evidence-based note-taking strategies, incorporating technology and innovative methods to engage students. Additionally, policymakers should invest in teacher training programs and educational infrastructure to support effective note-taking practices. By doing so, this, can enhance students' knowledge, academic performance in Kwara North and ultimately their future prospects contributing to the region socio-economic development.

The nexus between note-taking, knowledge retention, and academic performance underscores the importance of teaching effective note-taking strategies as part of academic curricula, enhanced retention through organized and comprehensive notes not only aids in immediate learning but also fosters long-term success in academic pursuits.

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A COMPARATIVE STUDY BETWEEN DA'WAH PRINCIPLES AND DA'WAH APPROACH (MANHAJ-SALAF) OF SALAFIYYAH GROUPS IN YORUBA LAND: A LITERATURE REVIEW

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Abstract
In Yoruba land, reviving the Sunnah in line with orthodox practices was under the umbrella of Ahlus-Sunnah, however, a new trend of Salafiyyah Da'wah emerged within Yoruba land, advocating for a distinct da'wah methodology which eventually creates division and disunity. In Shariah, there are da'wah principles and methodologies that are established and dynamic in nature. However, Salafiyyah Da'wah has distinct principles and methodologies referred to as (Manhaj-Salaf) that are peculiar to the group. This research compared the general da'wah principles and that of Salafiyyah groups, specifically in the concept of Aqeedah, Bid'ah and Takfir. The research employed a qualitative approach involved extensive literature reviews for data collection. The findings revealed that Salafiyyah groups in Yoruba land belong to Ta'alimiyyah (education – oriented) group, the main-stream of Saudi-Salafiyyah da'wah movement. Also, it was found that, there are three factions of Salafiyyah groups in Yoruba land namely; the Takfiriyyah/Jabatiyyah, which is more rigid in excommunication practices; the Madkhaliyyah which is more inclining to ultra-conservatism and sectarianism, and the Dakatirah, a moderate faction tolerant of other Sunni groups. The latter group is closely in line with the general principles and methodologies of da'wah according to the Shariah. However, some adherents of Madkhaliyyah are moderate but preferred to be in the group for some reasons. The research recommended fostering a unified da'wah identity under "Ahlus-Sunnah wal Jama'ah" to reduce exclusivism. Also, a balanced approach in interpreting religious texts to minimizing Saudi political influence and avoidance of dogmatic approach in practicing Manhaj-Salaf is needed. By implementing general da'wah principles, the Salafiyyah Da'wah in Yorubaland can achieve greater collision and foster an inclusive Islamic community that respects diverse da'wah practices while upholding core values.

Keywords: *Salafiyyah, Da'wah, Manhaj-Salaf, Ahlus-Sunnah, and Bid'ah.*

Introduction
Da'wah activities and methodologies took another dimension with the emergence of *Salafiyyah Da'wah groups* few decades ago in Yorubaland. *Salafiyyah Da'wah* activities and methodologies appear new, even within the fold of *Ahlus-Sunnah*. This is because the methodology is not in-line with the conventional organizational method of *da'wah* known in Yorubaland. However, there are principles and methodologies enshrined in *Shari'ah.* This paper compares the methodologies of *Salafiyyah (Manhaj-Salaf*) as well as specific approaches with the Islamic principles of *da'wah*. The *da'wah* principles and methodologies are enumerated. The pillars of *Manhaj-Salaf* are highlighted and compared with the approaches of *Salafiyyah* adherents. The selected three areas of approaches: *Aqeedah, Bid'ah* and *Takfir* were reviewed. Recommendations and suggestions that will develop *daw'ah* and unity of the Muslims were highlighted.

Islam and Yorubaland

The majority of the Yoruba currently live in Southwest of Nigeria, occupying six states: Lagos, Ogun, Ondo, Ekiti, Oyo, Osun states. A large percentage of Yoruba people are also in Kwara and Kogi states in the North-Central of Nigeria. Some Yoruba can also be found in Edo and Delta states. Considerably numbers of Yoruba are in other West African countries such as Republic of Benin, Togo, Liberia and Sierra Leone. Yoruba are also present in other continents of the world, in countries like Cuba, Brazil, Haiti, Peru, Jamaica and United States of America (Atanda, 1980).However, the South-western states of Nigeria mentioned above generally accepted as the traditional homeland of the Yoruba.

The Yoruba people were worshippers of deities and ancestors before the advent of Islam. Even though they believe in the existence of a Supreme God whom they refer to as Olodumare, i.e. the owner or Lord of heaven, deities were worshipped and honoured throughout Yorubaland (Oluremi, 2006).The deities and idols are believed to be guardians, the caller for peace and harmony in the communities. The notables among them are Osun (goddess of river) in Osogbo, OjuOsi of Obanta, Alagemo (god of chameleon) both in Ijebu-Ode and Olumo Rock in Abeokuta (Oluremi, 2006). There are other ancestors worshipped like Oro (unseen for women) popular in Iseyin, Egungun, Jigbo masquerades common in many Yoruba communities (Oluremi, 2006).

The advent of Islam in Yorubaland is very contentious. Islam first came to Yorubaland through Mali traders in13thcentury (Ilori, 1971) and was recognised and spread in 16th century in Oyo-Ile through the effort of immigrants from Nupe, Hausa, Mali and Arabs Muslims. Islam was spread and developed in early period through trade and trade routes, the effort of Itinerant Muslim traders and Immigrants, the support of some Yoruba Muslim Obas (kings) like Alaafin of Oyo also contributed immensely to the development of Islam (Doi, 1984). The innovations of celebration in almost all the activities of Muslims in Yorubaland by the scholars and preachers also attracted many non-Muslims and created steadfastness of the new believers.

Islam was developed and firmly rooted through establishment of Muslim organisations and *da´wah* groups that champion the Cause of Allah and provide solutions to educational, spiritual, economic and social challenges facing Muslims in Yorubaland (Doi, 1984) . The efforts of Ahmadiyyah Movement established around 1916 in Lagos, Ansar-Ud-Deen Society of Nigeria (1923), Nawair-Ud-Deen Society of Nigeria (1939), Muslim Students' Society of Nigeria (1954) and the likes cannot be downplayed in the development of Islam in Yorubaland (Oludaisi, 2015). Modern Islamic Institutions of learning were founded to produce man-power for primary and secondary schools established by the Muslim organisations especially in the area of Arabic and Islamic-Studies. Among these modern Arabic Institutions are:

(1) Markaz at-Ta'aleem Al-Arabi Al-Islami Agege in Lagos by Shaykh Adam Abdullah Al-Ilori in the year 1952.
(2) Mahdulal-Arabi, Elekuro, Ibadan by ShaykhMuritadha Abdus-Salam in the year 1957
(3) Al-Mahdu al-ArabiAt-Tabiu li Jam'iyyahtuMuhyideen, Ilorin by Fadilat Shaykh Abdullahi Jubril Imam Salban in the year 1962.
(4) Az-Zumuratul Al-Adabiyyah now Al-Azhar Institute of Arabic in Ilorin by Shaykh Kamaldeen Al-Adabi in the year 1930.
(5) Markaz Al-Ta'aleem Al-Arabi in Al-Kharashi in Ibadan, Oyo-State by ShaykhThanniKharashi in the year 1945.

(6) Daru Da'wah wal Irshād in Isolo, Lagos by late Shaykh Mustapha Zuglool Sanusi in the year 1980.

Muslim organisations that are Sunnah-oriented were also established with the aim of preaching unadulterated Islam and reviving the Sunnah in Yorubaland. Among these Sunnah-oriented organisations are: Bamidele Movement (Zumuratul- Mu'minuun), Islahudeen Society of Nigeria, Jama'atTebligh, The Muslim Congress (TMC), Organisation of TadamunulMuslimeen (OTM), and Jama'atTa'awunuMuslimeen.

These aforementioned *Sunnah*-oriented organisations are reviving *Sunnah* under the umbrella of *Ahlul-Sunnah wal Jama'ah.* The last three of these organisations are majorly founded by graduates of foreign Arab universities in Saudi-Arabia, Egypt, Kuwait, Sudan and so on.

Da'wah Principles and Methodologies in Islam

Da'wah is a word that simply means making an "invitation (Zubayr, 1998). Technically, it means inviting to the way of Allah (Islam) or calling to the oneness of Allah by submission to His Will to become a Muslim. Allah (SWT) says:

> "And who speaks better than he who calls to Allah while he himself does good, and says: I am surely of those who submit?" Q41:33

Da'wah as a concept in the religion of Allah has its principles, objectives, and pillars which must be followed to achieve the desired goal. So, the ultimate goal of *da'wah* is to worship Allah alone. This is the essence of creation of man and Messengership of the Prophets. Allah (SWT) says:

> "And I have not created the jinn and the men except that they should serve Me". Q 51:56

> "And We did not send before you any Messenger but We revealed to him that there is no god but Me, therefore serve Me". Q22:25

Objectives of _Da'wah_

There are many objectives of *da'wah* that a caller must focus upon to achieve the desired goal. One appeared to be integrated (*Mujmal*), while the other is detailed (*Mufassal*) in nature.

a. The integrated objectives (_Mujmal_): The objectives of *da'wah* in this nature revolve around two themes as stated by Yusuf in *Usul Al- da'wah* (Lateef, et al). They are:

I. **Calling non-Muslims to Islam:** This was the objective pursued by the Prophet Muhammad (SAW) for his twenty three years of his Prophethood. This means calling the non-Muslims like polytheist, Atheist (*kuffar*) to Islam. The objective of the Prophet (SAW) in this regard followed the command of Allah (SWT) in the Noble Qur'an:

> "And We have not sent you but as a mercy to the worlds".Q21:107

II. **Calling Muslims to goodness:** *Da'wah* also aims at Muslims who needs to gear up in enjoining virtues and prohibiting vices to serve as a reminder to become a better Muslim. Allah says:

> "And continue to remind, for surely the reminder profits the believers". Q51:55

b. The detailed (*Mufassal*): The objectives of *da'wah* in details are derived from the primary duties of the Messengers of Allah from Nuh to Muhammad (SAW). This is majorly purification, reformation, tutoring the individual and the society both spiritually and morally. Allah says:

> "He it is Who raised among the inhabitants of Mecca an Messenger from among themselves, who recites to them His communications and purifies them, and teaches them the Book and the Wisdom, although they were before certainly in clear error" Q62:2

Also, Badmos, (2022) said the above verses of the Qur'an and other verses summarily dictate the following objectives of *da'wah*:

i. *Tablighar-Risalah* (Conveying the message of Islam to Mankind)
ii. *Tadhkir* (Reminding people of their responsibilities to Allah and to other creatures of Allah)
iii. *Tazkiyyah* (Purification of the soul and reformation of the indvidual).
iv. *Indhār* (warning people of punishment of Allah as a result of rejection of the truth (disbelief)
v. *Tabshir* (giving glad tidings of reward and everlasting salvation (Al-Jannat) for the believers).
vi. *Al-Amrbil-Maᶜruf* (commanding righteousness through invitation to it and practical implementation of it).
vii. *An-Nahyuanil-Munkar* (Forbidding evil, wrong doings and all that are prohibited).
viii. Establishing justice and equality to all mankind.
ix. Establishing evidences against man, so that no one will have any excuse for disbelief.
x. Dialoging with non-Muslims with a view to inviting them to Islam.
xi. Establishing an Islamic government which implements the law of Islam.
xii. Assisting people in worshipping Allah according to the way He ordained and practiced by the Prophet (SAW) and his companions.

Pillars of *Da'wah*

The pillars of *da'wah* are the major components that make up the exercise of *da'wah* which are essentially three according to some writers, while Lafiagi (2022) cited Yusuf in *Usul Al-da'wah* listed four:

a. The subject of *da'wah* (*Mawduᶜu ad-da'wah*)
b. The caller (*Dāᶜiyah*)
c. The called (*Al-Maḍᶜuwwu*) or the recipient of *da'wah*
d. *Da'wah* methodology/ approach (*Manhaj*)

a. The subject of *Da'wah*:

This is Islam. The calling of the Prophet (SAW) is an invitation to Islam which the followers also continue till today. Allah (SWT) says:

> "And from among you there should be a party who invite to good and enjoin what is right and forbid the wrong, and these it is that shall be successful". Q3:104

b. *Dāᶜiyah* (The caller)

The Arabic *Dāᶜi* or *Dāᶜiyah* literally means the one who calls or invites to something important. An erudite scholar Al-Ilori defines a *Dāᶜiyah* as "The one who regularly engages in calling to Allah". This definition can be used to differentiate that a *Dāᶜi* can be a general Muslim who calls to path of Allah while a *Dāᶜiyah* is a specialist who constantly devoted his life to the work of *da'wah* based on the insight gifted to him by Almighty. Hence, all Muslims ought to be *Dāᶜi* but not all Muslims would be *Dāᶜiyah*. Allah (SWT) says in regards to *Dāᶜiyah*: "Say: This is my way; I inviteunto Allah with sure knowledge, I and whosoever follows me." Q13:108.

Therefore, a *Dāᶜiyah*must be have scholastic and moral qualifications.Infact it is imperative to have both qualifications at excellent degree.Generally, the morals that characterised a *Dāᶜiyah* must include his spiritual morals such as sincerity, forgiveness, kindness and verbal morals such as leniency in speech, talk less, avoid use of abuse insult and hate speech. The *hadith* transmitted by IbnHibbān and graded to be *Sahih*. He (SAW) said: "If a man insults you and disparages you for what he knows about you, do not disparage him for what you know about him. Verily, the penalty will only be against him. (Ibn Hibban and Abu-Dawud)

c. The Madᶜuwwu (The audience): The third pillar of *da'wah* is the recipient of *Dāᶜiyah*. The audience may be Muslims or non-Muslims. This is the general category of the audience according to the Noble Qur'an. However, specialists in the field of *da'wah* in our contemporary era did the categorisation of the recipients based on *Ummah*(Nation), Religion and Society. Al-Ruhayli categorised the recipients of *da'wah Ummah* into two, namely:

a. ***Ummat Ad- Da'wah:*** This involves everybody that the Prophet (SAW) was sent to, irrespective of the colour, race or language, as well as jinn and all mankind.

b. ***Ummat Al-Ijabah:*** These are the followers of the Prophet (SAW) who accepted Islam and practise it. The Muslims.

Considering different categories of the recipients of *da'wah* and different societies of Multi-cultural background of the recipients; according to scholars of *da'wah* it becomes imperative for a *Dāᶜiyah* to understand his recipients and the society (Badmus, 2022). The methodology tools used in one society, or toward an audience might be vary in another place. Failure to consider this particular factor is considered among the major challenges of *Salafiyyah Da'wah* generally and Yorubaland in particular.

d. *Da'wah* Methodology

The fourth pillar of *Da'wah* is the methodology used in disseminating the message of Allah. This is the subject of study in this research. Technically, it sometimes referred to as *Usulub Da'wah* or *Manhaj Da 'wah* (*Da'wah* Approach). *Manhaj Da'wah* is the path of *Da'wah.* Hindawi, (2006) defined it as

the explanation of methodology of *da'wah* by learning it through the Noble Book (*Al*-Qur'an) and expository of its principles through the tradition of the Prophet (SAW) in which the companions (*Sahabah*) and those that follow them in good deeds till the last day followed. *Manhaj da'wah* is the methodology of calling to Islam learned from the Qur'an, *Sunnah* and the practices of the companions and those that follow them (*tabiᶜin*) in good deeds till the last day. This is an honorable

path followed by the Prophet (SAW) in his mission, the *Muhajirun* (Emigrants), the *Ansar* (Helpers) and generality of the Muslims that followed them in good deeds; Allah (SWT) has approved this path or methodology and pleased with their way of life. The Noble Qur'an says: "And (as for) the foremost, the first of the Muhajirs and the Ansars, and those who followed them in goodness, Allah is well pleased with them and they are well pleased with Him, and He has prepared for them gardens beneath which rivers flow, to abide in them forever; that is the mighty achievement". Q9:100.

Also in Suratu Yusuf, Allah (SWT) says:"Say: This is my way: I call to Allah, I and those who follow me being certain, and glory be to Allah, and I am not one of the polytheists". Q12:108. Also, Allah (SWT) says: "Call to the way of your Lord with wisdom and goodly exhortation, and have disputations with them in the best manner; surely your Lord best knows those who go astray from His path, and He knows best those who follow the right way". Q16:125.

In the aforementioned two verses, the word "path" is mentioned to mean the path of calling to Islam (*da'wah*) and the principles guiding the calling. This is nothing but *Manhaj da'wah* which a *Da'i* must comprehend extensively. The path *da'wah* is the path of the Prophet (SAW) and the believers in a general term. Any additional name given to this path does not matter, so far the principles and the conditions are observed. Whoever goes against this path of *da' wah*, the path of early believers has surely gone astray. Allah (SWT) says:

> "And whoever acts hostilely to the Messenger after that guidance has become manifest to him, and follows other than the way of the believers, We will turn him to that to which he has (himself) turned and make him enter hell; and it is an evil resort". Q4:115

Manhaj Ad-Da'wah Al-Islamiyyah can be referred to as *Da'wah* methodology; *Da'wah* approach in a technical term in which the sources are from Qur'an, *Sunnah* and practices of the pious predecessors (*Salaf Salihun*), which the intellectual processes are not limited to individual, time and place till a target goal is achieved. Hindawi, (2006) said intellectual mind to implement *da'wah* and its approaches should not be limited to person or persons nor be restricted to environment and generation. However, the fundamental principles of *da'wah* as practiced by the Prophet (SAW) should not be tampered with to achieve a desirable objectives. Lafiagi (2019) mentioned some of these objectives as:

i. *Al-Hikmah* (wisdom i.e. divine revelation, intelligence etc.)
ii. *Al-Mawidhah al-Hasanah* (beautiful or fair preaching)
iii. *Al-Mujâdallah al-Hasanah* (good or fair debate)
iv. *Al-Targhibwat-Tarhib* (exhortation and intimidation)
v. *Al-wasatiyyah* (moderation both in speech and in action)
vi. *Ar-Rifqwaar-Rahmah* (leniency and compassion)

Salafiyyah Groups and their Methodologies in Yorubaland

The term *salafiyyah* is originated from the Arabic word: "*Salaf*". Literally, *Salaf* means predecessor, ancient and past (IbnMandhur, 2007). It further means 'whoever preceded you in terms of death among your fathers and relatives' and because of this, the first generation among the *Tabi'īn* referred to as *Salaf Salih* (Imarah, 2011). Imarah furher said, '*Salaf* is a golden period in which understanding, development, thought of Islam serve as a model before the emergence of sectarianists and schools of thought. According to Hindawi, (2006) "*Salafiyyah* is defined to mean a trend in *da´*

wah of *Al-Kitab* (Qur'an) and *Sunnah* with sound and pure religious practices; it also means following the path of believers among the good predecessors *(Salaf Sālih)* …" Hindawi further explained that *Salaf Sālih* are the companions of the Prophet (SAW), their followers in good deeds till the last day. He stressed that *salafiyyah* covers all Muslims that stand by the principles (of Islam) without limiting it to some sects or groups. Rather it is generally applying to all whether using the title *salafiyyah* or not.

In Yorubaland, all *salafiyyah* groups belong to main-stream of *Saudi-Salafi* movement otherwise referred to as *Salafiyyah Ta'alimiyyah* (Hassan, 2011). It is one of the global divisions of *salafiyyah* that focuses on learning, teaching and preaching as a means of reviving the lost glory of Islam. The group purely centered on doctrinal purification and religious education; so they also referred to them as purist (Asrau, 2023). However, other factions emerged from this group, the like of *Jami'yyah* of Shaykh Amaan Al-Jaamiy and *Madkhaliyyah* of Shaykh Rabi'u Al-Madkhali (Ibn Taofeeq, 2019). Although the word *Salafiyyah* has been in usage in Islamic history but it has been used as a movement or sect in Saudi Arabia until arrival of Shaykh Nasir-ud-deen al-Albani into the Kingdom (Arikewuyo, 2019). *Salafiyyah* was developed as a movement and sectarian group by Shaykh Rabi'u Al-Madkhali after the trial event of 1990 Iraqi-Kuwait gulf war (Ibn Taofeeq, 2019). This divisions and sectarianism within the fold of *Salafiyyah Ta'alimiyyah* extend to *salafiyyah da'wah* in Yorubaland as a result of which each group claims superiority in following the *Da'wah*-Methodology (*Manhaj-Salaf*) than the other. The assessment and unnecessary monitoring of agroup by the other led to tagging and accusing one another of excommunication (*Takfir*), innovation (*Tabd'i*), and infidelity (*Tafsiq*) etc.

Da'wah*-Methodology of *Salafiyyah* (*Manhaj-Salaf)

The *Da'wah*-Methodology of *Salafiyyah* globally is conservatively derived from the understanding of the first three generations of this *Ummah* (nation) popularly referred to as *Salaf-Saliheen* (pious-predecessors). These early pious predecessors are the companions (*Sahabah*) of the Prophet (SAW), the followers (*Tabi'un)* and the followers of the followers (*Tabi'-tabi'un).* They are considered to be best generations according to these *Ahadith:*

"Narrated by 'Abdullah bnMas'ud who said: the Apostle of Allah was asked about the best set of people? The Apostle replied: "My generation, followed by those who followed them and those who also followed their followers" (Bukhari).

Narrated by Wathilah who reported the Prophet as saying: You shall remain upon good provided that there are among you those who saw and accompanied me. I take oath with Allah, you shall remain upon good provided that there are among you those who saw those who saw me and accompanied those who accompanied me." (ibn Abi-Shaybah).

The contemporary scholars of *salafiyyah* have laid down principles and pillars that guided the implementation of *Manhaj Salaf.* These principles are also referred as *Usuul Sunnah* (the fundamentals of *Sunnah*). It makes the *Manhaj* to be limited in scope and comprehensive in understanding. Bakru, (2011) mentioned four pillars which Hilmi, (2010) compressed to three pillars. These are:

i. References from *Al*-Qur'an and *Sunnah*
ii. Preference of text (*Naql*) upon intellect (*Aql*)
iii. Rejection of verbal interpretation

iv. Strict Adherence to the understanding of the companions

Approach of *Salafiyyah* to *Aqeedatul Islamiyyah*

ᶜAqeedatul Islamiyyah (Islamic creeds) can be referred to theology in English terminology. It is considered the foundation of the religion (*Usul ad-Din*) and ideological identity for the Muslims (IbnTaofeeq, 2019) Therefore, issue of theology is highly placed and can be responsible for the sectarian difference in Islam. Generally, the Muslim theologians categorised the Muslim in this area into two: The *Ahlus-Sunnah wal Jama'ah* (people of tradition and cohesion) and the *Ahl al-Hawâ wal bid'ah* (people of whims and heresies). The first group involved the *Muhaddithun, Ashâ'irah* and *Maturidiyyah* that hold theology school of Islam held by the first generation of Muslim. The second groups are the *Mu'tazilah, Murji'ah, Jahmiyyah, Shi'ah, Qadariyyah, Jabariyyah* and *Khawaraji*; which are considered to be heretic scholars in Islam. The latter group do differ within themselves on many theological issues and declared one another as disbelievers while the former does not declare one another as unbelievers because of little differences in the area of theology; this is why they are also referred to as people of cohesion (*Al-Jama'ah*). However, not all *Muhaddithun* accepted *Ashâ'irah* and *Mâturidiyyah* as *Ahlus-Sunnah* because of using philosophical weapon to define the orthodox creeds. Scholars like ibn *Taymiyyah* still accepted *Ashâ'irah* and *Maturidiyyah* as *Ahlus-Sunnah* in proximity.

The current *salafiyyah groups* in Yorubaland maintain the '*Aqeedah* of the first group which stands on the theology of *Ahlus-Sunnah wal Jama'ah.* They give more attention to creeds and theology issues through regular weekly (*Halaqaat*) programme and published works. However, some do go in opposition to other *Sunni da'wah* groups. In fact, it becomes obvious as if these *Sunni Da'wah* groups are rivals. They refer to them as *ikhwani* oriented organisations and pointed accusing fingers to their creeds. These *Sunni da'wah* organisations include *Tadamunal Muslimeen* The Muslim Congress (TMC), *Ta'awunul Muslimeen* and the likes. One of these *salafiyyah groups* (*Jabatiyyah*) declared them as unbelievers based on her assessment as regard to *ᶜAqeedah.* At later time, they fault themselves within the same circle of *salafiyyah* and declare one another as innovators. The bone of contention between these *da'wah* fronts is more political than methodology (approach) when deeply researched upon. This is because the *da'wah* of the Muslim brotherhood (*Ikhwanul Muslimeen*) been opposed now has been established early in the Kingdom of Saudi Arabia before the recent political ban in Saudi Arabia.

Approach to Condemnation and Innovation (*Bidᶜah*)

The approach of Islam in commanding good and forbidden the evil is very conspicuous in the Qur'an and the traditions of the Prophet (SAW). Therefore, condemning what is wrong in Islam should be with wisdom as Almighty Allah (SWT) says:

> Call to the way of your Lord with wisdom and goodly exhortation, and have disputations with them in the best manner; surely your Lord best knows those who go astray from His path, and He knows best those who follow the right way.Q16:125

The use of wisdom in disapproving some issues in Islam is highly necessary in the approach of *salafiyyah da'wah* in Yorubaland. The situation was regrettable some years back as if Islam does not have anything to preach against than condemnation. Most of these issues are subject to juristic

opinions in *Shari'ah*. The establishment of *da´wah* organisations was condemned with the popular slogan of "*La Jama'ah*" "Say no to organisation". The recitation of daily *Adhkãr,* use of rosary, saying opening prayer, event of *Walimatul*- Qur'an (*Quranic* graduation) are some of the issues that attract serious condemnation from the fold of *salafiyyah groups* in Yorubaland. The origin of excessive condemnation in *salafiyyah* is not based on '*Amr bil ma*^{c}*ruf*' (to command what is good) *Wa Nahy* ^{c}*anil Munkar* (forbid what is wrong) but rather relied on the principle of science of *hadith* called *Al-jarhuwa Ta*^{c}*deel* ***الجرح والتعديل***. This means discrediting the narrators of *hadith*. It is one of the principles used by scholars of *hadith* to condemn or confirm the integrity of narrators of *hadith.* This principle was never in use in the history of Islam except in the area of science of *hadith* until recent time when *salafiyyah* scholars started using it against one another in the kingdom of Saudi Arabia. One of the leading scholars of *salafiyyah* Shaykh Sālih Fawzaan supported the aforementioned assertion in Youtube video clip, thus:

> There are no scholars of *Jarhu wa Ta*^{c}*deel*(discrediting and authenticating) in this our century. Scholars of *Jarhu* and *Ta*^{c}*deel*are all dead and now in the graves. Only their words can be found in the books of *Jarhu wa Ta*^{c}*deel.* The knowledge of *Jarhu wa Ta*^{c}*deel* is in authentication and reliability of the of the chain of narration and the meaning of *Jarhu wa Ta*^{c}*deel*is not abusing, blackmailing and ridiculing people. There is so in a person, he has some heretic actions, praising some people and castigating others, this is a form of *Geebah* and *Nammemah* (backbiting and slandering), and this is not the meaning of *Jarhuwa Ta*^{c}*deel.*

In Yorubaland, two groups of *salafiyyah* are fanatical in their approach on issue of *bid'ah*. The *Madkhaliyyah* and *Takfiriyyah* groups, mainly go extreme because of their understanding on definition of *bid'ah.* Also dogmatic followership of sectarian idealogy of Shaykh Rabi'u Al-Madkhali contributed immensely to their extremism. According to Ibn Taofeeq, (2019) the following statements are parts of *Madkhaliyyah* innovated principles that are wrongfully attributed to *Manhaj-Salaf:*

> "Whoever does not consider a heretic heretic, such person is also heretic".
> "Everyone who falls into *bid*^{c}*ah* is a heretic"
> "Everyone who praises a *Mubtadee*^{c} is automatically a heretic"
> "Everyone who sits and amalgamates with a *Mubtadee*^{c}is one of them (heretic)".

Approach to *Takfir*:

Takfir is a term commonly used to declare a known Muslim as unbeliever that is out of fold of Islam. It denotes excommunication from Islam of one Muslim by another. So the word *Takfir* was first introduced in usage by the *Khawarij* after the intra-battle between Caliph Ali and Mu^{c}awiyya. The legal implication of *Takfir* on a Muslim is to neglect him of some rights like right to inheritance,

right to Islamic bond as family, being a *waliy* (guidance), sanctity of blood and many other rights dictated by the *Shari*^{c}*ah*.

Despite the unanimous of the Muslims over the permission of *takfir*; they however lay clear principles that must have been breached before the declaration on a Muslim. Therefore, much caution is exercised on the declaration of *takfir* as the gravity and implication are unbearable to the accuser.

In Nigeria, particularly Yoruba speaking territories, the champions of *takfir* is Ustaz Muhammad Ali Jabata an indigene of Ilorin that also lived in Ilorin, Kwara state of Nigeria. It is not hidden to any conscious Muslims the *takfir* ideology of the Ustaz Jabata in any part of Yorubaland. He has declared many *salafiyyah* scholars in Nigeria as unbelievers and heretics as well as non-*salaf* scholars. It is commendable to say all Muslim scholars *salafi* and Non-*salafi* condemned his approach of *da'wah*. Good admonition and methodologies are used to bring him back to the pristine *da'wah* methodology of *Ahlus-Sunnahwal-Jama*^{c}*ah*. The effort made notable companions of Jabata to left the *takfir* group and join other Muslim *salafiyyah groups* who are moderate or fall along the *Madkhaliyyah* group.
It is apparent that *salafiyyah da'wah* cannot be exonerated from promoting *takfir* group; but such radical group are condemned and disassociated from the fold of *salafiyyah* globally.

Method
The methodology used is qualitative approach, which integrated both the use of library resources for data collection. Books that are written by notable *salafi* and non-*salafi* scholars are used to carry out the research.

Findings
The research revealed the following findings:

1. *Salafiyyah da'wah* groups in Yorubaland belong to *Salafiyyah Ta'alimiyyah* of main-stream of Saudi-Arabia.
2. In Yorubaland, *Salafiyyah Ta'alimiyyah* can be majorly categorized into three groups: *Takfiriyyah/Jabatiyyah*, which is more rigid in excommunication practices; *Madkhaliyyah*, which closely aligns with Saudi Arabian doctrines; and *Dakatirah*, a moderate faction tolerant of other Sunni groups.
3. *Takfiriyyah/Jabatiyyah* group is not in-line with principles of *da'wah*; and the *da'wah* methodology is too extreme and go against the pillars of *Manhaj-Salaf* globally. According to the ideology of the group, all other dawah groups of *salafiyyah* are not on the right path. Hence they are either innovators or unbelievers.
4. *Madkhaliyyah* group are known for dogmatic followership, inconsistence implementation of *Manhaj-Salaf*. This leads the group to sectarian divisions within the group. However, few members are moderate in their methodology.
5. *Dakatirah* group belongs mainly to university academicians who are moderate and more in-line with the principles and methodology of *da'wah* rather than constructed *Manhaj-Salaf.*
6. Generally, *Salafiyyahda'wah* focuses on *UmmatulIjabah*(Muslims) rather than *UmmatudDawah(*Mankind*)*. This shows the influence of Saudi Arabia in the area of *da'wah*.
7. *Madkhaliyyah*group is highly influence with the political scenario of Saudi Arabia as famous leaders of the group work with the ministry of Islamic Affairs Saudi Arabia.

Recommendations

The research recommended the following:

1. The general title *Ahlus-Sunnawal-Jama'ah* should be adopted to reduce sectarianism and foster unity of the Muslims.
2. A balanced approach and moderate style of *da'wah* methodology should be embraced as dictated in the Qur'an (*Ummatan- Wasatan*).
3. Newly constructed *Manhaj-Salaf* should be avoided and embrace dawah principles that are practicable and sustainable.
4. Excessive use of the terms *Bid'ah* and *Takfir* should be minimized; and should only be used when the conditions attached with it
5. New researches in *da'wah* should focus on critical examination of newly constructed *Manhaj-Salaf*
6. Muslim community in alliance with the government should established regulatory body for *da'wah* activities in Yorubaland.

Conclusion

Da'wah methodology in Yorubaland needs principles and methods that can accommodate all Muslims irrespective of affiliation with one Muslim organization or the other. Only the moderate group (*Dakatirah)* of *salafiyyah*in Yorubaland is in-line with general principles of *da'wah* methodology. The newly constructed *Manhaj-Salaf* should not be regarded as rigid constitution rather a guide towards following the path of early predecessors (*Salaf-Saliheen*). Any precautional statement in *Manhaj-Salaf*that calls for disunity and sectarianism should be totally discarded as it against the brotherhood and peaceful co-existence of the Muslims.

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CONNECTING KNOWLEDGE AND VALUE: THE INTERPLAY BETWEEN EPISTEMOLOGY, AXIOLOGY, AND THEIR INTERCONNECTEDNESS IN EDUCATIONAL CONTEXTS

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Abstract
This paper explores the relationships between epistemology, axiology, and education in a logical order, highlighting their importance for teaching and learning in educational policy. For ages, many scholars and philosophers have sought to understand the relevance of epistemology and axiology, the two "sister" branches of philosophy, to education. It is widely acknowledged that both are related to education, as they are among the four core branches of philosophy. Philosophy of education is an application of philosophy to education. Education and epistemology deal with what we know and how we know it. Epistemology can be understood as the theory of knowledge, while axiology is the theory of values, which is the worth we give to a person, thing, idea, or event. Axiology is the general study of value and can be divided into ethics and aesthetics, both of which are closely related to education. Moreover, education is a lifelong process that embeds moral codes such as good, rights, and justice from birth to death. The analysis reveals that knowledge and values influence decision-making in education. Understanding their logical relationships can lead to effective and equitable education approaches. This research recommends that the intersection between epistemology and axiology can improve and shape educational theory and practice.

Keywords: Education, Epistemology, Axiology, Teaching, Learning, Ethics, Aesthetics.

Introduction

When considering a review of how Epistemology and Axiology relate to Education, it is essential to define the word "Education." The three concepts are interconnected and inseparable in meaning and understanding. However, the term "Education" is a general term that describes the totality of someone's experiences from birth to death. According to Oke and Oshodi (2000), *education is preparation for life. It is the acquisition of knowledge and skills that help individuals earn a livelihood and find a place in adult society*. Additionally, education is the sum total of processes by which a community or social group transmits its continuous existence and growth.

From these views, education helps individuals acquire knowledge, like Epistemology, since the mind of a newborn baby is 'Tabula-raza' (a clean slate), as postulated by John Locke. Axiology, a partner to Education, deals with multiple aspects, including value, ethical value, moral value,

aesthetical value, worth, behavioral value, and evaluation.

The realms of philosophy and education share a rich and intricate connection, shaping the foundations of how we understand knowledge, values, and ethics. Epistemology, the philosophical exploration of knowledge, and Axiology, the study of values and ethics, are two pillars that underpin this connection, offering insights into the essence of education. This discourse explores the relationship between Epistemology, Axiology, and Education, delving into how these philosophical inquiries shape educational objectives, curriculum, teaching methodologies, and moral dimensions. As we navigate this intellectual terrain, we will uncover the ways in which Epistemology and Axiology intersect with Education, ultimately forging a path towards a deeper comprehension of the interplay between philosophy and pedagogy.

Epistemology and Education

Epistemology, the branch of philosophy concerned with the nature and scope of knowledge, is inextricably linked with the field of education. It shapes the foundations of how we understand knowledge acquisition, teaching methodologies, and the essence of what we consider knowledge. At its core, epistemology delves into profound questions about knowledge: what it is, how it is acquired, how it can be justified, and how it is shared. These philosophical inquiries have a profound impact on educational theory and practice, weaving a complex tapestry between these two domains. The nature of knowledge, a central theme in epistemology, significantly influences educational objectives and frameworks. Educators grapple with fundamental questions such as what kinds of knowledge are valuable, how knowledge is defined in different academic disciplines, and how it can be measured and assessed.

Different epistemological perspectives inform our understanding of how learning occurs. Empiricism emphasizes sensory experience as the primary source of knowledge, while rationalism highlights the role of reason and innate ideas. These philosophical stances influence teaching methods and curriculum development, guiding how educators facilitate the transfer of knowledge to learners. Epistemology encourages critical thinking and the ability to question assumptions, skills that are paramount in education. Educators strive to instill in students the capacity to evaluate sources of information, recognize bias, and differentiate between opinion and empirical evidence. The reliability and validity of sources of knowledge are also subjects of epistemological inquiry, particularly relevant in the digital age.

Epistemological discussions extend to the cultivation of epistemic virtues such as curiosity, open-mindedness, and intellectual humility. Constructivism, an epistemological viewpoint, posits that knowledge is actively constructed by the learner rather than passively received. Social epistemology explores how knowledge is socially situated and influenced by communities and institutions. Epistemology extends to the ethics of knowledge, addressing the responsibility of educators to provide accurate information, promote critical thinking, and uphold intellectual integrity within the educational environment. The intersection between epistemology, education, and literature offers a deeper understanding of how literature serves as a conduit for examining intricate philosophical inquiries and promoting critical thinking in its audience.

In literature, epistemological questions regarding the nature of knowledge are often woven into the narrative fabric. Narrative perspectives in literature provide opportunities to explore diverse ways of knowing. Literature also fosters critical thinking by inviting readers to question assumptions,

evaluate characters' perspectives, and assess the reliability of information within the narrative. The act of reading often parallels the development of critical thinking skills advocated in educational contexts. Epistemic uncertainty frequently finds expression in fiction, prompting readers to consider the uncertainty and ambiguity surrounding characters' beliefs and knowledge. Intersexuality and literary references enrich the reading experience by connecting literary works with philosophical and educational texts. The relationship between epistemology, education, and literature is intricate and symbiotic. Literature serves as a unique avenue for exploring epistemological inquiries, promoting critical thinking, and reflecting on the nature of knowledge. Conversely, epistemological investigations enhance our understanding of how literature functions as a vehicle for philosophical exploration.

This interplay highlights the enduring and transformative power of literature as it engages with complex questions about what we know and how we come to know it, forging connections between philosophical inquiry, education, and the world of storytelling. In summary, the dynamic relationship between epistemology and education is a testament to the profound impact of philosophical inquiry on the realm of learning. Epistemology informs the fundamental principles of education, influencing what and how we teach, and how we assess and validate knowledge.

Axiology and Education

Axiology, derived from the Greek word "axioms," meaning "value" or "worth," is a crucial field of inquiry in educational philosophy. Education is essential for individuals to become valuable members of society. Values can be defined as worthwhile considerations that influence an individual's thoughts, actions, and interactions in socialization and interpersonal relationships. Value education focuses on fostering immersed values like humility, honesty, and responsibility in individuals. Axiological studies guide meaningful human actions and direct the formulation of educational aims and values.

Axiology plays a significant role in education, influencing the ethical and moral dimensions of the educational process. It assists in articulating educational values, prompting inquiries into what should be esteemed within the educational context. Axiology influences curriculum design, choice of teaching methods, and the cultivation of ethical values in learners. It also extends to considerations of which values and principles should be prioritized, such as knowledge acquisition, critical thinking, creativity, moral development, and social responsibility. Value education helps individuals think about their choices in terms of values framework or values clarification. This is essential for character development and moral values, laying the foundation for vital moral standards and development. Axiological insights profoundly influence the goals and objectives of education. Society's deeply held values shape the aspirations of education, steering it towards outcomes that reflect these values.

Curriculum design is deeply imbued with axiological considerations. The choice of subjects, topics, and instructional materials is influenced by the values deemed crucial for learners' intellectual and moral growth. Axiology extends its influence to moral and ethical education, shaping the curriculum and pedagogical approaches that aim to foster virtues, ethical reasoning, and empathy in students. Teaching methodologies are guided by axiological considerations, employing methods that align with the values educators aim to instill in students. Assessment and evaluation practices in education are also influenced by axiological principles, extending beyond cognitive skills to encompass ethical and moral development.

Axiology promotes the idea that education is a lifelong journey, encouraging individuals to continually evaluate their values, adapt to changing circumstances, and engage in ongoing moral and intellectual development. The interplay between axiology and education is fundamental, guiding the formulation of educational objectives, curriculum design, teaching methods, and ethical values cultivation. In conclusion, the relationship between axiology and education highlights the importance of fostering ethical and moral development in individuals as they navigate the complexities of the world and contribute positively to society. This connection underscores the significance of axiology in shaping the goals, content, and ethical development within education.

Epistemology, Axiology and Education

Epistemology, Axiology, and Education are interconnected; they are inextricably linked. You cannot discuss one without referencing the other two. When you claim to know something, what is it that you know? Who taught you to know it? What values should you acquire or inculcate into your life? M.A. Ayeni (2018) argues that *teachers in the classroom impart various types of knowledge according to their disciplines*. It is essential for teachers to understand the types of knowledge they impart on learners. In educational settings, students come to school to learn essential things that will make them valuable in life and enable them to prove their worth in society. Teachers should be evaluated to determine if they are capable of instilling values or moral codes in the learners they teach.

Furthermore, Ayeni (2018) emphasizes that *teachers should be aware of the "ways of knowing" in their particular subject*. This awareness is crucial for effective teaching and learning. By recognizing the interconnectedness of epistemology, axiology, and education, we can foster a deeper understanding of the complex relationships between knowledge, values, and education. In essence, epistemology (the study of knowledge), axiology (the study of values), and education are intertwined. Teachers play a vital role in imparting knowledge and values to learners. They should be mindful of the types of knowledge they teach and the values they instill in their students. By doing so, they can help learners become valuable members of society.

The interplay between Epistemology, Axiology and their Interconnectedness in Educational Contexts

In the process of educating, the interplay between epistemology and axiology shapes the provision of teaching and learning. Epistemology generally influences how one understands knowledge, and the contents of education shape values, hence constructing knowledge. This is based on the fact that epistemology deals with the question of truth and endeavors to investigate how knowledge can be acquired. One may comment that epistemology raises questions about the nature of truth, whether subjective or objective, in the process of learning. In the area of axiology in education, education is meant to address and examine the roles of values, ethics, and aesthetics in human life. This is achievable through the solidification of morals in the council of educating. One may contend that axiology informs epistemology because our values and beliefs influence the policy of education. This is why understanding the interplay between epistemology and axiology is essential in solidifying critical thinking and integrative approaches to education.

In light of the interconnectedness between knowledge, values, and education, there exists a process that needs to understand the specific dynamics and their combined implications. Education values influence and intersect to shape society's attitude, behavior, and vulnerability, ultimately shaping the society for better or worse.

Conclusion

In the tapestry of education, the threads of epistemology and axiology are interwoven, creating a rich and dynamic fabric that shapes not only what we teach but also why we teach it. Epistemology provides the foundation for our understanding of knowledge, guiding the pursuit of truth and critical thinking, while axiology furnishes the moral compass that directs education towards the cultivation of values and ethical principles. Together, these philosophical inquiries serve as guiding stars, illuminating the path of education and instilling in learners not just knowledge, but also the capacity for discernment, ethical reasoning, and a deep appreciation for the values thatunderpin a just and compassionate society. As we continue to explore the intricate relationship between epistemology, axiology, and education, we uncover the enduring relevance of philosophy in shaping the minds and hearts of those who seek knowledgeand wisdom.

Recommendation

Therefore, we recommend that epistemology and axiology be integrated into educational policy to promote value-based education. This integration can foster critical thinking, enhancing the achievement of good educational goals and objectives. In the area of curriculum design, developers can incorporate multiple epistemological approaches to produce functional education that fosters critical thinking and problem-solving skills. To achieve this, educators can establish collaborative networks to foster partnerships between educators, researchers, and policymakers. These partnerships can advance epistemology-axiology education research, leading to a more comprehensive and effective approach to education.

Additionally, educators can utilize several teaching methods to promote epistemology-axiology education, including:

- Incorporating diverse perspectives and epistemological approaches into curriculum design.
- Encouraging critical thinking and problem-solving skills through inquiry-based learning.
- Fostering collaborative learning environments that promote dialogue and exchange of ideas.
- Encouraging reflection and metacognition to develop epistemic awareness and responsibility

By integrating epistemology and axiology into educational policy and practice, we can promote a more inclusive, critically informed, and value-based approach to education.

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