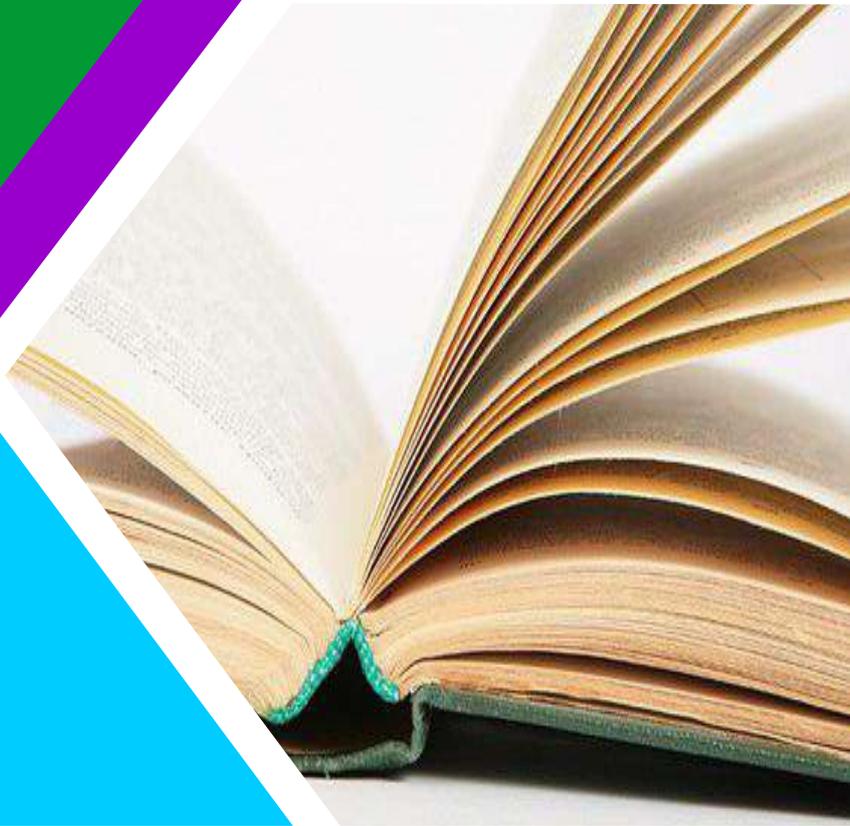


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The aim and scope of the journal is to provide an academic medium and an important reference for the advancement and dissemination of information that supports high level learning, teaching and research in the fields of Education.

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The Board wish to also acknowledge the efforts of the editorial members, for their ceaseless support towards successful publication of the journal. In the same vein, we acknowledge quite sincerely the assistance and support of our esteemed consulting editors for ensuring the credibility of this edition. Also, worthy of appreciation are the Authors and their immense contributions to this publication.

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The Zamfara International Journal of Education (ZIJE) calls for scholarly articles for review and possible publication in its next edition (Volume 5, Number 6), ZIJE publishes articles that emphasizes on research development and application within the fields of Education. All manuscripts are reviewed by editorial review committee. Contributions must be original, not previously or simultaneously published elsewhere, and are critically reviewed before they are published. Papers, which must be written in English language, should have good grammar and proper terminologies. Hence, prospective articles are subjected to plagiarism assessment test to estimate the percentage of originality of the papers. Hence, Plagiarism threshold of $\leq 20\%$ is recommended.

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Professor Abubakar Sadiq Haruna

Publication Editor



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Assessment of School-Based Management Committees on Administration of Post Basic Schools in Nassarawa Educational Zone of Kano State, Nigeria

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Abstract

The study investigates the 'Assessment of School-Based Management Committees (SBMCs) on Administration of Post Basic Schools in Nassarawa Educational Zone of Kano State, Nigeria'. The specific objective of the study was to investigate the impact of SBMCs participation in administration of post basic schools in Nassarawa Educational Zone of Kano State. Using a quantitative approach, the study surveyed a total of 198 respondents, that constituted the purposely selected eleven (11) Schools derived from the eleven (11) wards of Nassarawa local government. Data for the study was collected using researcher made questionnaire. The data collected was analyzed using descriptive statistics. Findings reveal that where functional SBMCs existed, they significantly improved administration particularly in areas of school decision-making, infrastructure development and resource mobilization. Nevertheless, some challenges continue to hinder the existing functional committees from achieving their full objectives. The study identified inadequate engagement of community members in the schools' administration, poor communication within and outside committees, insufficient resources and sources of funds among others. Based on the research findings, the study recommended that both state and local governments should ensure that each school has a functional SBMC in operation. The governments at all levels should try to strengthen SBMCs relationship with the school principals, as well as the local education authorities. Government should provide capacity building training for the members especially on resource management and allocation, as well as on advocacy to build partnership with NGOs, Local Education Authorities and other community-based organizations (CBOs) to improve their Effectiveness.

Keywords: Educational Administration, School-Based Management Committee, Community Participation and Post-Basic Schools

Background of the Study

Humanity and Education are like two side of the same coin. They are not only inseparable but complement one another. The children of a community in which schools are established constituted the schools' population. Therefore, if members of the community are engaged in running the school activities they can contribute immensely towards the growth and development of such schools. Thus, to arrive at the successful attainment of an inclusive process of basic education administration and management, all stakeholders in basic education schools have to participate in their respective School Based Management Committees SBMCs. Understanding the importance of community participation in educational institutions, made the Federal Government of Nigeria, (2004) to declared in its National Policy on Education that the administrative machinery will be based on effective line of communication between local community and the state on the other hand, and National machinery for policy and implementation on the other hand. Eze & Nwanko, (2018) pinned that They (teachers) contribute their expertise and experience to decision-making processes related to curriculum development, teaching methodologies, students' assessment and professional development opportunities. Tshabalala, (2006), pinned that community participation is one of the key factors to determine the success of schools' effectiveness. Ememe, (2014) believed that, setting up a proper functioning of SBMC is very central to the attainment of an all-inclusive process of basic education administration and management and the successful implementation of the Universal Basic Programme in Nigeria. Iyamu and Aduwa, (2004) opined that a school could be regarded as effective if its students exhibit proficiency in reading, writing and computational skills, practical and vocational skills, exhibit the desire level of knowledge in the



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curriculum, and perform good in their examination. According to Anyanwu, (2020) parents and guardians are crucial stakeholders in the School Based Management Committees SBMC for enhanced governance of public senior secondary schools in Rivers State. However, one prominent issue is lack of clarity regarding the roles and responsibilities the SBMC members (Ogundele, 2022). He argued that ambiguity in delineating duties can lead to confusion and inefficiency in decision-making processes, hampering the overall governance structure of the schools.

The National Council on Education (NCE) mandated all basic education schools in Nigeria to set up a school-based management committee (SBMC) comprising of adults and youths to assist in both planning and management of the school and provide a conducive environment to the local community where the school is located (UNICEF/FME, 2005). Though SBMCs were established virtually in all schools only a few were reported to have operated effectively (UNICEF, 2012). This could be as a result of unclear roles and responsibilities among School Based Management Committee (SBMC) members that present a significant challenge in enhancing governance within public senior secondary schools (Akpomi, 2022). However, some related studies have reported relatively progress made by few SBMCs in Nigeria (Pinnock, 2012; UNICEF, 2012). In Nigeria, Education has been receiving inadequate support from both the governments and members of the communities in which the schools are established. Hence, the schools continue to face several problems such as inadequate funding, poor or low community involvement especially in decision making, poor or inadequate infrastructure, high rate of students' dropout from schools, as well as students' poor academic performance. Globally, the world has been calling for quality assurance delivery in educational system. Such demand led to the formation of School Based Management Committees (SBMCs) in many countries in the world. For instance, similar committees were instituted in Australia, United Kingdom and Canada, Hong Kong (China) in response to the call made for educational reforms process (Anukum Okunamiri and Ogbonna, 2010). In Nigeria, the National Council of Education (NCE) inaugurated SBMC policy in the year 2006. The committee shall consist of 12 to 19 members, which among others include traditional leaders, members of civil society organizations, members of (PTA) parent-teacher associations, youth organizations, schools' old-boys associations, and faith-based organizations etc. The committees consist of 6 to 7 female (about 42%) as part of the total population. The NCE, directed all schools to establish such committees, to ensure enabling environment for the participation of members of the local communities in the management of the basic and post basic schools in all the states. This helps to decentralize authority from the government to other relevant stakeholders particularly concerning enhancing education-quality-assurance delivery at the level of community. The members tenure, range from one (1) to two (2) years, while its meeting is usually twice in a term (Ayeni and Ibukun, 2013).

Thus, the establishment of SBMCs in Nigeria, was aimed at allowing the individual persons to partake in managing the school resources, mobilizing community support, enhancing parental involvement, and improving the general schools' administration. But the SBMC members often require training on various aspects of the school management, including financial management, conflict resolution, and policy implementation. Despite the importance of SBMCs' participation in the improvement of post basic public education schools in Nigeria, there is not enough research study conducted that investigate on the effectiveness of SBMCs' participation in enhancing administration in Post Basic Public Education schools. Hence, this study intends to investigate the effectiveness of SBMCs' participation in administration of Post Basic Public Education Schools in Nassarawa Educational Zone in Kano State, Nigeria. The study specifically aimed to identify the factors that influence SBMCs' effectiveness in the administration of post basic education schools, and examine the several challenges facing the educational community participation committees termed as (SBMCs) in enhancing schools' administration.

Statement of the Research Problem

School-Based Management Committees (SBMCs) were established in Nigeria to promote effective community involvement in school management particularly in the education decision-making processes. However, the same problem of lack of involvement of community members in the administration of post basic schools continue. This was postulated by UNICEF, (2012) that, though SBMCs were established virtually in all schools only a few were reported to have operated effectively. Therefore, the same ineffectiveness of community participation in management and decision-making processes continue in post basic schools. Tshabalala, (2006), pinned that community participation is one of the key factors to determine the success of schools' effectiveness. Ogundele, (2022) argue that, one prominent problem is lack of clarity



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regarding the roles and responsibilities of the SBMC member. Which, resulted to inadequate provision of instructional materials, poor decision-making, poor students' academic performance, limited resource mobilization and utilization, as well as inadequate infrastructure development in post basic school activities. The study intends to Investigate the 'Assessment of SBMCs on the Administration of Post Basic Schools in Nassarawa Educational Zone of Kano State, Nigeria'. Where specifically it aims to identify the factors that influence SBMCs' effectiveness in the administration of post basic schools, and examine the several challenges facing the SBMCs participation in enhancing administration in Nassarawa Educational Zone of Kano State, Nigeria.

Objectives of the Study

The specific objectives of the study are;

1. To assess the Effectiveness of school-based management committees (SBMCs) in enhancing administration in post basic public education schools in Nassarawa Educational Zone, Kano State.
2. To identify the Challenges faced by SBMCs in enhancing administration in post basic public education schools in Nassarawa Educational Zone, Kano State.
3. To explore the Perceptions of stakeholders such as teachers, parents, community leaders, and other members of the SBMCs on community participation in administration of post basic public education schools in Nassarawa Educational Zone, Kano State.
4. To provide Strategies for improving the effectiveness of SBMCs in enhancing administration in Post Basic Public Education Schools in Nassarawa Educational zone, Kano State.

Research Questions

- RQ₁. How effective are school-based management committees (SBMCs) in enhancing administration in post basic public education schools in Nassarawa Educational Zone, Kano State?
- RQ₂. What challenges do SBMCs face in promoting administration in post basic public education schools in Nassarawa Educational Zone, Kano State?
- RQ₃. What are the perceptions of stakeholders such as teachers, parents, community leaders, and other members of the SBMCs on community participation in administration of post basic public education schools in Nassarawa Educational Zone, Kano State?
- RQ₄. What strategies can be implemented to improve the effectiveness of SBMCs in enhancing administration of post basic public education schools in Nassarawa Educational Zone, Kano State?

Methodology

Survey research design was employed in the study. The population of the study, comprises all the 18 constituent members of the SBMCs in the eleven (11) selected schools in the educational zone which constituted (a total of one hundred and ninety-eight (198) respondents in Nassarawa Educational Zone of Kano State. The sample size of the study population (198) consists each of the SBMC members drawn from the 11 selected post basic schools in the Educational Zone. The educational Zone has a total number of twenty-six (26) post basic schools, out of which seventeen (17) are Government Girls while, nine (9) are Government Boys. Random sampling technique was employed in the selection of the eleven (11) post basic schools. Whereby one (1) school is selected in each of the eleven wards randomly from the Educational Zone. A self-designed questionnaire with 20 items was used for data collection. The questionnaire was titled "Assessment of School-Based Management Committees on Administration of Post Basic Schools in Nassarawa Educational Zone". The questionnaire was structured in a modified five-point likert rating scale. The validity of the instrument was established by experts in Sa'adatu Rimi College of Education, Kumbotso. The reliability of the instrument used was obtained using Cronbach's Alpha Reliability Test with a sample of 36 respondents drawn from two different schools (GGASS Kawaji and GSSIS Dakata), in Nassarawa Educational Zone. The reliability coefficient of the instrument is 0.75. The research instrument was administered by the Co-PI (Assistant Principal Investigator), with the help of one teacher that assisted in each of the eleven (11) selected schools in Nassarawa Educational Zone. The analysis of the '198' retrieved questionnaires was carried out with the help of statistical package for social sciences (SPSS). Of which, mean and standard deviation was employed in analyzing the data.



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Presentation of Results

The results of the study are presented in line with the research objectives using descriptive statistics. Frequency counts and percentages were employed to show the distribution of responses, while mean scores were used to determine the central tendency of items measured on the Likert scale having a mean score ≥ 3.50 indicating that the respondents generally agreed with the statement. The results are presented in tabular form for clarity which was followed by an interpretation of the findings.

Answers to the Research Questions

Research Question I: How Effective are SBMCs in enhancing Administration in post basic education schools in Nassarawa Educational Zone, Kano State?

Table 1: Effectiveness of SBMCs in enhancing Administration in post basic education schools in Nassarawa Educational Zone.

Item Statements	SA		A		UD		DA		SD		Mean Scores
	F	%	F	%	F	%	F	%	F	%	
1. There is enough provision of instructional materials (textbooks, chairs and desks, and computers) in our secondary school due to SBMC roles.	07	4	35	18	25	13	74	37	57	29	2.298
2. SBMC is participating effectively in decision-making process that benefit the school.	07	4	37	19	28	14	68	34	58	29	2.429
3. Teachers provide enough support to help students achieve their respective academic goals.	15	7.6	69	35	37	19	50	25	21	11	2.974
4. There is adequate parental involvement in most of our respective secondary schools.	01	0.5	29	15	33	17	59	30	76	38	2.090
5. Students feel safe and secure in our secondary school due to the roles play by SBMC.	09	4.5	53	27	38	19	69	35	29	15	2.914

The above table provide computed responses on the effectiveness of SBMCs in enhancing Administration in post basic education schools in Nassarawa Educational Zone, Kano State. From the table, computed responses shows that the school-based management committees (SBMCs) were perceived as minimally effective in enhancing school administration across key dimensions. Specifically, the provision of instructional materials ($M = 2.298$) and parental involvement ($M = 2.090$) both fall well below the neutral threshold of 3.0, indicating general disagreement among respondents regarding SBMCs' effectiveness in these areas. Similarly, SBMC participation in decision-making processes ($M = 2.429$) and perceptions of students' safety due to SBMC activities ($M = 2.914$) were rated low. Teacher support for students ($M = 2.974$) was rated close to neutral, suggesting a relatively stronger but still insufficient performance. These findings collectively imply that SBMCs have not yet achieved substantial influence in driving positive administrative outcomes.

Research Question II: What Challenges do SBMCs face in promoting Administration in post basic education schools in Nassarawa Educational Zone, Kano State?

Table II: Challenges face by SBMCs in promoting administration in post basic education schools in Nassarawa Educational Zone.

Items statement	SA		A		UD		DA		SD		Mean Scores
	F	%	F	%	F	%	F	%	F	%	



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6. Excessive bureaucratic processes limit SBMC decision-making and other actions in school administration.	27	14	70	44	53	27	18	9	30	15	3.505
7. There is ineffective leadership and poor communication among the SBMC members, teachers, school administrators and local community members.	34	17	119	60	11	6	23	12	11	6	3.717
8. SBMCs have insufficient financial resources and sources to support secondary school development activities.	36	8	74	37	41	21	42	21	5	3	3.474
9. Teaching staff shortage, limited SBMCs activities in promoting students' educational achievements.	55	28	77	39	33	17	12	6	21	11	3.671
10. Poor participation and engagement by parents/guardians in school decision-making form challenges.	72	36	67	34	34	17	17	9	8	4	3.899

Table 2 provided computed responses on the challenges facing the SBMC in promoting Administration in post basic education schools in Nassarawa Educational Zone, Kano State. From the table, computed responses provided the key challenges undermining SBMC performance. Notably among the challenges were poor parental engagement (M = 3.899) which emerged as the most critical barrier. This was followed by ineffective leadership and communication (M = 3.717) and teacher shortages (M = 3.671) which were also strongly endorsed as impediments across the respondents. Bureaucratic constraints (M = 3.505) and financial limitations (M = 3.474) further restrict SBMC capacity to achieve administrative goals. In overall, based on the obtained results, it could be deduced that the SBMCs are facing series of challenges which hampers their effectiveness towards the promotion of Administration in post basic education schools in Nassarawa Educational Zone, Kano State.

Research Question III: What are the Perceptions of Stakeholders such as teachers, parents, community leaders, and other members of the SBMCs on Community Participation in Administration of post basic education schools in Nassarawa Educational Zone, Kano State?

Table III: Perceptions of Stakeholders of the SBMCs on community participation on administration of post basic education schools in Nassarawa Educational Zone.

Items	SA		A		UD		DA		SD		Mean Scores
	F	%	A	%	F	%	F	%	F	%	
11. Attendance of school meetings and events by SBMC and community members improve school administration.	37	19	113	57	21	11	20	10	7	4	3.772
12. Contributions of community members in school administration improve the school development projects.	45	23	96	49	42	21	10	51	5	3	3.838
13. SBMC participation influence school policy decisions more often.	24	12	88	44	46	23	29	15	11	6	3.429
14. Parents participation in school administration improves student academic performance	47	24	80	40	26	13	41	21	4	2	3.631
15. Community leadership play important role in improving school administration.	37	19	98	50	33	17	17	9	13	7	3.651

The above table provides the computed responses on the perception of stakeholders on SBMC on community participation on administration of post basic education schools in Nassarawa Educational Zone, Kano state. From the table, computed response indicated that stakeholders generally perceive community participation as valuable in enhancing school administration. Attendance at school meetings (M = 3.772) and contributions to development projects (M = 3.838) received strong endorsement. Parents' participation in promoting students' academic performance (M = 3.631) and the role of community leadership in improving administration (M = 3.651) were also positively rated. However, the relatively lower



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mean score for SBMC influence on school policy decisions (M = 3.429) suggests that while community participation is recognized as beneficial, its translation into meaningful policy impact remains weak.

Research Question IV: What Strategies can be implemented to improve the effectiveness of SBMCs in enhancing Administration in post basic education schools in Nassarawa Educational Zone, Kano State?

Table IV: Strategies to improve the effectiveness of SBMCs in enhancing administration in post basic education schools in Nassarawa Educational Zone

Items	SA		A		UD		DA		SD		Mean Scores
	F	%	F	%	F	%	F	%	F	%	
16. Enhancing the capacity of SBMC members in planning, decision-making process, and budget formulation and tracking, can improve school administration.	67	34	81	41	35	18	10	5	5	2.5	3.984
17. Strengthening relationship between SBMC and officials of Local Education Authority, School Administrators and Teachers can improve school administration.	64	32	85	43	31	16	12	6	6	3.0	3.954
18. Providing training to SBMC members on resource management and allocation can improve school administration.	54	27	121	60	12	6	8	4.0	3	2	4.186
19. SBMC can build partnerships with local organizations and businesses to support school development projects.	67	34	85	43	28	14	14	7	4	2	3.994
20. Establishing regular meetings with teachers, parents, and community members to share information and feedback.	59	30	86	43	18	9	27	14	8	4	3.808

The above table provides computed responses on the strategies to improve the effectiveness of SBMCs in enhancing administration in post basic education schools in Nassarawa Educational Zone, Kano state. From the table, it could be observed that all the proposed strategies that could enhance the effectiveness of the SBMS in enhancing administration were strongly endorsed, with mean scores ranging between 3.808 and 4.186. Further analysis revealed that training SBMC members on resource management and allocation (M = 4.186) was the highest-rated strategy, indicating stakeholders' prioritization of financial capacity-building as a critical solution. Other strongly supported strategies included enhancing SBMC capacity in planning and budgeting (M = 3.984), strengthening relationships with education authorities and administrators (M = 3.954), and establishing partnerships with local organizations (M = 3.994). Regular meetings with parents and community members (M = 3.808) were also recognized as important, though rated slightly lower relative to other strategies. Based on the obtained result, it could be said that a number of strategies could enhance the effectiveness of SBMC in school administration in Nassarawa Educational Zone, Kano state.

Discussion of Findings

This study examined the effectiveness of school based-based management committees in administration of post basic public education schools in Nassarawa educational zone, Kano state. The objectives of the study were to assess the effectiveness of SBMC in enhancing administration, identify the challenges faced by the SBMCs, assess the perception of stakeholders on community participation in the administration of post basic public education schools and lastly suggest strategies that could enhance the effectiveness of SBMCs in enhancing administration in Post Basic Public Education Schools in Nassarawa Educational zone, Kano State.

The findings of this study revealed that the SBMCs are not perceived as highly effective in administrative domains such as instructional resource provision, parental involvement, and decision-making. These results are consistent with earlier studies which reported that SBMCs in many developing contexts struggle with inadequate capacity and lack of clear operational guidelines as pinned by Ogundele 2022; that the lack of clarity regarding the roles and responsibility is one of the prominent issues of SBMC members. Similarly, Akpomi 2022, pinned that unclear roles and responsibilities among School Based Management Committee (SBMC) members present a significant challenge in enhancing governance within public senior secondary schools. The finding that teacher support was rated relatively higher, though still close to neutrality,



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may indicate that teachers exert more direct influence on students' academic experiences than SBMCs themselves. This finding was equally in line the work of Eze & Nwanko, 2018, that teachers contribute their expertise and experience to the decision-making processes related to curriculum development, teaching methodologies, students' assessment, and professional development opportunities. With regards to the challenges faced by the SBMCs, the study specifically identified poor parental engagement as the most significant barrier. This finding is consistent with the work of (Anyanwu, 2020) that parents and guardians are crucial stakeholders in School Based Management Committee (SBMC) for enhanced governance of public senior secondary schools in River State. He pointed that, they play a vital role in mobilizing support for educational initiatives and advocating the allocation of resources to improve the quality of education provided by the schools. Thus, parental involvement is noted as a critical determinant of effective school governance. The prevalence of ineffective leadership and poor communication within SBMC structures resonates with the observations of (Okafor, 2017) who postulated that issues such as unclear roles and responsibilities, limited community engagement, resource constraints, and policy challenges within SBMC can lead to governance ineffectiveness. Because when SBMCs are facing such challenges, the decision-making processes may become disjointed, and accountability mechanisms may be compromised, resulting in governance structures that fail to address the diverse needs of the school community adequately. Furthermore, a reported financial limitations and bureaucratic bottlenecks reflect systemic problems highlighted by (Nwansu, 2013) who argued that establishing mechanism for resource mobilization and equitable allocation ensures that SBMCs have access to the necessary funds, infrastructure, and educational materials to carry out their responsibilities effectively. It means that decentralization reforms often devolve responsibilities to local bodies without adequate equipping them with resources.

On the other hand, the study portrays a positive perception of SBMCs on community participation in that all the stakeholders recognize the value of community contributions. The relatively high ratings for attendance at meetings and community-led contributions was in line with the work of (Maina, Mohammed & Adeola 2020; UBEC, 2011); who pinned that SBMC is a channel for bringing resources from community into school, a way of getting a better flow of government resources to schools, as well as the linkage between government, school and community. This emphasized that community engagement can foster accountability and resource mobilization. Nevertheless, the moderate perception of SBMC influence on policy decisions suggests a disconnect between community efforts and institutional decision-making. This finding was consistent with work of (Onyene, 2019) who pinned that SBMC governance often faces challenges due to inconsistencies in policy frameworks at the state and federal levels. By extension, lack of harmonization between policies may result in conflicting mandates and guidelines for SBMC, causing confusion and hindering their ability to implement governance initiatives effectively. With regards to the strategies that could enhance the effectiveness of the SBMCs on school administration, the study identified training in resource management as the most important strategy. This submission was in line with that of Okonkwo, (2018) that SBMC members often require training on various aspects of school management, including financial management, conflict resolution, and policy implementation.

Similarly, the emphasis on partnerships with local organizations corroborated the work of (Udeh, 2020). He postulated that many SBMC encounter difficulties due to a lack of institutional support from educational authorities and government agencies. That inadequate guidance and assistance from relevant institutions can leave SBMC feeling isolated and ill-equipped to address governance challenges. This demonstrated that partnerships broaden the financial and social base of school governance structures. The endorsement of regular meetings as a strategy also reflects best practices in participatory governance, where transparency and accountability are promoted through frequent stakeholder engagement. This finding was in line with the work of Adegoke, (2013), that developing structured programs to engage parents, community leaders, and stakeholders can foster collaboration and ownership in school governance initiatives. Programs like regular meetings, workshops, and forums provide platforms for meaningful dialogue and input from diverse perspectives.

Conclusively, the study highlighted that SBMCs are perceived as weak in practice but stakeholders remain optimistic about their potential. This optimism may derive from the recognition that community-based structures are inherently closer to the realities of schools than centralized authorities. However, without systematic reforms particularly in areas of capacity building, financial empowerment, and leadership training the gap between potential and actual performance is likely to persist. The findings thus underscore the importance of aligning community enthusiasm with institutional support mechanisms, as recommended by recent studies on decentralized educational governance.



Conclusion

The study concludes that while community participation in education is valued and perceived as beneficial, SBMCs have not yet attained significant effectiveness in enhancing school administration. Their influence is curtailed by challenges such as parental disengagement, leadership weaknesses, insufficient financial resources, bureaucratic hurdles, and teacher shortages. However, stakeholders clearly articulated practical strategies particularly in capacity building and financial management that, if implemented, can substantially strengthen SBMC contributions. Thus, the findings highlight both the weaknesses and opportunities for improving SBMC operations in the educational sector.

Recommendations

Based on the findings, the following recommendations were made:

1. There should be a holistic capacity building to SBMC Members to enhance their managerial competencies in areas such as planning, budgeting, decision-making, and resource management.
2. To address the challenges facing the SBMC in promoting Administration in post basic education schools in Nassarawa Educational Zone, Kano there is the urgent need for sensitization campaigns, parent–teacher forums, and flexible meeting arrangements to strengthen parental involvement.
3. The local education authority should as a matter of urgency device means that would reduce all bureaucratic constraints and strengthening of institutional Support. This will enable SBMCs to function more effectively and responsively in promoting school administration.
4. The SBMCs should develop formal partnerships with local businesses, community organisations, and non-governmental agencies to augment financial and material resources. Such collaborations will mitigate funding constraints and reinforce community ownership of school development.

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Effects of 7E's Model on Misconceptions and Achievement in Algebraic concept among Secondary School Students' in Sokoto State, Nigeria

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Abstract

This study investigated the Effects of 7E's Model on Misconceptions and Achievement in Algebraic concept among Secondary School Students' in Sokoto State, Nigeria. The study employed a non-randomized control group, pretest-posttest quasi-experimental design, with the population of 22,173 SSII students from all public senior secondary schools in Sokoto Education Zones excluding gwaranyo and gwadabawa education zones due to security concern. From these, a sample of 378 SSII students drawn from four public senior secondary schools in Sokoto Education Zones (Sokoto North, Sokoto South, Bodinga, and Yabo) through stratified random sampling. Simple random sampling technique was used to select one school from each zone. Students Algebraic Achievement Test (SAAT; Validity = 0.93, reliability = 0.71) and the 5-Tier Students' Algebraic Misconception Test (SAMT; Validity = 0.97, reliability = 0.92) were used for data collection. Mean, Standard deviation, percentages, and frequencies were used to answer research questions, while the One-way ANOVA was used to analyze hypothesis at a 0.05 significance level. Findings revealed that students taught using the 7E's Model demonstrated significantly greater improvement in achievement and reduction of misconceptions compared to those in the Peer Tutoring and Demonstration method groups. 7E's Model is the most effective of the three approaches and recommends its regular integration into algebra instruction to foster deeper conceptual understanding and minimize misconceptions. Future research should be extended to different states in Nigeria and over longer instructional periods to test the generalizability and long-term effects of the 7E's Model and Peer Tutoring.

Keywords: Achievement, Misconceptions, Instructional Modules, 7E's Model, peer tutoring.

Introduction

Algebra is a central component of mathematics that supports logical reasoning, abstract thinking, and problem-solving (Kaput, 2017). It is globally recognized as a gateway to advanced mathematical knowledge and a foundational requirement for careers in science, technology, engineering, and mathematics (STEM) (Alam & Mohanty, 2024). Through algebra, students learn to develop generalizations, recognize patterns, and make transitions from concrete arithmetic operations to more complex and abstract mathematical representations (Demonty, Vlassis & Fagnant, 2018). Beyond the academic domain, algebra also enhances critical thinking and decision-making abilities, which are essential in everyday situations involving budgeting, planning, and data interpretation (Asekun, 2023). In today's rapidly evolving global workforce, proficiency in algebra is increasingly seen as a prerequisite for innovation and digital literacy, forming the backbone of computational thinking in the 21st century (Sarmasági, Rumbus, Pluhár & Margitay-Brecht, 2023). In view of this, Nigeria considers Algebra as one of the component of mathematics curriculum. Learning algebra in spiral in nature as it cut across all the levels of education from basic level to senior secondary school (NERDC), as well as Science related areas. In spite



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of all, many Nigerian students specifically Sokoto State students still struggle with learning Algebraic content, largely due to persistent misconceptions in solving algebraic problems and dominance of teacher-centered instructional methods (Sezuni, 2022; Ray, 2024). Such pedagogical limitations have led to persistent misconceptions and poor performance in algebra. Literature indicates the problem of rote learning; use of traditional approach (Ginga & Zakariya, 2020). WAEC Chief Examiners' Reports (2020–2024) affirmed these difficulties are linked to the lack of basic algebra skills, rote memorization, and ineffective teaching strategies. Moreover, misconceptions are faulty understandings about algebraic concepts, such as seeing the equal sign only as a signal for calculation, mistaking variables for labels, or wrongly applying arithmetic rules in algebra. For instance, students may treat $3a + 4$ as $7a$ or incorrectly cancel terms in expressions. These errors hinder abstract reasoning and generalization, blocking deeper understanding of algebra. Research emphasizes that overcoming such challenges requires targeted teaching approaches that foster conceptual understanding and help students confront and correct their misconceptions. Effective strategies include the 7E's model and Peer Tutoring.

The 7E's model (Elicit, Engage, Explore, Explain, Elaborate, Evaluate, and Extend) is a constructivist-based instructional framework that promotes active learning and inquiry. It enables learners to build new knowledge from their prior understanding and experiences (Sewanu, 2022). Similarly, peer Tutoring a strategy in which students work together in pairs or small groups to support each other's learning (Topping, Buchs, Duran & Van Keer, 2017). In peer tutoring, the "tutor" explains concepts, solves problems with the "tutee," and provides feedback, while the tutee asks questions, clarifies doubts, and attempts similar problems (Abdurrahman, Abdullah, Osman, Ali, Samah, Jumaat & Kohar, 2019; Abdurrahman, 2021). This study was designed to address gaps in teaching Algebraic content. The 7E's Model and Peer Tutoring served as experimental strategies, while the Demonstration Method represented the traditional classroom approach. The study draws on relevant literature and is guided by three key theories: Vygotsky's Social Constructivism Theory, which stresses social interaction, scaffolding, and cultural context; Bandura's Social Learning Theory, which highlights observation, imitation, and peer influence; and Kolb's Experiential Learning Theory, which emphasizes learning through experience, reflection, and experimentation. The findings are expected to benefit students, mathematics teachers, and other educational stakeholders. Therefore, the present study used the 7E's Model, Peer Tutoring, and the Demonstration Method to alleviate students' misconceptions and improve their achievement in learning algebra.

Research Objectives

This research aims to examine the Effect 7E's model as alternatives to the traditional Demonstration Method, to alleviate misconceptions and enhance achievement in algebra among Senior Secondary School students in Sokoto State.

The specific objectives are to:

1. Find out the misconceptions of students in solving algebraic problems after using the three independent instructional strategies (7E's, Peer tutoring, and Demonstration method) among senior secondary school students in Sokoto State.
2. Find out the difference in the mean achievement scores of students taught using the three independent instructional strategies (7E's, Peer tutoring, and Demonstration method) among senior secondary school students in Sokoto State.

Research Questions

Based on the stated objectives, the study raised the following questions and hypotheses;

1. What are the misconceptions of students in solving algebraic problems after using the three independent instructional strategies (7E's, Peer tutoring, and Demonstration method) among senior secondary school students in Sokoto State?
2. Is there any difference in the mean achievement scores of students taught using the three independent instructional strategies (7E's, Peer tutoring, and Demonstration method) among senior secondary school students in Sokoto State?

Research Hypothesis

The null hypothesis was formulated and tested at $\alpha = 0.05$ level of significance.

H₀₁: There is no significant difference in the mean achievement scores of students taught using the three independent instructional strategies (7E's, Peer tutoring, and Demonstration method) among senior secondary school students in Sokoto State.

Methodology

This study employed a non-randomized control group, pretest–posttest quasi-experimental design. The population comprised all Senior Secondary School Two (SSII) students in public schools across Sokoto State Education Zones.



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However, due to security concerns, Goronyo and Gwadabawa Education Zones were excluded, leaving a study population of 22,173 students across 92 schools in four zones: Sokoto North, Sokoto South, Bodinga, and Yabo. A stratified random sampling technique was used to ensure fair representation from each education zone. The sample was proportionally distributed across the zones in Table 1.

Table 1 Sample of the Study

S/N	Zones	Name of School	No. of Students
1	Sokoto North	School A (EXP2)	90
2	Sokoto South	School B (EXP1)	169
3	Bodinga	School C (CONT)	56
4	Yabo	School D (CONT)	63
Total			378

Source: (Krejcie and Morgan, 1970)

From each zone, one school was randomly selected. The selected schools were then randomly assigned to two experimental groups and one control group. Within each school, SSII intact classes were randomly chosen to participate in the study, thereby preserving the natural classroom setting and minimizing disruptions. Two instruments were used for data collection in this study: the Students Algebraic Achievement Test (SAAT) and the 5-Tier Students Algebraic Misconception Test (SAMT). The SAAT was used to measure students' achievement in algebraic processes. It consisted of 35 objective test items adopted from past examination questions (WAEC and NECO) as well as recommended mathematics textbooks. Each item had four options (A–D), with one correct answer carrying one mark, giving a maximum score of 35 marks. While, the SAMT was a five-tier diagnostic test adapted to explore students' deeper understanding of algebraic concepts and identify common misconceptions. It assessed students across multiple dimensions, including correctness of answers, confidence level, and conceptual reasoning. This enabled a comprehensive diagnosis of learning difficulties beyond surface-level performance. To establish validity and reliability, both instruments were reviewed by experts in mathematics education and subjected to a pilot study with 40 students. The analysis yielded (Validity=0.93; Reliability=0.71 for SAAT and Validity=0.97; Reliability=0.92 for SAMT), confirming their suitability for the main study. A pretest was administered to determine the equivalence of groups before treatment. The treatment lasted for six weeks, after which a posttest was conducted using the same instruments to evaluate the effectiveness of the instructional strategies. After marking session, the scores obtained from the study were subjected to analysis using SPSS package. Descriptive statistics of (mean, standard deviation, percentages and frequencies) to answer research questions, while One-way ANOVA was used to test the null hypothesis at $\alpha = 0.05$ level of significance.

Research Question 1

What are the misconceptions of students in solving algebraic problems after using the three independent instructional strategies (7E's, Peer tutoring, and Demonstration method) among senior secondary school students in Sokoto State? The result of the analysis is presented in table 3, 4, 5 and 6 respectively.

Table 3: Levels of Misconception among Students Taught Using the 7E's Instructional Model

S/N	Decision	Frequency	Percentages
1	AC	124	73%
2	AAC	19	11%
3	LC	3	2%
4	LK	5	3%
5	MC	6	4%
6	HNC	12	7%
Total		169	100%

Source: (Field work/SPSS output, 2025)

Table 3 shows that among the 169 students taught using the 7E's instructional model, only a few exhibited misconceptions: 6 (4%) had misconceptions (MC), 5 (3%) showed lack of knowledge (LK), 3 (2%) lacked confidence (LC), and 12 (7%) had no conception (HNC). In contrast, 124 students (73%) demonstrated no misconceptions, while 19 (11%) showed only minor errors. This indicates that the 7E's instructional model was highly effective in reducing algebra-related misconceptions and enhancing students' understanding of algebraic concepts, as further illustrated in Figure 1.

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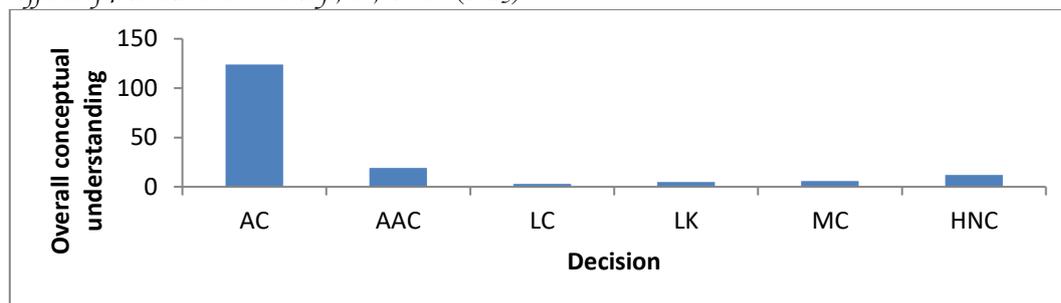


Figure 1: Students taught using the 7E's Model Levels of Misconception in Algebraic processes

Table 4: Levels of Misconception among Students Taught Using Peer Tutoring Instructional Strategy

S/N	Decision	Frequency	Percentages
1	AC	20	22%
2	AAC	16	18%
3	LC	6	7%
4	LK	7	8%
5	MC	19	21%
6	HNC	22	24%
Total		90	100%

Source: (Field work/SPSS output, 2025)

Table 4 show that only a small portion of students (22%) taught with the Peer Tutoring Instructional Strategy had no algebra-related misconceptions, meaning they clearly understood the concepts. Another 18% had minor misconceptions, showing partial understanding. However, a large number of students (21%) demonstrated clear misconceptions in their reasoning, while 24% had no meaningful understanding of algebra at all. Others lacked confidence (7%) or basic knowledge (8%) to solve problems accurately. These results indicate that while Peer Tutoring helped some students reduce their misconceptions, it was not equally effective for all. The method may need better structure or support to help students tackle more complex algebraic ideas.

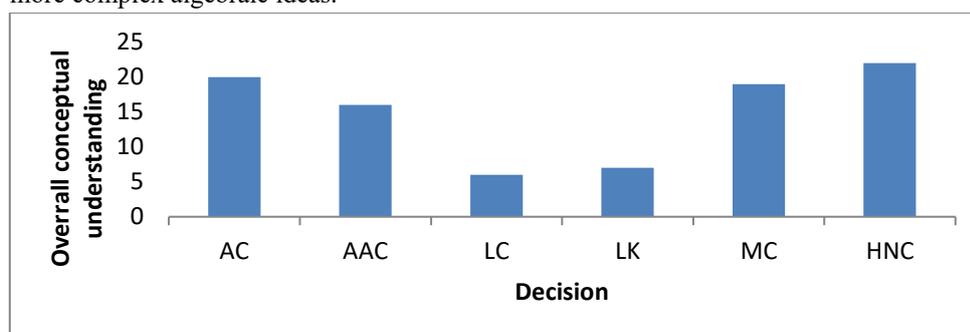


Figure 2: Misconception Levels among Students Taught with Peer Tutoring

Table 5: Levels of Misconception among Students Taught Using the Demonstration Method

S/N	Decision	Frequency	Percentages
1	AC	6	5%
2	AAC	10	8%
3	LC	10	8%
4	LK	21	18%
5	MC	32	27%
6	HNC	40	34%
Total		119	100%

Source: (Field work/SPSS output, 2025)



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Table 5 shows the levels of algebra-related misconceptions among students taught using the Demonstration Method (Control Group). Only 6 students (5%) had no misconception, meaning they fully understood the algebraic concepts. A small portion (8%) showed minor misconceptions. However, a large number of students struggled significantly: 32 students (27%) demonstrated clear misconceptions in their reasoning, and 40 students (34%) had no conception at all indicating a serious lack of understanding. Additionally, 21 students (18%) lacked the necessary foundational knowledge, and 10 students (8%) showed a lack of confidence in applying what they learned. These results reveal that the Demonstration Method was the least effective in minimizing algebra misconceptions.

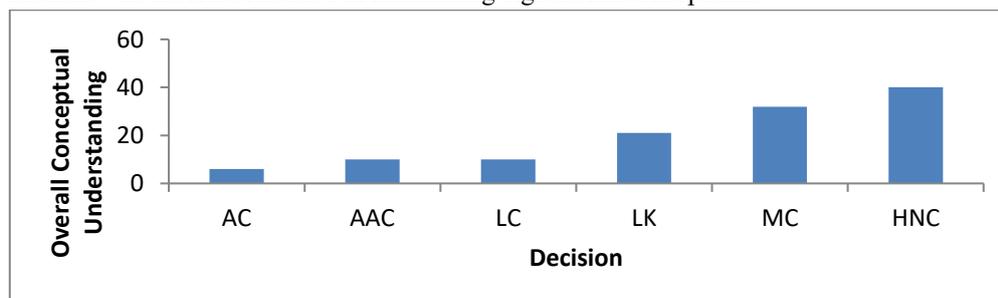


Figure 3: Misconception Levels among Students Taught with the Demonstration Method

Table 6: Summary of Students' Misconceptions across the Three Instructional Strategies

S/N	Decision	7E's		Peer Tutoring		Demonstration	
		Frequency	%	Frequency	%	Frequency	%
1	AC	124	73%	20	22%	6	5%
2	AAC	19	11%	16	18%	10	8%
3	LC	3	2%	6	7%	10	8%
4	LK	5	3%	7	8%	21	18%
5	MC	6	4%	19	21%	32	27%
6	HNC	12	7%	22	24%	40	34%
	Total	169	100%	90	100%	119	100%

Source: (Field work/SPSS output, 2025)

Table 6 presents students' levels of misconceptions across the three instructional strategies: 7E's Model, Peer Tutoring, and Demonstration Method. The 7E's Model produced the fewest misconceptions, with only 4% of students showing clear misconceptions and 7% lacking understanding, indicating its strong effectiveness in promoting accurate algebraic reasoning. Peer Tutoring showed moderate success, with 21% demonstrating misconceptions and 24% lacking understanding, suggesting that while it supported peer interaction, some students still faced conceptual challenges. The Demonstration Method recorded the highest misconceptions (27%) and lack of understanding (34%), reflecting the weaknesses of teacher-centered instruction in addressing learning difficulties. Figure 4 visually confirms the clear advantage of the 7E's Model over the other teaching methods.

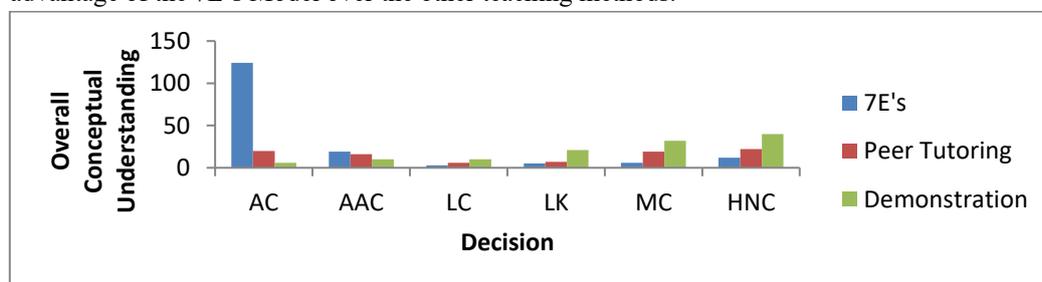


Figure 4: Comparison of Students' Misconception Levels by Instructional Strategy

Figure 4 visually compares how students across the three groups performed in terms of misconception levels. The 7E's Model produced the fewest misconceptions and highest accurate reasoning, confirming its effectiveness in promoting deep understanding. Peer tutoring showed moderate success, with noticeable improvement but still a high number of students misunderstanding algebraic concepts. The Demonstration Method had the most misconceptions, indicating that students taught through traditional lecture-based methods were more likely to misunderstand or fail to grasp the concepts.



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Research Question 2

Is there any difference in the algebraic mean achievement scores of students taught using the three independent instructional strategies (7E's, Peer tutoring, and Demonstration method) among senior secondary school students in Sokoto State? The result of the analysis is presented in Table 7.

Table 7: Means and Standard Deviation of Achievement Scores of Students taught using the Three Independent Instructional Strategies

Variable	N	Mean	SD	Std. Error	95% Confidence Interval for Mean	
					Lower Bound	Upper Bound
7E's Model	169	23.81	6.811	.524	22.78	24.85
Peer Tutoring	90	16.34	7.276	.767	14.82	17.87
Demonstration Method	119	10.26	5.257	.482	9.31	11.21
Total	378					

Source: (Field work/SPSS output, 2025)

The results in Table 7 show the mean scores and standard deviations of students' performance in the algebra achievement test after being taught using three different teaching methods. Students who were taught using the 7E's Model had the highest mean score ($M = 23.81$), meaning they performed better than the other two groups. This group had 169 students, and their scores were more spread out, with a standard deviation of ($SD = 6.81$). The Peer Tutoring group had a mean score of ($M = 16.34$) and a slightly higher spread of scores ($SD = 7.28$), showing more variation in how students performed. The Demonstration Method group had the lowest mean score ($M = 10.26$) and a standard deviation of ($SD = 5.26$), indicating that students in this group performed the least well overall compared to the other groups.

Null Hypothesis 1

There is no significant difference in the algebraic mean achievement scores of students taught using the three independent instructional strategies (7E's module, Peer tutoring, and Demonstration method) among senior secondary school students in Sokoto State. This null hypothesis was tested using inferential statistics of One-way ANOVA for post-test scores of the experimental and control groups. The result of the analysis is presented in Table 8.

Table 8: Summary of one-way ANOVA on Algebraic Mean Achievement Scores of Students taught using the Three Independent Instructional Strategies

Source of variance	Sum of Squares	Df	Mean Square	F	P
Between Groups	13060.326	2	6530.163	155.311	.000
Within Groups	15767.187	375	42.046		
Total	28827.513	377			

Source: (Field work/SPSS output, 2025)

Table 8 presents the results that $F(2,375) = (155.311)$ with a P-value of 0.001, which is less than the significant level of 0.05, this indicated that there is a statistically significance difference in the students achievement score among the three groups. Therefore, we reject the null hypothesis which stated that there is no significant difference in the algebraic mean achievement scores of students taught using the three independent instructional strategies (7E's module, Peer tutoring, and Demonstration method) among senior secondary school students in Sokoto State. Since a significant difference was found between the mean achievement scores of the three groups, the data was subjected to further analysis to discover where the difference exist using Scheffe's post hoc test in table 9.

Table 9: Scheffe's post hoc test

(I) treatment group	(J) Comparison group	Mean Difference (I-J)	F	P
7E's Model	Peer Tutoring	7.466*	155.311	.000
	Demonstration Method	13.550*		
Peer Tutoring	7E's Model	-7.466*		.000
	Demonstration Method	6.084*		
Demonstration Method	7E's Model	-13.550*		.000
	Peer Tutoring	-6.084*		

Source: (Field work/SPSS output, 2025)



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Table 9 presents the results of Scheffé's post hoc analysis conducted to identify where the specific differences occurred in students' mean achievement scores across the three instructional strategies: the 7E's Instructional Model, Peer Tutoring, and the Demonstration Method. The test followed a significant one-way ANOVA result. The comparison between the 7E's Model and Peer Tutoring showed a mean difference (MD) of 7.466, $F = 155.311$, and $p = .001$, indicating a significant difference in favour of the 7E's Model. Similarly, the comparison between the 7E's Model and the Demonstration Method revealed a mean difference of 13.550, also significant at $p = .001$, confirming that the 7E's Model was more effective. Lastly, the Peer Tutoring group outperformed the Demonstration Method group with a mean difference of 6.084, $p = .001$. Therefore, both the 7E's Model and Peer Tutoring were significantly more effective than the Demonstration Method in enhancing students' achievement in algebra. The 7E's Model produced the best results overall, confirming the superiority of constructivist and student-centered instructional approaches over traditional, teacher-centered methods. Consequently, the null hypothesis of no significant difference was rejected.

Summary of the Major Findings

This section presents a concise overview of the key findings derived from the research questions and hypotheses that guided the study;

1. Students taught using the 7E's Model showed the fewest misconceptions in algebra, indicating a stronger and clearer understanding of algebraic processes.
2. Students taught using the 7E's Instructional Model significantly demonstrate a better achievement in algebra.

Discussion of Findings

The findings from Research Question One revealed that students taught using the 7E's instructional model had the fewest misconceptions in algebra, indicating that this strategy effectively enhanced understanding and minimized common errors. In contrast, students taught through the Demonstration Method recorded the highest level of misconceptions, showing that the traditional, teacher-centered approach was less effective. Students in the Peer Tutoring group displayed a moderate level of misconceptions, meaning the method was beneficial but less impactful than the 7E's Model. This result aligns with previous research. For instance, Sule, Imoko, and Chianson (2024) found that students taught with the 7E's model performed better and had fewer misconceptions in algebra compared to those taught traditionally, likely due to its activity-based and student-centered nature. Similarly, Abdurrahman, Abdullah, and Osman (2020) observed that Peer Tutoring improved understanding as students clarified concepts to one another, while Anwer (2019) confirmed that activity-based learning enhances students' reasoning and problem-solving abilities. However, some studies contradict this finding. Nzekwe (2018) reported no significant difference between Peer Tutoring and the Demonstration Method, possibly due to poor implementation or inadequate student participation. Likewise, Cheron (2021) noted that the 7E's Model may be less effective when teachers lack proper training or when class sizes are large. These discrepancies could stem from variations in teacher competence, duration of treatment, or learning environments.

The findings revealed that students taught using the 7E's Model achieved the highest mean scores in algebra, followed by those taught through Peer Tutoring, while the Demonstration Method produced the lowest scores. This indicates that student-centered approaches enhance understanding and performance better than teacher-centered methods. The 7E's Model promotes active engagement and deeper conceptual learning through its structured phases, while Peer Tutoring supports learning through collaboration and feedback. These results align with studies by Likita (2023), Sule, Imoko, and Chianson (2023), and Wilujeng (2017), which found the 7E's Model to significantly improve students' achievement in mathematics. Similarly, Awofala and Agbolade (2022) reported that Peer Tutoring was more effective than traditional methods. However, contrary findings by Gurmu, Tuge, and Hunde (2024) and Adeagbo (2022) showed Peer Tutoring outperforming teacher-guided instruction, suggesting that its success depends on students' participation and group dynamics.

Conclusion

This study concludes that the 7E's instructional model is the most effective among the three instructional strategies (7E's Model, Peer Tutoring, and Demonstration Method) for improving students' achievement and reducing misconceptions in solving algebraic problems among senior secondary school students in Sokoto State. The 7E's model significantly outperformed the Peer Tutoring and Demonstration methods, promoting greater student engagement and a clearer



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understanding of algebraic concepts. These findings underscore the value of adopting learner-centered, inquiry-based instructional approaches over traditional teaching methods (such as demonstration) in addressing persistent learning difficulties in algebra.

Recommendations

1. Mathematics teachers should be trained and encouraged to regularly use the 7E's instructional model in teaching algebra, as it has been shown to improve student performance and deepen understanding. This can be achieved through well-organized workshops, seminars, and in-service training programs that equip teachers with the necessary skills for effective classroom implementation
2. School authorities and governments should provide necessary instructional materials and planning time to enable teachers to implement the 7E's model effectively.

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Assessment on Roles of Digital-Technology Tools for History Learning among Senior Secondary School Students in Offa, Kwara State, Nigeria

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Abstract

This study assessed the roles of digital technology tools for History learning among senior secondary school students in Offa, Kwara State, Nigeria. The purpose of the study was to assess the extent to which students utilize digital tools in History learning and also to explore the roles of these tools on students' engagement, accessibility to resources, and academic performance. The research was guided by the growing recognition of digital technology as a transformative force in 21st-century education, particularly in making History learning more interactive, accessible, and effective. The study adopted a descriptive survey research design. The population comprised all senior secondary school students offering History in Offa, Kwara State, from which a sample of 200 students was selected using random sampling technique. A researcher-designed questionnaire titled "Digital Technology Tools for History Learning Questionnaire (DTEHLQ)" served as the main instrument for data collection. The reliability of the instrument was confirmed through the test-retest method using Pearson Product Moment Correlation at a 0.05 significance level. Findings revealed that students in Offa increasingly engage with basic digital tools such as YouTube, Smartboards, and educational websites to support their History learning. However, advanced tools like Augmented Reality and Learning Management Systems remain underutilized. Students overwhelmingly agreed that digital tools improve their engagement, accessibility to a wider range of historical resources, and retention of knowledge. Based on the findings, it was concluded that digital tools have a significant positive impact on History learning, particularly when they are accessible, interactive, and well-integrated into classroom practices. The study recommended that Students should actively utilize digital resources to supplement their History learning, Teachers should incorporate digital content such as virtual timelines and interactive simulations to make lessons more engaging.

Keywords: Digital; Technology; History; Learning, Students.

Introduction

Education is a fundamental tool for the socio-economic and cultural development of any society. It encompasses the formal and informal processes through which individuals acquire knowledge, skills, and values to contribute effectively to society. In Nigeria, education plays a significant role in fostering national unity, improving literacy levels, and driving innovation. Scholars such as Adegbite and Obike (2018) emphasized that education in Nigeria serves as a vehicle for economic growth and personal empowerment. Similarly, Ayodele et al. (2020) noted that education in Nigeria has been pivotal in equipping individuals with problem-solving skills critical for national development. However, despite its relevance, challenges such as poor funding, infrastructure deficits, and outdated teaching methods have impeded its progress.

Education in Nigeria is structured into three main levels: primary, secondary, and tertiary. Among these, secondary education serves as a critical bridge between foundational knowledge acquired at the primary level and advanced learning at the tertiary level. It equips students with essential skills for either further studies or immediate integration into the workforce. As noted by Yusuf, Kolapo, and Olorunsola (2019), secondary education is a crucial stage for cognitive and social development. However, secondary schools in Nigeria are often plagued with challenges such as overcrowded classrooms, inadequate teaching materials, and insufficient adoption of modern teaching strategies. These challenges are more pronounced in subjects like History, where the engagement of students often depends on the methods and tools employed by educators (Ogundipe & Aluko, 2022).



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The teaching and learning of History in Nigeria's secondary schools hold significant relevance, as History provides students with insights into their cultural heritage, national identity, and critical thinking skills. According to Adetola and Ajayi (2021), History fosters an understanding of societal dynamics and equips students with analytical skills necessary for informed decision-making. Despite its importance, History education in Nigeria has faced neglect, with many students perceiving it as less relevant compared to science and technology-related subjects. The neglect is attributed to outdated curricula, lack of qualified teachers, and insufficient use of engaging teaching methods (Eze & Adeyemi, 2020). Consequently, History education requires innovative strategies to rekindle students' interest and improve learning outcomes. One of the critical factors contributing to poor academic performance among secondary school students in Nigeria is the persistent reliance on traditional teaching methods. Research by Okonkwo and Balogun (2017) identified that rote learning and lecture-based methods dominate classrooms, limiting students' engagement and retention. This issue is particularly evident in History classes, where storytelling and memorization are often prioritized over analytical and interactive learning approaches. Additionally, the poor integration of digital technologies in teaching further exacerbates the problem, as students are deprived of tools that can make learning more dynamic and relatable. Thus, the need to integrate digital technologies in History teaching and learning has become increasingly apparent to address these gaps in pedagogy.

Digital technology refers to tools and resources that use digital formats to facilitate teaching and learning. In the context of History education, digital technologies include interactive software, virtual reality tools, digital archives, and multimedia presentations. Scholars like Olufemi and Adebajo (2021) observed that digital tools enhance students' understanding by presenting historical content in interactive and visually engaging formats. Digital technology bridges the gap between traditional teaching methods and modern learning needs, offering opportunities for personalized and experiential learning. The advent of technology in education has been recognized globally, with countries like South Africa and Kenya adopting various digital platforms to improve secondary education (Njuguna & Amolo, 2019). The relevance of digital technology in History education cannot be overstated. Digital tools provide opportunities for immersive learning experiences, where students can explore historical events, cultures, and timelines interactively. For instance, virtual reality can recreate historical sites, while multimedia content brings historical narratives to life. According to Idowu et al. (2022), digital tools enhance critical thinking and engagement among learners. The types of digital technologies used for learning History include digital libraries, historical simulation games, online discussion forums, and augmented reality apps. These tools enable students to connect historical knowledge with contemporary issues, thereby fostering a deeper understanding of the subject and improving academic performance. The roles of digital technology in enhancing History learning in Nigeria's secondary schools have been further attested by numerous scholars, emphasizing its transformative potential in making education more engaging and effective. According to Alabi and Adewale (2020), digital technology facilitates interactive learning experiences, allowing students to explore historical events and narratives through virtual reality and simulation tools. For example, tools like virtual field trips enable students to experience historical sites without leaving the classroom, thus enriching their understanding of the subject matter. Similarly, Oyekanmi and Bello (2021) asserted that multimedia resources, including videos, infographics, and digital timelines, provide diverse perspectives on historical events, which enhance critical thinking and analytical skills. Globally, studies such as that of Johnson and Muller (2018) in South Africa revealed that integrating digital archives into History education fosters a deeper appreciation of heritage and cultural diversity among students. These attestations highlight the untapped potential of digital tools in revolutionizing History education in Nigeria.

Despite the proven benefits of digital technology, its integration into History education in Nigeria's secondary schools remains significantly poor. Several studies, such as those by Chukwuma and Oladimeji (2020), have observed that many Nigerian schools lack the necessary infrastructure, such as internet access, digital devices, and trained personnel, to effectively incorporate digital technologies. Furthermore, Ibekwe and Ajibade (2022) highlighted that some History teachers are resistant to adopting digital tools due to limited digital literacy skills or a preference for traditional teaching methods. This issue is compounded by the inadequate allocation of resources by educational authorities, which has resulted in a digital divide between urban and rural schools. For instance, in Offa, Kwara State, many schools still rely on textbooks and chalkboards, which restrict students' access to interactive and multimedia resources essential for effective History



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learning. The poor integration of digital technology in teaching History has had adverse effects on secondary school students' academic performance and their ability to achieve educational goals in the subject. As highlighted by Ogundele and Mohammed (2021), students who are not exposed to interactive and innovative teaching methods often struggle to engage with the subject, leading to low retention rates and poor examination results. This issue is further supported by Abiola and Yusuf (2020), who observed that traditional teaching methods fail to stimulate students' curiosity and critical thinking skills, which are crucial for mastering History. The lack of digital tools also limits the ability of teachers to present complex historical concepts in relatable and engaging formats, thereby hindering students' overall learning experience. Consequently, these shortcomings have resulted in a decline in students' interest in History and a gap in achieving broader educational objectives in Nigeria's secondary schools.

Given these challenges, there is an urgent need for research attention to address the poor integration of digital technology in History education in Nigeria's secondary schools. Scholars such as Eze and Akinlabi (2022) have pointed out that existing studies often focus on general education technologies without delving into subject-specific applications like History. Additionally, Ajayi and Oloruntopa (2021) noted that most research on digital technology in Nigerian education has primarily explored higher institutions, leaving secondary schools relatively under-researched. The present study intends to fill these gaps by investigating the roles of digital technology in enhancing History learning among secondary school students in Offa, Kwara State. By doing so, it aims to provide actionable insights into overcoming the barriers to digital integration and fostering innovative teaching practices tailored to the needs of History education in Nigeria's secondary schools.

Objectives of the Study

The main purpose of this study is to examine the roles of digital technology in enhancing History learning among secondary school students in Offa, Kwara State. The specific objectives are to:

1. identify the extent to which digital technology tools are used for learning of History among Secondary school students in Offa, Kwara State, Nigeria;
2. examine the roles of digital technology tools for History learning in Offa, Kwara State, Nigeria.

Research Questions

The following research questions were raised and answered in this study:

1. What are the digital technology tools used for History learning among Secondary school students in Offa?
2. What are the roles of digital technology tools for History learning in Offa, Kwara State, Nigeria?

Methodology

This study adopted descriptive research of the survey type. The population for this study comprised all Senior Secondary School students in Offa, Kwara State while the target population was all the History students in Senior Secondary School in Offa, Kwara State. Two hundred 200 History students were sampled from both public and private secondary schools in Offa using random sampling technique. A researcher's designed questionnaire with a reliability coefficient of 0.71 was used for data collection. The questionnaire was divided into section A and B. The section A was used to obtain demographic data of the respondents while the section B was used to explore the roles of digital technology tools for History learning. Data collected for this study were analysed using descriptive statistics of mean and rank order to answer the research questions.

Presentation of Results

Analyses of data were presented in tables 1 and 2 as follows:

Research Question One: *What are the digital technology tools used for History learning among Secondary School Students in Offa?*

Table 1: Digital Technology Tools Used for History Learning among Secondary School Students in Offa

S/N	Name of Digital Tools	Mean	SD	Remark
1	Educational YouTube Videos	3.45	0.74	Utilised
2	Interactive History Mobile Apps	3.21	0.86	Utilised
3	Google Classroom	2.95	0.91	Utilised



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S/N	Name of Digital Tools	Mean	SD	Remark
4	History Podcasts	2.34	0.88	Not Utilised
5	Smartboards for Virtual History Lessons	3.67	0.69	Utilised
6	Online Documentaries	3.40	0.78	Utilised
7	Augmented Reality Tools for Historical Simulations	2.12	0.92	Not Utilised
8	History-related Educational Websites	3.52	0.64	Utilised
9	Digital Flashcards for Memorizing Historical Dates	2.58	0.80	Utilised
10	Learning Management Systems (e.g., Moodle)	2.20	0.85	Not Utilised

Source: *Field work, 2025*

The findings from table 1 reveal a diverse range of digital tools being employed by senior secondary school students for History learning in Offa, Kwara State. Among the tools listed, Smart boards recorded the highest mean score (Mean = 3.67), closely followed by History-related websites (Mean = 3.52) and YouTube educational videos (Mean = 3.45). These figures suggest that tools offering visual and interactive experiences are particularly favoured by students. Smart boards, for example, allow for dynamic presentations that make historical narratives more relatable and visually stimulating, enhancing students' engagement and understanding.

Research Question Two: *What are the roles of digital technology tools for History learning in Offa?*

Table 2: Roles of Digital Technology Tools for History Learning in Offa

S/N	Roles of Digital Tools in Enhancing History Learning in Offa	Mean	SD	Remark
1	Improves students' engagement with historical contents	3.62	0.79	Agreed
2	Makes abstract historical events easier to visualize	3.45	0.81	Agreed
3	Supports independent learning among students	3.38	0.84	Agreed
4	Encourages collaborative learning through digital platforms	3.29	0.87	Agreed
5	Enhances retention of historical dates and events	3.51	0.76	Agreed
6	Provides access to global historical resources	3.74	0.69	Agreed
7	Develops critical thinking through interactive content	3.48	0.80	Agreed
8	Reduces dependence on traditional chalkboard methods	3.25	0.85	Agreed
9	Makes assessment and feedback on history lessons faster	3.36	0.82	Agreed
10	Stimulates students' interest in History as a subject	3.61	0.78	Agreed
Weighted Mean		3.47		Agreed

Source: *Field work, 2025*

The findings from table 2 clearly show that students in Offa widely acknowledge the positive roles of digital technology in enhancing their History learning experiences. A significant number of students agreed that digital technology has improved their access to global historical resources, as indicated by a high mean score of 3.74. This suggests that students are no longer limited to locally available textbooks and materials but are now exposed to a broader and richer understanding of world history through the internet and digital platforms. Another notable role of digital technology, based on the findings, is its ability to increase student engagement during History lessons, with a mean score of 3.62. History, which has often been perceived as a dry and fact-heavy subject, is now becoming more lively and captivating through the use of videos, simulations, virtual museum tours, and interactive timelines. This transition from passive to active learning not only sustains students' attention but also deepens their interest in historical topics.

Moreover, the students acknowledged that digital tools positively impact their ability to retain historical information. Technologies like audiovisual aids, gamified history quizzes, and educational apps help reinforce knowledge by allowing students to see, hear, and interact with content repeatedly. This multisensory approach aligns with cognitive theories of learning, which suggest that information presented in multiple formats is more likely to be retained and recalled over time. The role of digital technology in promoting independent learning was also highly rated by the students. Many digital platforms encourage self-paced learning where students can explore historical content beyond the classroom at their



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convenience. This shift towards autonomous learning builds critical thinking and research skills, essential for success in higher education and beyond. It empowers students to take ownership of their learning journey, a key requirement for 21st-century learners. On this note, the analysis from table 2 paints a promising picture of how digital technology is reshaping History studies among senior secondary school students in Offa. Students have clearly identified how digital tools provide broader access to information, improve engagement, enhance retention, and support independent learning.

Discussion of Findings

The findings of the study reveal a significant trend in the adoption of digital tools for History learning among secondary school students in Offa, Kwara State. Students are widely making use of accessible and familiar digital platforms such as YouTube, Smartboards, Google Classroom, and various educational websites. These tools provide dynamic and engaging ways to present historical content, moving beyond traditional rote memorization methods. Their popularity can be attributed to their availability, ease of use, and the ability to support multimedia presentations that appeal to different learning styles. However, the study also highlights a notable underutilization of more advanced digital technologies, including Augmented Reality (AR), Learning Management Systems (LMS), and digital archives. The disparity in the use of digital tools suggests varying levels of infrastructural development and digital literacy across different schools. In many cases, public secondary schools face challenges related to funding, internet access, and availability of modern teaching aids, whereas private schools may have better resources to integrate sophisticated technologies. This gap limits students' opportunities to experience highly immersive and interactive learning environments that advanced technologies can provide. Factors such as teachers' competence in using digital tools, availability of supporting devices, and the cost implications of maintaining high-end technology further exacerbate this divide. Without deliberate efforts to bridge this technological gap, the full potential of digital learning in History education may not be realized across all schools.

This finding aligns with the observations made by scholars like Adebayo and Ogunlade (2020), who stressed the growing reliance on platforms like YouTube and Google Classroom in Nigerian secondary schools. Their study indicated that these tools fostered improved communication between teachers and students and offered flexible access to educational content. Similarly, Eze and Bello (2021) reported that integrating digital platforms into the curriculum significantly boosted student interest and participation, particularly in subjects often regarded as difficult or abstract, such as History. However, the limited integration of more complex technologies like AR and VR, as noted by Okonkwo (2019), remains a critical issue. He argued that while these technologies offer transformative educational experiences, their adoption is hampered by infrastructural inadequacies and lack of policy support in many African educational settings. Another major outcome of the study was the overwhelming agreement among students regarding the positive roles of digital technologies in History learning. Students acknowledged that digital tools help simplify complex historical events and concepts, making them more accessible and relatable. For example, the use of animated videos and interactive timelines enables students to visualize historical sequences and understand cause-and-effect relationships better. Moreover, digital storytelling and simulations bring abstract or distant historical realities closer to students' lived experiences, enhancing both comprehension and retention. These experiences make History more than just a subject; they turn it into an interactive exploration of past human experiences. The findings corroborate the works of Akinola and Yusuf (2022), who pointed out that digital tools in the classroom promote learner autonomy and strengthen inquiry-based learning skills. According to their study, when students use digital platforms to conduct research or explore historical narratives independently, they become active participants in their own learning journey rather than passive recipients of information. Additionally, students develop critical thinking skills as they analyze different sources, verify historical facts, and construct their own interpretations of events. This deeper engagement not only improves academic performance but also fosters a lifelong interest in historical inquiry.

Furthermore, Nwachukwu and Jimoh (2021) affirmed that digital technologies enhance historical empathy among learners. By using simulations, virtual museum tours, and documentary videos, students are able to place themselves in the shoes of historical figures, gaining a more nuanced understanding of diverse historical contexts. Historical empathy is crucial in helping students appreciate different cultures, political systems, and societal evolutions. Such tools also stimulate collaborative learning as students work together on digital projects, participate in virtual discussions, and share insights from digital resources, thereby improving their teamwork and communication skills. At a global level, the significance of



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digital tools in enhancing humanities education has been emphasized by scholars such as Bhatt and Chauhan (2020). Their research showed that digital learning tools bridge the gap between theoretical content and practical understanding. In History classes, this means that rather than memorizing dates and events, students engage critically with primary sources, interpret visual artifacts, and experience reconstructed historical environments virtually. These active learning strategies not only improve academic achievement but also prepare students for the demands of the 21st-century knowledge economy, where digital literacy, critical thinking, and cultural awareness are increasingly valuable skills.

Conclusion

Digital technology tools are increasingly being adopted for history learning in Offa secondary schools, though access and utilization vary across different tools. Basic and widely available tools like YouTube and online educational platforms are commonly used, while advanced resources such as digital archives and augmented reality remain underutilized due to infrastructural and technical constraints. Additionally, digital technology has played a pivotal role in enhancing history learning by making lessons more interactive, visual, and accessible. Students believe these tools increase their engagement, understanding, and retention of historical content. This suggests that digital tools have transformative potential if well integrated into the curriculum and classroom practices.

Recommendations

1. Students should actively engage with digital tools like online archives, history apps, and videos to supplement their classroom learning.
2. Teachers should integrate digital content into their lessons to make history teaching more practical and relatable.
3. Parents should support their children by providing access to digital devices and encouraging educational usage.

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Comparative Assessment of Institutional Reforms and Insecurity on Sustainable Economic Development in Nigeria

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Abstract

This study investigates the comparative assessment of institutional reforms, insecurity on sustainable economic development in Nigeria. Despite numerous governance reform initiatives, Nigeria continues to experience weak institutional performance, corruption, and persistent insecurity that undermine sustainable growth. The study adopts an ex-post facto research design and utilizes secondary time-series data sourced from the World Bank's World Development Indicators (WDI) and Worldwide Governance Indicators (WGI), the Global Terrorism Database (GTD), the Uppsala Conflict Data Program (UCDP), and the Numbeo Crime Index. Descriptive and correlation analyses were applied to examine the effects of institutional quality and insecurity on economic sustainability, proxied by real GDP growth and adjusted net savings. Findings reveal that periods of heightened insecurity, particularly between 2011 and 2017, coincided with declines in GDP growth and savings, while indicators of governance effectiveness, control of corruption, and regulatory quality remained persistently low. This pattern indicates that insecurity adversely affects investment and productivity, whereas institutional reforms exert a weak but positive influence on economic performance. The study concludes that economic sustainability in Nigeria is strongly dependent on institutional efficiency and national security. It recommends strengthening governance capacity and accountability, integrating security operations with socio-economic development programmes, diversifying the economy beyond oil dependence, and enhancing the rule of law and fiscal transparency. Effective coordination between institutional reform and security policy is essential to achieving inclusive, resilient, and sustainable economic growth in Nigeria.

Key words: Economic Sustainability, Institutional Reform, and Insecurity

Introduction

Institutional reforms and insecurity are two dominant forces shaping Nigeria's economic trajectory. Despite decades of governance restructuring and reform programmes, Nigeria continues to grapple with institutional inefficiencies, corruption, and weak regulatory frameworks that undermine sustainable economic growth (Alika, 2023; Ukwueze & Aguegbah, 2018). Meanwhile, insecurity manifested in terrorism, banditry, militancy, and communal clashes continues to erode investor confidence, disrupt production, and displace labour and capital across regions (Onime, 2018; Ozoh, Madueke, Okeke & Anisiobi, 2021). Institutional reforms, when effectively implemented, strengthen governance structures, enhance transparency, promote the rule of law, and improve efficiency in public administration (Akindele, 2020). These reforms are crucial for maintaining a stable environment in which economic activities can flourish. However, Nigeria's reform efforts are often hindered by systemic corruption, political interference, and weak enforcement mechanisms (Akindele, 2020). The persistence of insecurity further compounds these challenges, diverting resources from development projects into security expenditure and discouraging both domestic and foreign investment (Onime, 2018; Yusuf & Moh, 2022). This study examines the comparative assessment of institutional reforms and insecurity on sustainable economic development in Nigeria. It aims to determine the extent to which governance quality and security conditions impact long-term economic stability and growth.

Statement of the Research Problem

Weak institutions, corruption, and rising insecurity have hindered Nigeria's pursuit of sustainable economic growth. Despite several institutional reforms, governance inefficiencies and widespread violence, such as terrorism, banditry, and oil theft, continue to undermine investment, productivity, and resource allocation (Ozoh et al., 2021; Onime, 2018). While previous studies have examined the effects of either institutional quality or insecurity on economic growth (Alika, 2023; Onime, 2018), few have jointly analysed their combined influence on financial sustainability. This study, therefore, seeks



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to fill this gap by investigating how institutional reforms and insecurity interact to affect Nigeria's economic sustainability between 2000 and 2023.

Objectives of the study

1. To examine the relationship between institutional reforms and economic sustainability in Nigeria.
2. To analyse the impact of insecurity on Nigeria's economic growth and stability
3. Investigate the combined influence of institutional reforms and insecurity on Nigeria's economic sustainability

Research Questions

1. What is the effect of institutional reforms on Nigeria's economic sustainability?
2. How does insecurity influence economic growth and stability in Nigeria?
3. In what ways do institutional reforms and insecurity interact to affect economic sustainability?

Review of Literature

Institutional Reforms and Institutional Quality

Institutional quality refers to the effectiveness of formal rules, regulatory frameworks, governance practices, judicial and administrative capacity, property rights enforcement, and public-sector accountability (North, 1990). In the Nigerian context, institutional reforms encompass changes such as regulatory restructuring, public-sector performance improvement, anti-corruption initiatives, transparency and accountability mechanisms, and legal framework strengthening. For instance, one study finds that higher institutional quality in Nigeria (proxied by indicators such as regulatory quality, rule of law, and ease of doing business) is positively related to economic performance. Institutional reforms are intended to enhance institutional quality by: Reducing transaction costs and uncertainties for economic actors; Enabling efficient resource allocation; strengthening governance capacity to implement and enforce policies and improving investor confidence through predictable policy and rule enforcement.

However, Akindele (2019) reports that while the rule of law and contract enforcement positively affect growth in the long run, corruption remains a significant drag. Similarly, Igbakula et al. (2021) found that institutional quality harmed economic growth over 2001-2019 in Nigeria, suggesting complex dynamics and perhaps measurement/implementation issues. The implication is that institutional reforms cannot be treated as automatic levers for growth; their value depends on enforcement, complementarity with other policies, and context (e.g., capacity, political will).

Economic Sustainability

Economic sustainability refers to growth that is stable, inclusive, resilient to shocks (including security shocks), and supports employment, productivity, and investment over the long term. It entails not just short-term GDP growth but growth that can be maintained without depleting human, natural, or institutional capital, and that is not undermined by recurrent crises (e.g., security, fiscal instability) (Cerra & Chaudhry, 2021; McKinsey, 2022). In Nigeria, economic sustainability faces headwinds from institutional weaknesses (weak public institutions, corruption, policy volatility) and from insecurity (which disrupts economic activity, increases risk, and crowds out investment). The conceptual linkage is that if institutions are weak, they cannot mediate shocks (including security shocks) or implement reforms that build resilience; if insecurity is high, it undermines institutional reforms and reduces economic sustainability (Bayode, 2023; Onime, 2018).

Insecurity and Economic Performance

Insecurity is used broadly to cover armed conflict, terrorism, banditry, communal violence, resource-based conflict (e.g., farmer–herder clashes), and large-scale criminality. In the Nigerian context, these include the insurgency in the northeast, banditry in the northwest/central belt, militant activity in the Niger Delta, and farmer–herder conflicts. Insecurity affects economic performance through multiple channels, such as disruption of agricultural production, displacement of labour, declines in investment, and diversion of public resources to security (Adepoju, Oluwasegun & Osijo 2021). Insecurity affects economic performance through multiple channels. The relationship between institutions, security, and economic sustainability has attracted global and regional attention. North (1990) emphasised that institutions, the formal and informal rules governing societies, play a central role in economic performance. Effective institutional reforms enhance governance, promote accountability, and create an enabling environment for innovation and investment. Conversely, weak institutions often result in inefficiencies, corruption, and policy instability, which hinder sustainable growth. Empirical studies have



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revealed an inverse relationship between insecurity and growth, suggesting that regions with heightened insecurity experience declines in GDP and investment inflows. Recent research, such as Eze and Okafor (2021), argues that effective institutional reforms can mitigate these negative effects by enhancing law enforcement, judicial efficiency, and public accountability. This study builds on this literature by integrating institutional reforms and insecurity within a unified framework to assess their combined influence on Nigeria’s economic sustainability, using empirical evidence and time-series econometric techniques.

Methodology

The study adopts an ex-post facto research design, which is appropriate for examining cause-and-effect relationships using historical data. Since the variables’ economic growth, institutional reforms, and insecurity cannot be manipulated by the researcher, the design allows the assessment of existing trends and their interrelationships over time. The study focuses on Nigeria between 2000 and 2023, a period marked by significant economic reforms, rising insecurity, and changing governance indicators. This study relies exclusively on secondary time-series data obtained from reputable international and national data repositories, such as the Worldwide Government Indicators WGI, Global Terrorism Database GTD, Uppsala Conflict Data Program UCDA and Numbeo Crime Index. These datasets were selected for their reliability, global comparability, and annual consistency across the study period. Data analysis was carried out using EViews 12 and STATA 16 statistical software. Graphical representations were used to illustrate variable trends (e.g., GDP growth, adjusted net savings, terrorism incidents). Correlation matrices were computed to identify potential multicollinearity among explanatory variables.

Presentation of Results

Research Question 1

What is the effect of institutional reforms on Nigeria’s economic sustainability?

Table 1. Institutional Reforms, Insecurity, and Economic Sustainability Indicators in Nigeria (2000–2023)

Year	GDP Growth (%)	Adjusted Net Savings (%NIG)	Government Effectiveness	Control of Corruption	Regulatory Quality	Terror Incident	Conflict Deaths	Crime Index
2000	5.3	14	-0.35	-0.45	-0.5	20	100	48
2001	5.2	15	-0.32	-0.47	-0.48	30	150	47
2002	4.4	14	-0.38	-0.48	-0.47	40	200	49
2003	9.6	16	-0.36	-0.46	-0.46	50	250	50
2004	6.6	18	-0.34	-0.49	-0.48	60	300	51
2005	6.9	19	-0.33	-0.5	-0.49	80	400	52
2006	6	18	-0.4	-0.52	-0.5	120	600	53
2007	6.8	20	-0.42	-0.53	-0.51	150	800	54
2008	6.3	21	-0.44	-0.54	-0.52	200	1000	55
2009	7	20	-0.45	-0.55	-0.53	250	1200	56
2010	8	18	-0.47	-0.57	-0.55	300	1500	57
2011	4.9	16	-0.5	-0.59	-0.57	400	1800	58
2012	4.3	15	-0.52	-0.61	-0.59	500	2200	59
2013	6.7	14	-0.55	-0.63	-0.61	700	2500	60
2014	6.3	12	-0.57	-0.65	-0.63	900	3000	61
2015	2.7	10	-0.6	-0.67	-0.64	1100	3500	62
2016	-1.6	8	-0.62	-0.69	-0.65	1300	4000	63
2017	0.8	9	-0.63	-0.7	-0.63	1400	4200	62
2018	1.9	10	-0.6	-0.68	-0.61	1500	3800	61
2019	2.2	11	-0.58	-0.66	-0.59	1600	3400	60
2020	-1.8	9	-0.65	-0.64	-0.58	1500	3100	59
2021	3.6	10	-0.6	-0.6	-0.55	1200	2800	58
2022	3.3	11	-0.55	-0.58	-0.52	1000	2500	57



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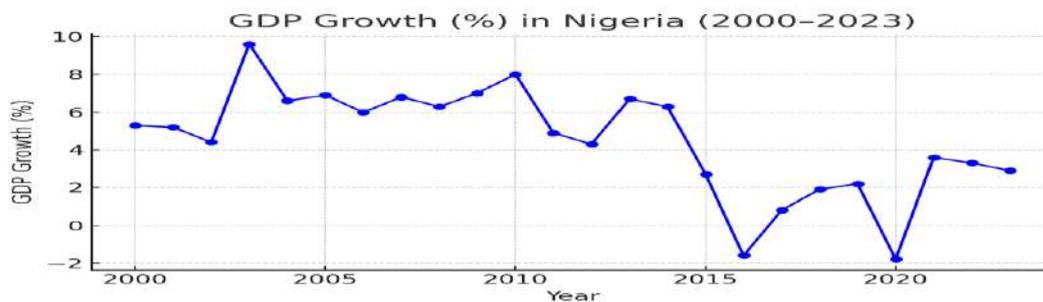
2023	2.9	12	-0.53	-0.56	-0.5	800	2000	56
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Source: Worldwide Government Indicators (WGI 2021), Global Terrorism Database (GTD, University of Maryland 2024), Uppsala Conflict Data Program (UCDA 2024) and Numbeo Crime Index (2024).

The dataset presents annual time-series indicators that capture Nigeria’s institutional reforms, insecurity levels, and economic sustainability between 2000 and 2023.

The dependent variable, *economic sustainability*, is represented by Real GDP Growth (%) and Adjusted Net Savings (% of GNI), while the independent variables include institutional quality measures, Government Effectiveness, Control of Corruption, and Regulatory Quality, and insecurity indicators such as Terrorism Incidents, Conflict-Related Deaths, and Crime Index.

Table 2: GDP Growth



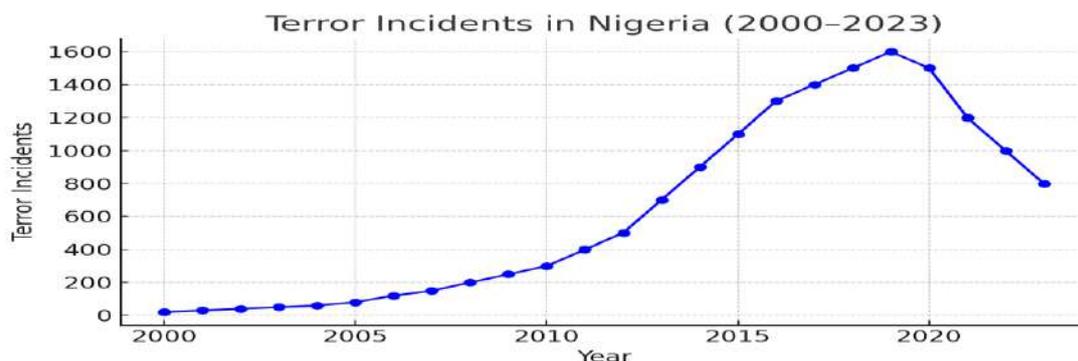
Source: Researcher’s computation (2025) using data from World Bank, *World Development Indicators (WDI, 2024)*.

The GDP growth trend shows significant fluctuations, with peaks in the early 2000s and declines during economic recessions in 2016 and 2020. The recent years show signs of moderate recovery, suggesting partial economic resilience despite insecurity challenges. From the analysis, Nigeria’s real GDP growth showed fluctuating trends, with notable declines during periods of heightened insecurity (2015–2017, 2020–2021). Similarly, adjusted net savings remained low or negative in several years, suggesting unsustainable economic practices. The institutional indicators reveal persistent governance challenges, low scores in government effectiveness and control of corruption, indicating weak institutional reforms despite policy efforts. Meanwhile, terrorism incidents and conflict-related deaths, as derived from the Global Terrorism Database, spiked significantly between 2011 and 2016, corresponding with the escalation of Boko Haram activities in northern Nigeria. The observed pattern suggests a negative relationship between insecurity and economic sustainability, and a positive but weak linkage between institutional reforms and economic performance. This aligns with the findings of Akinlo and Apanisile (2015), who reported that insecurity reduces economic output in Nigeria, and the World Bank (2022), which emphasised that governance and security are critical determinants of sustainable development.

Research Question 2

How does insecurity influence economic growth and stability in Nigeria?

Table 3: Terror Incidents





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Source: Researcher’s computation (2025) using data from *Global Terrorism Database (GTD, University of Maryland, 2024)*.

Terror incidents surged significantly from 2009, coinciding with the rise of insurgency in Northern Nigeria. The peak periods around 2014–2016 mark the height of Boko Haram activity, posing threats to economic stability.

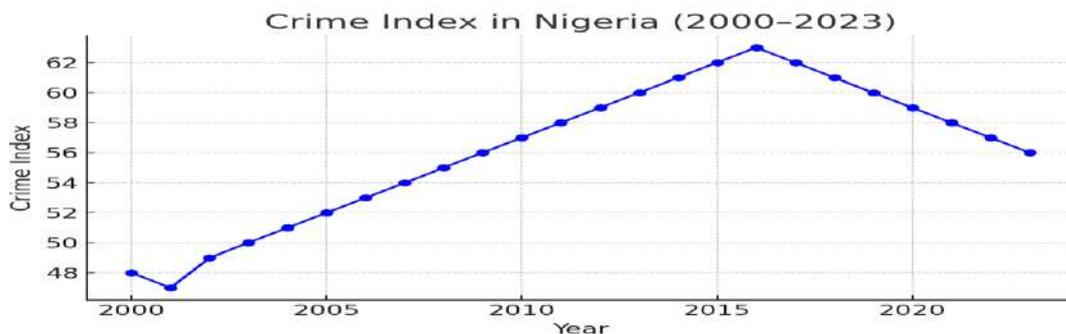
Table 4: Conflict-related Deaths



Source: Researcher’s computation (2025) using data from *Uppsala Conflict Data Program (UCDP, 2024)* and *Global Terrorism Database (GTD, 2024)*.

Conflict-related deaths increased sharply during periods of intensified insurgency and communal clashes. This trend negatively affects investment, agricultural productivity, and human capital development.

Table 5: Crime Index



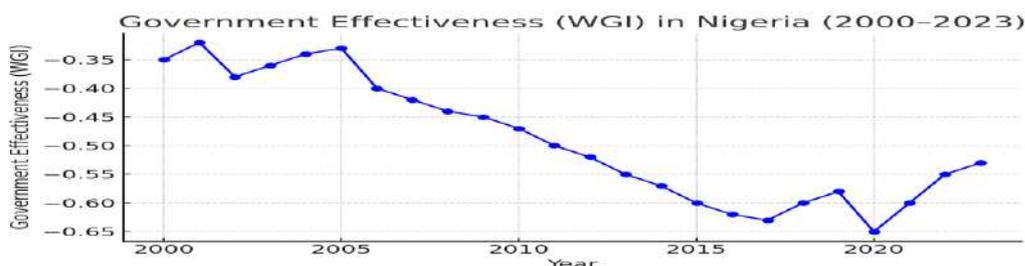
Source: Researcher’s computation (2025) using data from *Numbeo Crime Index (2024)* and *National Bureau of Statistics (NBS, 2024)*.

The crime index shows a rising pattern, suggesting increasing insecurity and lawlessness. This undermines investor confidence, reduces productivity, and imposes additional costs on businesses.

Research Question 3

In what ways do institutional reforms and insecurity interact to affect economic sustainability?

Table 6: Government Effectiveness (WGI)



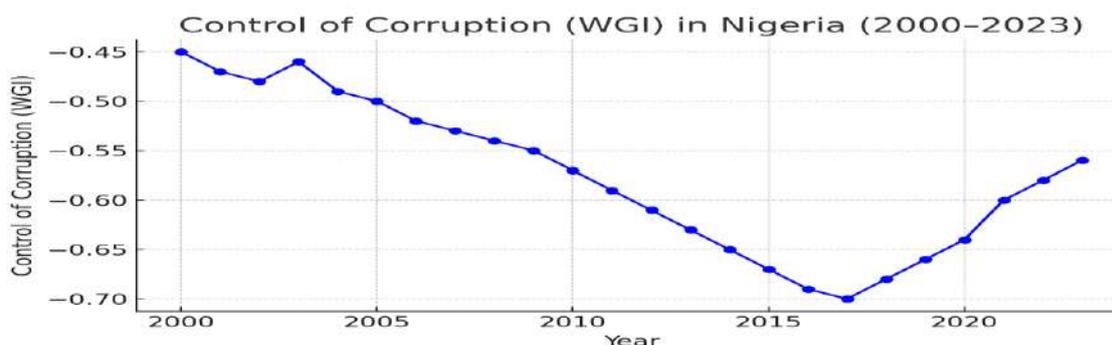


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Source: Researcher’s computation (2025) using data from World Bank, *World Development Indicators (WDI, 2024)*.

Government effectiveness remains consistently negative, reflecting weak institutional performance, bureaucratic inefficiency, and low public sector service delivery. However, slight improvements in recent years may indicate gradual governance reforms.

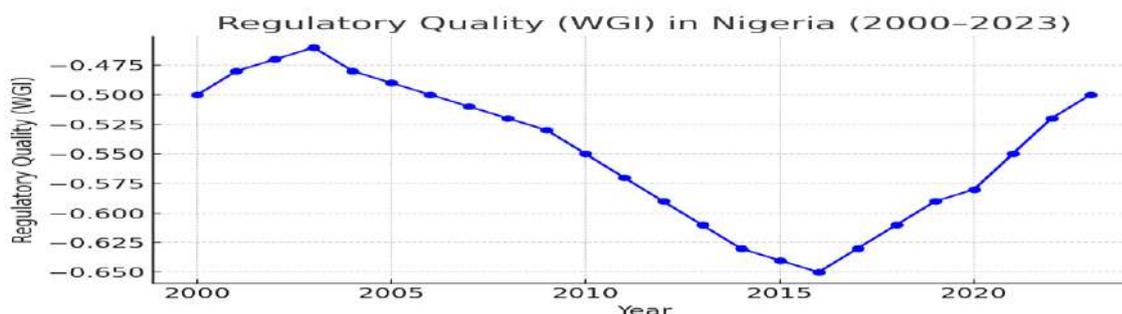
Table 7: Control of Corruption (WGI)



Source: Researcher’s computation (2025) using data from World Bank, *Worldwide Governance Indicators (WGI, 2024)*.

The control of corruption index reveals persistent governance weaknesses. Corruption has remained a key barrier to economic growth and development in Nigeria, with limited progress despite anti-corruption campaigns.

Table 8: Regulatory Quality (WGI)



Source: Researcher’s computation (2025) using data from The World Bank, *Worldwide Governance Indicators (WGI, 2024)*.

Regulatory quality shows a consistent negative value, signifying poor policy implementation and ineffectiveness in enforcing economic regulations, which discourages private sector confidence. There should be policy intervention to enhance efficiency and thus improve security outcomes for sustainable growth.

Discussion of Findings

Institutional Reform Indicators and Economic Sustainability

The results show that governance-related indicators, namely, Government Effectiveness, Control of Corruption, and Regulatory Quality, remained persistently negative or weak across the 2000–2023 period. This aligns with the trend in Nigeria where institutional capacity and reform have consistently lagged (Igbakula, Ushahemba & Adoo, 2021). That institutional quality appears so weak is consistent with the finding in the study by Igbakula et al., that institutional quality exerted a *negative* influence on economic growth in Nigeria over 2001–2019. The fact that institutional reform indicators did not improve significantly suggests that policy reforms have not fully translated into functional institutional improvements, for instance, in public service delivery, regulatory enforcement, or corruption control. The weak positive linkage between these indicators and economic sustainability (proxied by GDP growth and adjusted net savings) suggests reforms are necessary but not sufficient. The literature supports this: institutional reforms succeed when accompanied by enforcement capacity, political will, and complementary policies. Impact of Insecurity on Economic Sustainability



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The analysis shows clear spikes in Terror Incidents and Conflict Deaths: notably between around 2011 and 2016, coinciding with the rise of the insurgency in the northeast. During these periods, GDP growth and adjusted net savings visibly decline. This strongly suggests a negative relationship between insecurity and economic sustainability. Empirical studies confirm this pattern: for example, Yusuf and Mohd (2023), Agogbbua, Magbatogu, and Nzewi (2022) found that insecurity significantly retards growth in Nigeria by reducing investment, capital formation, and productivity. Similarly, Onime (2018) found that insecurity undermines economic growth in Nigeria by drying up investments, increasing unemployment, and reducing government revenues. The pattern in data growth declines during high-insecurity years (2015-2017, 2020-2021) accords with this. The adjusted net savings measure (a sustainability indicator) falls or remains low in those years, pointing to diminished capacity for long-term sustainable growth.

Interaction of Institutional Reform and Insecurity

The findings imply that the interplay between weak institutions and high insecurity may produce a compounding effect: weak institutions fail to contain insecurity and to implement reforms effectively, while insecurity undermines institutional reform efforts by diverting resources and reducing capacity. Thus, the two phenomena reinforce each other in undermining economic sustainability. Literature supports the dual-channel effect: corruption, weak rule of law, and poor governance are both drivers of conflict and obstacles to reform implementation (Ezeala, Agwaramgbo & Okeke, 2024). Moreover, the weak positive effect of institutional reform in your data could be due to the high-insecurity environment: institutional improvements may only deliver results if security conditions are stable. This is consistent with the view that reforms are context-sensitive: without peace and stability, institutional change may be too fragile to deliver sustainable economic impact.

Implications for Economic Sustainability

Economic sustainability, as defined by growth that is inclusive, resilient, and not depleting institutional capital, appears compromised in the Nigerian case. The declining trend in adjusted net savings signals long-term risk: resource depletion (including human capital lost to violence), weak institutions, and security shocks are eroding Nigeria's capacity to sustain growth. The literature emphasises that sustained growth requires both strong institutions and stable security conditions. Given the data trends and empirical findings, one could infer that Nigeria's growth is episodic rather than smooth and resilient: peaks in the early 2000s give way to decline when insecurity intensifies and institutional quality remains low

Conclusion

This study examined the comparative assessment of institutional reforms and insecurity on sustainable economic development in Nigeria from 2000 to 2023. The findings reveal that Nigeria's economic trajectory has been significantly constrained by persistent institutional weaknesses and escalating insecurity. Although institutional reforms were introduced to strengthen governance structures and promote transparency, their impact on economic sustainability remains limited due to weak implementation, corruption, and poor policy continuity. Empirical patterns from the analysis show that periods of heightened insecurity, particularly between 2011 and 2017, coincided with sharp declines in GDP growth and adjusted net savings. This implies that insecurity undermines investment confidence, disrupts production activities, and diverts scarce public resources to security expenditure, thereby reducing the prospects for long-term sustainability. Moreover, indicators such as government effectiveness, control of corruption, and regulatory quality remained persistently negative throughout the period, underscoring Nigeria's structural governance deficiencies. In essence, the study concludes that economic sustainability in Nigeria is critically dependent on the quality of institutions and the level of national security. Without robust institutional reforms that promote accountability, transparency, and the rule of law, and without decisive actions to address insecurity, the goal of sustainable economic development will remain elusive. Institutional reform and security management are therefore complementary, and their synergy is essential to achieving inclusive and resilient growth.

Recommendations

1. The government should strengthen institutional Capacity, Governance System, and combine security operations with socio-economic interventions, such as poverty reduction, youth employment, and community engagement, to address the root causes of insecurity.
2. Similarly, the government should Improve Fiscal Transparency and Resource Management in all sectors, as these would reduce corruption and insecurity
3. The government should enhance the rule of law and judicial effectiveness to boost citizens' confidence



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4. Priority should be given to skills development and healthcare, while diversifying the economy will build resilience against shocks

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Correlation between Facilities Maintenance and Administrative Effectiveness in Federal Universities in North-West, Nigeria

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Abstract

This study examined facilities maintenance and administrative effectiveness in federal universities in North-West, Nigeria. The study adopted correlational Research Design. Three objectives and three research questions were raised to guide the study. Three null hypotheses were tested at $\alpha \leq 0.05$ levels of significance. Two instruments: Facilities Maintenance Questionnaire (FMQ) and Administrative Effectiveness Questionnaire (AEQ) were adapted. The instruments were validated by experts from the Department of Educational Foundations and Faculty of Education and Extension Services. The instruments exhibited reliability coefficients of 0.75 and 0.79. Population of the study comprised of 15,700 staff of Federal Universities in North-West, Nigeria with a sample size of 390 respondents proportionately drawn for the study. Null hypotheses were tested using Pearson Product Moment Correlation Coefficient. The findings of the study revealed high level of facilities maintenance, a significant and positive relationship between Facilities Maintenance and Administrative Effectiveness among the Federal Universities in North-West, Nigeria. Based on these findings, the study recommended regular and systematic cleaning schedules for all academic and administrative facilities, establishment of proactive maintenance and repair system and promotion of optimal and efficient use of available facilities to ensure administrative effectiveness among federal universities in North –West, Nigeria.

Key Words: Facilities Maintenance, Administrative Effectiveness, Facilities Cleanliness and Facilities Repair

Introduction

Ensuring the quality of education and services in federal universities is paramount for the reputation and the overall development of students and staff. Educated individuals are essential for formulating effective policies in areas such as healthcare, education, environment, and technology, leading to overall societal development. Higher education can promote social cohesion and reduce inequality. Universities provide opportunities for individuals from diverse backgrounds to interact, fostering understanding and tolerance among different social, ethnic, and religious groups. This interaction can lead to a more harmonious society, contributing to peace and stability. Facilities play a vital role in shaping the overall university experience. A positive and inclusive campus environment directly translates into higher productivity through administrative effectiveness, both in and out of the classroom.

Facility maintenance is essential to creating a positive learning atmosphere, promoting students' general well-being, and increasing administrators' output. It is depressing to see university facilities in such horrible shape because of the nonchalant attitude of both those in charge and people who utilize them. Facilities, ranging from classrooms and laboratories to administrative buildings and recreational spaces, form the backbone of any educational institution (Manga, 2011). Nations today depend increasingly on knowledge, ideas, and skills which are produced through researchers in the universities. Nations invest in university education because society expects it to contribute in producing highly skilled personnel in technology, engineering, management and other professions (Muogbo & Akpunonu, 2017). Fadipe, (2010) defined material resources as facilities provided for staff and students to upgrade their effectiveness in teaching and learning. Material resources include the building (classrooms, libraries, laboratories, offices), machines, workbenches, equipment, tools, consumable items, and other support physical resources for teaching and research which the instructor or teacher manipulates in order to cause learning to occur. Administrative efficiency is a yardstick for the smooth functioning of educational institutions. This aspect includes leadership effectiveness, resource allocation, decision-making processes, and overall institutional governance. Investigating the effectiveness of administrators in federal universities in the North West sheds light on the challenges and opportunities in managing academic and administrative affairs. Analyzing leadership styles, training programmes, and decision-making structures becomes essential for optimizing the administrative



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machinery. Effectiveness in the university depends on adequate human and material resources put in place. Human resources are the most important resource out of the resources required for the sustainable development of university which is brought by productivity in the educational system. Human resources in the university's educational system is classified into teaching and non-teaching staff (Ekundayo & Alonge, 2013). Onah, (2012) stated that human resources are the solution to a fast socio-economic growth and resourceful service delivery. Every educational system at every level depends greatly on human resources for carrying out of its programme. Arising from the above, this study seeks to investigate facilities maintenance and administrative effectiveness in federal universities in north-west zone, Nigeria

Statement of the Problem

Many federal universities in the North-West suffer from substandard maintenance of their facilities, including classrooms, laboratories, libraries, and infrastructure. This inadequacy poses a threat to the overall learning environment and hampers the institutions' ability to meet the evolving needs of students and staff. Administrators in these universities face challenges in maintaining optimal efficiency levels. This could be attributed to factors such as insufficient resources, outdated administrative processes, and lack of professional development opportunities. The declining productivity of administrators has a cascading effect on the overall efficiency and effectiveness of the university's operations. The cumulative effect of these issues is a direct threat to academic excellence. Students may not receive the best possible education, staff may face challenges in conducting impactful research, and the overall reputation of the universities may be compromised. Limited financial resources and inadequate funding by the government and the university management contribute significantly to the aforementioned problems. Addressing these challenges is crucial for the sustained growth and development of federal universities in the North West Zone, ensuring that they can fulfill their mission of providing high-quality education, fostering research, and contributing positively to the academic landscape in Nigeria.

Objectives of the study

The main thrust of this study is to find out:

1. The relationship between facilities cleanliness and administrative effectiveness among federal universities in North-West, Nigeria.
2. The relationship between facilities repair and administrative effectiveness among the federal universities in North-West, Nigeria.
3. The relationship between appropriate utilization of facilities and administrative effectiveness among the federal universities in North-West, Nigeria.

Research Questions

The following research questions guided the study:

1. What is the relationship between facilities cleanliness and administrative effectiveness among the federal university in North-West, Nigeria?
2. What is the relationship between facilities repair and administrative effectiveness among the federal universities North-West, Nigeria?
3. What is the relationship between appropriate utilization of facilities and administrative effectiveness among the federal universities in North-West, Nigeria?

Hypotheses

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

1. There is no significant relationship between facilities cleanliness and administrative effectiveness among the federal universities in North-West, Nigeria.
2. There is no significant relationship between facilities repair and administrative effectiveness among the federal universities in North-West, Nigeria.
3. There is no significant relationship between appropriate utilization of facilities and administrative effectiveness among the federal universities in North-West, Nigeria.

Methodology

This study adopted correlational research design in order to collect data on facilities maintenance and administrative effectiveness among federal universities in North-West, Nigeria. This type of research design explains simple relationship between two or more variables as rightly posited by Creswell (2017) that; a correlation research design is a design in which the researcher is interested in the extent to which two variables or more co-vary, that is where changes in one variable are reflected in changes in the other. The study comprised all the administrative, academic and non-academic staff from seven federal universities in North-west, Nigeria, one from each of the seven states of North-west, Nigeria.



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Thus, the target population of this study was fifteen thousand seven hundred (15,700) respondents, made up of three thousand nine hundred and twelve (3,912) administrative staff, seven thousand five hundred and eighteen (7,518) academic staff and four thousand, two hundred and seventy (4,270) non-academic staff. In this study, four states were selected at random these were: Kaduna State, Kano State, Kebbi State and Sokoto State. The researcher selected only one federal university in each of the four selected states. The sample size of 390 staff was drawn from the population of 15,700 based on Slovin's formula. Random sampling technique was used to determine the number of participants to be drawn from each university. Proportionate sampling technique was used to select the participants within each university. The questionnaire was made up section A which sought information on respondents' bio data, while section B was 30-item questionnaire to determine administrative effectiveness based on facilities maintenance in federal universities in North-West, Nigeria. The study used two structured questionnaires for data collection, these are: (a) Facilities Maintenance Questionnaire (FMQ) (b) Administrative Effectiveness Questionnaire (AEQ). The researcher adopted a modified 5 point Likert-type scale in which each item of the questionnaire was responded to in one of the five response options of Very High (VH) = 5, High (H) = 4, Moderate (M) = 3, Low (L) = 2, or Very Low (VL) = 1. The mean score of 3.0 points and above on the scale of 5.0 was used as the cut-off point for satisfactory level of facilities maintenance while below 3.0 mean is unsatisfactory level of facilities maintenance in federal universities in North-West, Nigeria. The instruments were subjected to face and content validity by experts for their inputs and observation from different areas of specialization in the Department of Educational Foundations. The reliability of the instruments was determined using test-retest method. The computed results produced reliability indices of 0.75 and 0.79. In answering the research questions, the researcher used the descriptive statistics of Mean and Standard Deviation (SD) staff to answer the research questions. The t-test was used to test the null hypotheses at 0.05 level of significance.

Presentation of Results

Table 1: The level of Facility Maintenance In The Federal Universities in North-West, Nigeria.

S/N	Item	VH	H	M	L	VL	Mean	SD	Decision
1.	Facilities Cleanliness	74	322	1,220	1,338	796	3.66	0.949	Moderate
2.	Facilities Repair	60	242	1,197	1,656	645	3.68	0.876	Moderate
3.	Appropriate utilization of Facilities	150	460	1,309	1,186	745	2.60	1.05	Low Level
	Total	284	1,024	3,726	4180	2,186	3.31	0.95	Moderate

Table 1 revealed that a mean score of 3.66 with standard deviation of 0.94 indicating a moderate level of facilities cleanliness in the university community while facilities repair showed a mean score of 3.68 with standard deviation of 0.87 indicating a moderate level of facilities repair in the university community. Appropriate utilization of facilities showed a mean score of 2.60 with standard deviation of 1.05 indicating a low level of appropriate utilization of facilities in the federal universities in North-West, Nigeria. The overall mean score of 3.31 with standard deviation of 0.95 indicating a moderate level of utilization of facilities in federal universities in North-West, Nigeria. The results of the analyses of the null hypotheses are presented below. Here, the responses for facilities cleanliness, facilities repair, and appropriate utilization of facilities as they relate to administrative effectiveness in federal universities in North West, Nigeria.

Test of Hypotheses

Null Hypothesis 1: There is no significant relationship between facilities cleanliness and administrative effectiveness among the federal universities in North-West, Nigeria.

Table 2: Relationship Between Facilities Cleanliness and Administrative Effectiveness Among the Federal Universities in North-West, Nigeria.

Variables	N	Mean	SD	df	r-Cal	p-value	Decision
Facilities Cleanliness	385	3.665	.592	383	0.171	0.001	H ₀₁ Rejected



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highlighted that a well-maintained and clean facilities creates a conducive environment for staff and students, which enhanced institutional performance. Equally this study agreed with the findings of Musa and Bello (2021), on factors determining administrative effectiveness in secondary schools in south-west Nigeria. Similarly, Abubakar, Usman, and Suleiman (2022) noted that proper upkeep and cleanliness of university facilities boost staff morale and organizational effectiveness. These studies collectively suggest that facilities cleanliness is not only important for hygiene and comfort but also strengthens managerial and administrative effectiveness in higher educational institutions.

However, this finding disagrees with the declaration of Taiwo and Oladipo (2020), who argued that facilities cleanliness alone does not necessarily improve administrative effectiveness unless in conjunction with adequate funding, staff motivation, and effective leadership. This implies that while cleanliness is a critical determinant of administrative efficiency, other institutional factors are equally necessary to maximize managerial outcomes. This finding also contrasts with the study by Eze and Chukwu (2021), who found that inadequate staffing and poor administrative structures has stronger impact on administrative effectiveness than the state of facilities. This suggests that managerial effectiveness may depend more on human and organizational resources than merely on facility cleanliness. Similarly, the finding disagrees with the findings of Fashiku (2018), who noted that leadership styles and communication patterns of administrators has greater effect on institutional performance than physical facility conditions. While cleanliness ensures a conducive environment, the study emphasized that effective leadership is more critical in enhancing administrative outcomes. The finding also disagrees with the findings of Okoro and Nwankwo (2019), who examined the effect of ICT integration on administrative effectiveness in Nigerian universities and found that access to digital tools and technology significantly improves management efficiency, indicating that technological resources may be more influential than cleanliness in determining administrative effectiveness.

The study revealed that institutions that consistently repairs and maintains their facilities experience fewer operational bottlenecks and higher organizational effectiveness. And also findings of this study aligned with Ojo and Adeyemi (2019), who observed that misuse or underutilization of facilities led to inefficiencies in workflow and administrative coordination. This implies that while utilization is critical, administrative effectiveness also depends on broader organizational factors. This finding also contrasts with Eze and Chukwu (2021), who found that structural and procedural issues within administration had a greater influence on efficiency than resource utilization.

Conclusion

From the study, correlational analyses revealed that facilities maintenance which involves facilities cleanliness, facilities repair and appropriate utilization of facilities have significant and positive relationship with administrative effectiveness among the federal universities in North-West, Nigeria.

Recommendations

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

1. Federal universities should institutionalize regular and systematic cleaning schedules for all academic and administrative facilities. This should include monitoring mechanisms to ensure compliance and maintaining high standards of hygiene, as clean facilities positively impact administrative effectiveness and the overall learning environment in the North-West, Nigeria.
2. University management should establish a proactive maintenance and repair system, including periodic inspections and prompt repairs of broken or malfunctioning facilities.
3. Administrators should develop policies and training programmes that promote optimal and efficient use of available facilities in federal universities in North –West, Nigeria.

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Assessment of Digital-Technology Skills on Long-Distance Learning among Educational Technology Postgraduate Students in Tai Solarin University of Education, Ijagun, Ogun State, Nigeria

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Abstract

The study was an assessment of digital-technology skills on long-distance learning among Educational Technology Postgraduate students in Tai Solarin University of Education, Ijagun, Ogun State, Nigeria. Three research questions guided the study. A descriptive research design of survey type was used. The population for this study comprised of all Educational Technology postgraduate students in Tai Solarin University of Education, Ijagun, Ogun State, Nigeria. Only 30 Educational Technology postgraduate students were selected as sample size using purposive sampling technique. Researchers developed questionnaire; titled: students' Digital Technology Skills and Effective Long-Distance Learning Questionnaire (DTSELLQ) was used for data collection with reliability coefficient ($r = .90$). Mean and standard deviation were used for analyzing research questions 1, 2 and 3 while research question 4 was answered using Pearson Product Moment Correlation (PPMC). The findings of the study revealed that information and data literacy, communication, collaboration, content creation and safety and problem-solving were among germane students' digital technology skills needed for effective long-distance learning. Technical difficulty, inadequate access to technology, unreliable internet connectivity, lack of face-to-face interaction and reduction in student engagement and difficulties in building a strong learning community were among the issues facing effective long-distance learning. There was relationship between students' digital technology skills as determinants for effective long-distance learning. It was recommended that there should be effective mechanism to overcome the challenges associated with mastering digital literacy skills among students in tertiary institutions.

Keywords: Student, Digital Technology Skills, Long-Distance Learning

Introduction

Distance learning, also known as distance education or online learning, is a method of education where students and instructors are separated by physical distance and communicate through various technologies, primarily online. It allows students to learn remotely, accessing course materials, lectures, and assessments through online platforms, rather than physically attending a traditional classroom. The core feature is that the instructor and learner are not in the same physical location during instruction. Distance learning relies heavily on technology like the internet, learning management systems (LMS), video conferencing, and online resources to deliver course content and facilitate communication. Distance learning offers flexibility in terms of time and location, allowing students to study at their own pace and schedule, often accommodating work and other commitments. It can make education more accessible to students who might not be able to attend traditional classes due to geographic limitations, physical disabilities, or work schedules (McBrien et al., 2019). Distance learning can encompass a wide range of formats, including fully online courses, hybrid courses (combining online and in-person elements), and even correspondence courses delivered via email. Many distance learning programs utilize online platforms like Moodle, Blackboard, or Canvas to deliver course materials, facilitate discussions, and manage assignments. Long distance learning allows students to complete high school, continuing education and college courses without physically being on campus. Classes may be taken online, through audio or videocassette instruction or by email. In conclusion, distance learning provides a flexible and accessible alternative to traditional education, utilizing technology to connect students and instructors across geographical boundaries (Onasanya, 2024).

Distance learning offers numerous benefits, including flexibility, cost savings, and access to a wider range of educational opportunities. It allows students to learn from anywhere with an internet connection, at their own pace, and often at a lower



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cost compared to traditional learning. It also provides access to a wider variety of courses and programs, including those not available locally. Distance learning allows students to study from anywhere with internet access, eliminating the need to commute to a physical campus and often offer asynchronous learning, allowing students to study at times that fit their individual schedules and commitments. Students can progress through coursework at their own speed, revisiting materials as needed and spending more time on challenging concepts. Furthermore, it can significantly reduce or eliminate costs associated with transportation, accommodation, and sometimes even textbooks. Some online programs offer more affordable tuition rates due to lower overhead costs compared to traditional institutions. It open doors to a wider range of courses and degree programges, including those offered by institutions not located nearby and offer personalized learning experiences, adapting to individual student needs and learning styles (Yusuf, 2023). Through distance learning, this can facilitate collaboration among students from diverse backgrounds and locations. Students must be proactive in managing their time and meeting deadlines, which can enhance their time management skills. Distance learning can help students develop essential digital literacy skills and prepare them for the increasingly remote and digital nature of the modern workforce. Distance learning can be particularly beneficial for students with disabilities, those with social anxiety, or those who face other barriers to traditional learning. However, the effectiveness of distance learning could be aided through digital technology skills (Akpan, 2017). Digital technology skills, also known as digital skills, encompass the abilities and knowledge needed to effectively use digital devices, software, and platforms. These skills range from basic computer literacy to more advanced proficiencies in areas like data analysis, cybersecurity, and digital communication. Essentially, they empower individuals to navigate, utilize, and create in the digital world (Reju & Jita, 2020).

The expansion of remote learning has been significantly aided by technological developments and students' learning is improved via multimedia resources, interactive learning materials, and virtual classrooms (Ozerbas & Erdogan, 2016). Digital technology will continue to advance, allowing remote learning to develop and offer ever-better learning options. Digital technology skills offer significant benefits to students in distance learning environments by enhancing learning experiences, improving technical proficiency, and expanding access to educational resources. These skills facilitate interactive lessons, promote personalized learning, and prepare students for future academic and professional endeavours. It allows for interactive elements like virtual field trips, online quizzes, and multimedia presentations, making lessons more engaging and reducing passive learning (Kissane et al., 2021). In distance learning, through digital technology skills, students gain access to a vast array of online resources, including digital libraries, educational websites, and interactive simulations, enriching their learning beyond traditional textbooks. Digital technology enables personalized learning experiences through adaptive learning platforms and tools that adjust to individual student needs and learning styles, allowing students to learn at their own pace. Distance learning necessitates the use of various digital tools, including learning management systems (LMS), communication platforms, and research tools, fostering digital literacy and technical proficiency (Mampane, 2020). The digital technology skills acquired through distance learning are highly transferable to various professional settings, making students more competitive in the job market (Yusuf, 2023). In distance learning, students become more self-directed and responsible for their learning, developing valuable time management and problem-solving skills. However, it is said that distance learning removes geographical limitations, connecting students with educators and peers from around the world. Students can access learning materials and participate in online classes at their convenience, balancing their studies with other commitments. Also, online courses/distance learning can be more affordable than traditional on-campus programmers reducing the financial burden of education (Yusuf, 2023). In conclusion, distance learning is also well known for online learning and it helps students to get familiar with technology. Students become more proficient in using the technology while learning.

Statement of the Problem

Distance learning offers students several key benefits, primarily revolving around flexibility, cost-effectiveness, and access to a wider range of learning opportunities. Students can learn at their own pace, manage their time more effectively, and balance their studies with other commitments, while developing important technical and self-management skills. However, despite the benefits, the issues of distance learning present several challenges for students, primarily revolving around reduced social interaction, difficulties with focus and motivation, and potential technical issues. These factors can impact academic performance, mental well-being, and overall engagement with the learning process. Also, many concerns have be raised in the literature on the effectiveness of distance learning, but less studies have been conducted on how



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students' digital technology skills could bring about effectiveness of digital learning. This study fill this gap by an assessment of digital-technology skills on long-distance learning among Educational Technology Postgraduate students in Tai Solarin University of Education, Ijagun, Ogun State, Nigeria.

Objectives of the Study

The main objective of the study is to examine students' digital technology skills as determinants for effective long-distance learning in Ogun State. Specifically, the study would to:

1. identify digital technology skills needed for effective long-distance learning among postgraduate students in Tai Solarin University of Education, Ogun State
2. examine the issues facing effective long-distance learning among postgraduate students in Tai Solarin University of Education, Ogun State;
3. find out the relationship between digital technology skills as determinants for effective long-distance learning among postgraduate students in Tai Solarin University of Education, Ogun State.

Research Questions

The following research questions would guide this study:

1. What are the digital technology skills needed for effective long-distance learning among postgraduate students in Tai Solarin University of Education, Ogun State?
2. What are the issues facing effective long-distance learning among postgraduate students in Tai Solarin University of Education, Ogun State?
3. Is there any relationship between digital technology skills on long-distance learning among postgraduate students in Tai Solarin University of Education, Ogun State?

Research Method

The study would use a descriptive research design of survey type. This design was considered very appropriate because the researchers intended to collect information from the selected respondents who would provide answer to the study objectives. The population for this study comprised of Educational Technology postgraduate students in in Tai Solarin University of Education, Ijagun, Ogun State, Nigeria. Only 30 Educational Technology postgraduate students would be used to sample size of the study. This would be selected using purposive sampling technique. The study would use researcher developed questionnaire; titled: students' Digital Technology Skills and Effective Long-Distance Learning Questionnaire (DTSELLQ). The questionnaire (DTSELLQ) requested responses on a four (4) – point scale format which was a modification of 5-point Likert scale. The responses rating scales are as follows: Strongly Agree (SA), Agree (A), Disagree (D) and Strongly Disagree (SD). The questionnaire would be into two sections A and B. Section A focus on demographic characteristics of the respondents, while section B focused on the related items on students' digital technology skills needed for effective long-distance learning; significance of effective long-distance learning and the issues facing effective long-distance learning. The initial draft of the instrument would be subjected to face and contents validity by the experts from the department of Educational Technology. All the issues raised were duly attended to in order to ensure its content, construct, and criterion validity. To ensure the reliability of the instrument, a test-retest reliability of the instrument was carried out. The copies of the instrument were administered to a sample of 10 Educational Technology postgraduate students of University of Ilorin. Pearson Product Moment Correlation (PPMC) was used to determine the level of reliability coefficient and it was reported as 0.90 as reliability coefficient of the instrument. Data were collected using the validated instrument. The researchers personally administered the questionnaire to the respondents. The researcher ensured that respondents are adequately briefed on the content and procedure for filling the questionnaire. Enough time was given to the respondents to respond to each item in the questionnaire. Mean and standard deviation were used for analyzing research questions 1 and 3 while research question 4 were answered using Pearson Product Moment Correlation (PPMC).

Presentation of Results

Research Question 1: What are the digital technology skills needed for effective long-distance learning among postgraduate students in Tai Solarin University of Education, Ogun State?

Table 1: Descriptive statistics on the digital technology skills needed for effective long-distance learning among postgraduate students in Tai Solarin University of Education, Ogun State

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Items	Mean	SD
Information and data literacy skills	3.16	.783
Communication skills	3.18	.899
Collaboration skills	2.76	.902
Content creation skills	2.92	.966
Safety and problem-solving skills	2.98	.992
Cluster Mean	3.00	

Source: Field Survey, 2025

Fig. 1: Pie-chart showing students' digital technology skills needed for effective long-distance learning

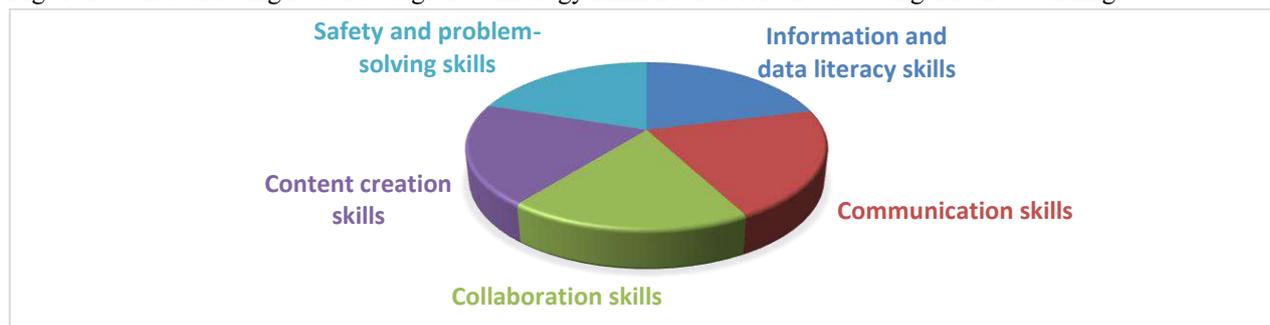


Table 1 revealed that cluster mean was 3.00 and the bench mark was 2.50. Since, $3.00 > 2.50$, this implied that information and data literacy, communication, collaboration, content creation and safety and problem-solving were among digital technology skills needed for effective long-distance learning among postgraduate students in Tai Solarin University of Education, Ogun State.

Research Question 2: What are the issues facing effective long-distance learning among postgraduate students in Tai Solarin University of Education, Ogun State?

Table 2: Descriptive statistics on the issues facing effective long-distance learning among postgraduate students in Tai Solarin University of Education, Ogun State

Items	Mean	SD
Technical difficulty.	3.17	.819
Inadequate access to technology	2.58	.937
Unreliable internet connectivity	2.72	.996
Lack of face-to-face interaction	3.27	.765
Reduction in student engagement and difficulties in building a strong learning community	3.37	.703
Cluster Mean	3.02	

Source: Field Survey, 2025

Fig. 2: Pie-chart showing issues facing effective long-distance learning

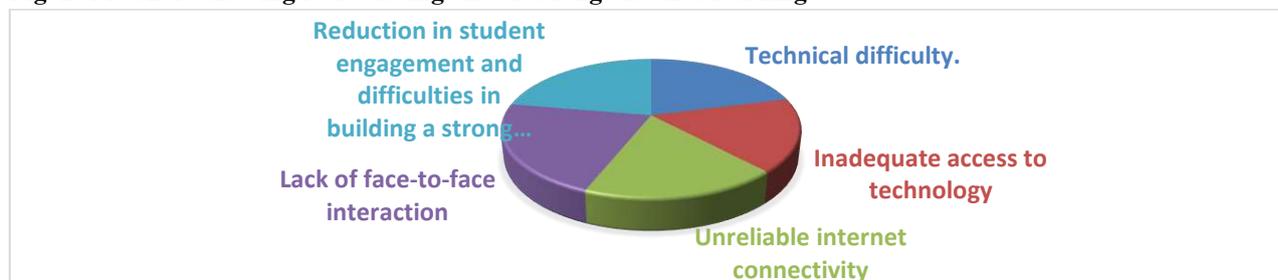


Table 2 depicted that cluster mean was reported as 3.02 and greater than bench mark mean value 2.50. This further implied that technical difficulty, inadequate access to technology, unreliable internet connectivity, lack of face-to-face interaction and reduction in student engagement and difficulties in building a strong learning community were among issues facing effective long-distance learning among postgraduate students in Tai Solarin University of Education, Ogun State.



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Research Question 3: Is there any relationship between digital technology skills on long-distance learning among postgraduate students in Tai Solarin University of Education, Ogun State?

Table 3: Relationship between digital technology skills on long-distance learning among postgraduate students in Tai Solarin University of Education, Ogun State?

Variables	Mean	SD	df	r-value	p-value
Students' digital technology skills	25.941	11.654	28		
Effective long-distance learning	16.936	9.592		.117	.002

Source: Field Survey, 2025

Table 3, showed that there was significant relationship between the independent variable and the dependent variable in the order of ($r = .117, p < .05$). On this premise, the researchers concluded that there was relationship between digital technology skills as determinants for effective on long-distance learning among postgraduate students in Tai Solarin University of Education, Ogun State.

Discussion of Findings

Research question 1 showed that information and data literacy, communication, collaboration, content creation and safety and problem-solving were among germane students' digital technology skills needed for effective long-distance learning. These findings were in an agreement with Nnenna and Perpetua (2024) which found that digital skills such as ICT skills, and communication-safety skills were among needed digital skills for long distance learning. It was also found that distance education has proved to be successful for the purpose of widening educational chances but Nigeria faces problems like low ICT penetration, erratic power supply, and meagre economy. It is noted that ICTs play a critical role in the development of distance education in Nigeria. Okpa (2025) which findings indicate that major emerging trends in digital literacy skill requirements among tertiary institution students include improved information retrieval, Artificial Intelligence (AI) and machine learning, data science and analytics, and cybersecurity. The study also revealed that these digital literacy skills significantly impact students' learning outcomes by enhancing information retrieval, expanding access to educational research, increasing collaboration and communication, and facilitating feedback and assessment. Additionally, inquiry-based learning, multimedia presentations, and flipped classroom approaches were identified as the most effective methods for integrating digital literacy skills in tertiary institutions. Debbarma and Shivam (2025) found that digital literacy has influenced all subjects, including science, commerce, arts, technology, music, dance, etc., especially in science, which has changed society. The influence of digital literacy on science achievement among secondary students has been reviewed from the previous learning. The findings of the study reflect the impact of digital literacy on science achievement among secondary students, and it has particular importance these days as a tool in educational fields. The study highlights the importance of use and incorporation for science learning, performing, and assessing.

Research question 2 technical difficulty, inadequate access to technology, unreliable internet connectivity, lack of face-to-face interaction and reduction in student engagement and difficulties in building a strong learning community were among the issues facing effective long-distance learning. These findings were in correlation with Okpa (2025) who which identified challenges, such as the digital divide, the complexity of digital tools, and limited access to technology.

Research question 3 there was relationship between digital technology skills as determinants for effective on long-distance learning among postgraduate students in Tai Solarin University of Education, Ogun State. These findings were in support to Iftanti et al. (2025) results of this study demonstrated that good digital literacy skills are developed from internal factors like strong curiosity towards digital technology, individual desires, and educational needs for digital, students' preference for digitalization, and keeping up to date through using digital technology. Aremu and Udofia (2025) findings show that digital literacy plays a significant and positive role in the outcome of undergraduate performance. The study concluded that the technology is less expensive, has less manpower demand, has lower anxiety levels, is stress-free in marking and scoring, and develops undergraduates' psychomotor and cognitive skills.

Conclusion

This study was an assessment of digital-technology skills on long-distance learning among Educational Technology Postgraduate students in Tai Solarin University of Education, Ijagun, Ogun State, Nigeria and the following conclusions were drawn based on the findings of the study that:



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1. Information and data literacy, communication, collaboration, content creation and safety and problem-solving were among germane students' digital technology skills needed for effective long-distance learning.
2. Technical difficulty, inadequate access to technology, unreliable internet connectivity, lack of face-to-face interaction and reduction in student engagement and difficulties in building a strong learning community were among the issues facing effective long-distance learning.
3. There was relationship between students' digital technology skills and as determinants for effective long-distance learning

Recommendations

The following recommendations were raised in line with the findings of the study:

1. There is the need for collaboration among all relevant stakeholders' government, private companies, and international organizations to enhance ICT infrastructure, implement international cooperation frameworks, and integrate ICT literacy and use into academic courses.
2. There should be effective mechanism to overcome the challenges associated with mastering digital literacy skills among students in tertiary institutions.
3. Digital literacy initiatives, enhancing instructional strategies, improving infrastructure and access, providing comprehensive lecturers training, and fostering collaboration among them.
4. The study recommends targeted training programmes and enhanced institutional support improved internet access and AI tool subscriptions to strengthen teaching and research. The insights inform capacity-building strategies in specialized Nigerian universities.

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Qualitative Study on Forgiveness in Adversarial and Yoruba Traditional Judicial Systems; An Appraisal from Selected Yorùbá Written Plays

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Abstract

Many factors differentiate the adversarial judicial system from its Yoruba traditional counterpart. This study gives readers a clear understanding of forgiveness and punishment as major components for engendering justice, social peace and reconciliation in Yoruba traditional justice administration. While on the other hand, argues that the adversarial justice has no room for forgiveness and reconciliation but awards penalties as means of retribution, deterrence, which often does not heal the wound occasioned by conflict. The thrust of the essay is that the general mindset of justice in Yoruba tradition engenders peaceful and harmonious settlement of conflicts unlike adversarial justice which leaves no room for reconciliation. The essay adopts Restorative Justice Theory in conjunction with data from Yoruba drama texts; Atari Ajanaku, Ogun Lakaaye and Ebi taa ni? The paper therefore concludes that, it is not in all situations that punishment related judgment serves the purpose of healing the wound, but the combination of the spirit of punishment and mercy foster unity. Therefore, suggests incorporating mercy and forgiveness in its dispute resolution mechanism.

Keywords; Conflict, Justice, Punishment, Forgiveness, Reconciliation

Introduction

Human beings by nature are gregarious and companionable. The more they live together the better lives becomes. However, living together is synonymous with social vices and conflicts which impair peaceful co-habitation. An unceasing existence of a communality is grounded on the peace and safety of an individual member in the community. Whereas, promoting peace means regular settlement of perpetual crisis which coincidentally is on-avoidable as a result of constant inter personal relationship. Thus the onus of engendering social peace lies on everybody, especially in traditional African community where the interest of the community is sacred to all. Every member of the community has a duty to nurture, protect and preserve the interest of the state by being civil and orderly. When there is a breach of social peace, the process of arbitration commences immediately to nip the problem in the bud. Yoruba race have a well-established mechanism through which such interpersonal conflicts and crisis are resolved. The method of adjudication is generally referred to as traditional method of dispute settlement or indigenous court system. In this system, settlement of conflict begins from immediate house hold, progresses to the compound settings, community level and climaxed at the palace of an oba who, with his subordinates has supreme power to judge all types of cases and award any degree of punishments. The weight of a crime, or a dispute determines the level it would be tried.

At the time in question, society was peaceful because everyone was aware of the native law and punishment associated with breaking communal law. On no account an individual claims ignorance of the laws to commit a crime, or willingly run fowl of communal social order because grave penalties and sanctions are there to curb excesses or violation of social norm. The thrust of Yoruba traditional justice worldview is the commitment to give everyone his or her due. To them, injustice brings pandemonium and disharmony. Therefore, the focus of indigenous court has always being to reconcile the parties amicably through inquisitorial methods. Unfortunately, the world is fast changing and evolving. Civilization and modernization brought about by colonial masters have destabilized the social, political and economic lives that were once managed by the individuals and traditional authorities as a whole. Traditional institutions have all given way to colonial imperialism which super imposed its culture on the poor Africans. Any of the African cultural institutions and tradition that could not be completely wiped out somehow co-existed, though with disdain, and often serve as a second fiddle to the British imposition.



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Such a regrettable example is the Yoruba Traditional method of adjudication that is struggling to co-exist alongside the British adversarial justice mechanism which the Nigerian Constitution (2011) as amended, Chapter 1, section 6, sub section 1 -3, adopted and vested all authorities and powers of adjudication and justice. Characteristically, British judicial system incorporates the use of advocates, has written laws, and importantly, is manned by competent judges who are experts in the British law. Perhaps the reason why the nation un hesitatingly adopts it after the independence from the colonizers. Olúwoḷé (1984) opines that one of the major reasons why the nation adopts foreign judicial system was that the native laws are in adequate. He says partly that; “One of the reasons for the introduction of English law into Nigeria was, without doubt, the fact that the rules of customary law were inadequate to cope with the monetary economy and to regulate the large scale peaceful interpenetration of society arising from the establishment of British Administration” Yet, that does not foreclose insinuation of some other peculiar problems associated with adversarial justice, which many researchers like Oluwole, (1984) Aina, (2015) Adebayo and Adefarasin (nd) amongst others who have criticized it in one way or the other and calling for a change and total re-evaluation of judicial system in Nigeria.

Statement of the Problem

Adversarial adjudicative system promotes resentment and enmity according to Yoruba philosophy because it emphasizes punishment of the culprits without leaving room for genuine reconciliation. This has prompt people agitating for alternative dispute adjudication. This essay therefore focusses on one outstanding difference between British adversarial judicial system and Yoruba traditional judicial system; forgiveness, which the earlier lacks but the later adores.

Methodology

The study is based on secondary sources, including academic literature, as well as analyzing and discussing the judgments in selected Yoruba written drama texts which is repository of worldview of writers. The study gives readers a clear understanding of the perspective of the Yoruba traditional adjudication which recognizes punishment and forgiveness as major components for justice, and perhaps a panacea to facilitate social peace. In other words, the combination of punishment and forgiveness engender social co-existence in the traditional Yoruba land and some native African traditions. While on the other hand, modern criminal justice has little room for forgiveness and thus compounds strife and acrimony. Stephanos (2007) emphatically confesses that, ‘Although, forgiveness and mercy matter greatly in social life, they play fairly small role in criminal procedure... dominated by the state, whose interest is deterring, incapacitating, and inflicting retribution, leave little room for mercy’. Immanuel, (1994) reiterated further that ‘forgiveness is unrelated to the wrongfulness of the crime itself and so seems irrelevant to the grievance retribution’. To him, ‘the offender must pay his debt to the society and purge his blood guilt, and that is all’. These are two clear different world views when considering judicial process which this essay examines in some Yoruba written drama texts. While Yoruba traditional adjudication settles amicably, sometimes through concession, adversarial justice constantly upholds legal injunctions.

Meanwhile, the essay adopts Restorative Justice Theory which emphasizes settlement of disputes by repairing injury occasioned by conflict, rather than merely punishing offenders. Restorative theory views conflict as harmful to relationships and thereby prioritizes repair over punishment. It focuses majorly on reconciling complainant and offender, and sometimes the community at large, through amicable settlement of disagreement. Therefore, the adjudicators strive to achieve a genuine healing of wounds occasioned by the disagreement of the warring parties through provoking a conscious and voluntary reversal of negative feelings and resentment in them. In that vein, forgiveness by the disputing parties cannot be overemphasized. Zehr, (1990) says settlement procedure should ensure that all stakeholders affected by an injustice have an opportunity to discuss how they have been affected and decide what should be done to repair the harm. Thus, key element includes; victim-offender negotiation, where victims express the impact and the wrongdoer acknowledge the fault in the presence of constituted judicial panel, perhaps who have the authority to punish the culprits. The approach and its integration vary across legal cultures. While the Yoruba traditional judicial system upholds the concept of *àfòrìjì* as social behaviour to promote peace in case settlement, so also other parts of African tribes uphold interconnectedness and restoration philosophy according to Braithwaite (2002) aligning with restorative justice ideals theory.

Concept of justice, punishment and forgiveness

Whenever justice is mentioned, what comes to mind may vary according to individual’s point of view. On general perspective however, justice means fairness, uprightness, and impartiality. Laleye, (2014) quoting Raphael says that, the central thrust of justice is ‘how people are treated, what they ought to get and the justification for getting whatever they



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got, as well as what they could not get within the context of a particular socio-political arrangement'. Bearing that description in mind, justice then is the commitment to give every man his due irrespective of status, race and colour. A good judgment is commonly referred to as 'justice'. Where justice is lacking, peace will certainly remain elusive. Justice and Punishment are like twin cam that hardly separated. One complements the other for effective outcome. Where there is true justice, often, the degree of punishment given to the culprit always serves as the barometer to evaluate the appropriateness of justice. That is to say punishment, or an intentional infliction of harm or burden as a result of infraction committed by a person is always preceded justice. It is better defined by Ani (nd) who quotes the black law Dictionary defines as; "Any fine, penalty, or confinement inflicted upon a person by the authority of the law and the judgment and sentence of a court, for some crime or offence committed by him, or for his omission of a duty enjoined by law". A word of caution in awarding punishment is that, punishment must be commensurate to the offence committed, without which no justice is served. In the light of the above, utmost diligence should be exercised in the course of executing punishment so as to achieve peace which is the primary aim of justice and punishment. Meanwhile, the mission of institution of judicial process determines the tone of judgments of the court, and this is what sets an adjudication procedure apart from another. For example, while the Yoruba traditional judicial worldview is often not a total castigation of the culprit, rather reuniting the petitioner and the defendant in such a way that the aftermath of settlement will engender peace and genuine reconciliation, the adversarial judicial court is a direct opposite. State uses punishment in adversarial courts as instrument to deter and suffer offenders. Or simply put, paying evil with evil without leaving the possibility of reconciliation. No wonder Yoruba succinctly adjudges the outcome of adversarial court in her proverb; 'a kì í tí kóòtù bò ká tún sòrè mó' (which literarily means that, there could be no more true relationships between the petitioner and the responder after the court lawsuit). The proverb which underscores the philosophy of adversarial justice in Yoruba worldview.

The insinuation is that adversarial judicial system devoid reconciliation. Conversely however, Yoruba form of adjudication leaves room for reunion in his decisions. Thus, rarely uses punishment as initial weapon to settle conflict. This is not to say that there is no punishment for the offenders. However, the interest of the society is, to first maintain social harmony and cohesion through persuasion and appeal, after which inflicting punishment (physical pain, financial, economic sanctions, psychological or whatever form of punishment) to the culprit perhaps as second option if their needs be. Onadeko, (2008) testifies that Yoruba traditional judges seldom declare anybody completely guilty or completely innocent, especially in civil cases. They preferred stances of 'guiltier and less guilty' to strike a balance. This leads us to the issue of 'forgiveness', which is another salient phenomenal in judicial administrations. Often, there are times when punishment, no matter the degree or the type assuages the feeling of resentment and able to fully compensates the wrong done to the defendant. This insinuation questions the effectiveness of punishment as a double-prop of justice. Moreover, apart from assuaging the resentment, there are instances when defenders accept their mistakes, exhibit genuine remorse and plead for mercy, after all to err is human. This is not an uncommon experience in any form of judicial exercise. This time around, punishment is sometimes waived or shelved depending on type of adjudication system. The instance of forgiveness is another land mark difference between the adversarial justice mechanism and Yoruba traditional judicial system.

While Yoruba tradition favourably disposed to forgiveness, English laws appear to be cheerless. Take for an example, the Yoruba perception is shown in their axioms; À ñ bẹ Olúwa, Ó ñ gbó, á ñ bõtàşe ọmọ èdá (we appeal to God for mercy, He hears and pardons, how much less human beings) this proverb invariably in support of forgiveness when an accused pleads for one. Or in; Ọmọ àlè èniyàn ni ó ñ rí inú tí kì í bí, şùgbón ọmọ àlè èniyàn ni wọn ñ bẹ tí kii gbà (it's only a bastard that would not get annoyed when he is being wronged, so also, it's only a bastard that when he was begged that he would not forgive) is logically saying that, unless one is culturally bastard, one is morally bound to pardon, and forgive at the instance of defendant's pleading. Laleye, (2014) says further that 'the determination to pay evil for evil prolongs social strife...and undermines the possibility of reconciliation. He stresses that the combination of punishment and forgiveness are the hallmark of the Yoruba traditional adjudication so as peace and reconciliation to foster in the community. Meanwhile, forgiveness appears not a common occurrence in adversarial judicial system as evidenced from our literature review as well as the Yoruba written play analyzed. While he was analyzing impediments to taking steps to forgiveness in modern law suits, Stephanos, (2007) examined the police and lawyers role, and says;



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Modern ... criminal justice...has little room for forgiveness, ... police and lawyers take control of the process from the moment of the crime report, and they forbid or discourage offenders and the victims to have any contact or discuss a case. The logic of adversarial combat leads each side to take antagonistic posture, instead of engaging in dialogue and seeing the other's point of view

He went further to point an accusing finger at the state. To him criminal matter is dominated by the state whose interest is deterring, incapacitating and inflicting retribution thereby leaving no room for mercy. Just like Immanuel, (1994) has this to say that; "Forgiveness is unrelated to the wrongfulness of the crime itself and so seems irrelevant to the grievance retribution; the offender must pay his debt to the society and purge his blood guilt, and that is all".

The sample cases where forgiveness as hallmark of traditional Yoruba justice was demonstrated were drawn from Yoruba drama texts; Olatubosun's, (1983) *Ogun Lakaaye*, Ogunniran, (2001) *Àtari Àjànàkú*. The two-playwright proved beyond reasonable doubt that there is no degree of crime in Yoruba judicial viewpoint that could not be forgiven if the culprit show remorse and perhaps pleads for forgiveness. At the same time Adigun, (2001) *Ebi taa ni* berated the lack of forgiveness in the adversarial justice no matter the obvious the necessity of forgiveness. Therefore, before we examine the cases, here is the synopsis of the texts in question. Olatubosun's (1983) *Ògún Lákááyé* bothers on a story of a warrior, Ògún Lákááyé in an ancient town named Àgbàògún. Àgbàògún was prone to incessant communal war, whereas the man, Ògún Lákááyé was the chief commander of the armed forces who always waded off wars in defense of his father land. His prowess in wars earned him great honour and respect from old and young ones, including the monarch and the chiefs. Somehow later, the euphoria of fame and honour accorded him by the community beclouded his sense of reasoning. He was so power obsessed that he plotted to topple the king. After all, he claimed that he was the force behind the success of the ever-persistent wars that always raged against his community. Ògún Lákááyé's inordinate thought and the execution of his ambition brought an untold hardship into the entire community. Lives and properties were lost and destroyed.

Being a warrior with a standing army, Ògún Lákááyé could not be faced by his community using the conventional military war. Therefore, the community adopted a subtle means by conniving with his wife to uncover the secret of his military power. After so many attempts with the attendant of loss of lives and properties, they discovered the secret of his power, and got him captured. He was arraigned before the highest court and before the king that he wanted to topple. His charges were rebellion against the constituted authority, public disturbance and destruction of lives and properties. All these charges in Yoruba native laws Ajisafe (1906) says attracted death penalty if found guilty. *Ògún Lákááyé* indictment is similar to that of Ogunniran's (2001) *Àtari Àjànàkú* where the political and economic administration of Gbándú, a small town, was under the control powerful Alaafin of Oyo. Alaafin oversaw the affairs of this town through an ambassador, the 'Ìlari oba' who resided in Gbandu and collected royalties and reported same to Alaafin on yearly basis. The Ìlari to Gbándú during the time of the story was named Mòbòlájé who happened to be exceedingly corrupt. He colluded with the Baalè of the town to exploit the town via tax hike unlawful levies and other slavery tasks. People complained bitterly about their plight but he did nothing to reduce the burden, because he benefited from the Baalè and some of his chief's exploitation. The people's predicament was also heightened by the presence of Tela, the prince of the late Alaafin of Oyo who sojourned in the town too. Although Tela had no official business in Gbándú, yet he constituted a nuisance through unlawful confiscation of people's properties, including hijacking people's wives and bullying their husbands. None of these vices were known to the Alaafin who owned the land.

When the youths of the city could no longer bear the assaults anymore, they conspired together and assassinated the baalè and his chiefs. They took over political administration, changed the system of governance, abolished taxes and royalty payment to the Alaafin as the law demands. Ìlari Mòbòlájé, failed to report the gruesome murder and the change of government to Alaafin who appointed him. However, after a total breakdown of law and order in the land, Alàafin got to know about the development. He ordered a forceful arrest of the dissidents and thus were made to face justice. But before we examine the procedure of the trial of the two cases in the two texts, let us look at the synopsis of a similar case judged in adversarial court in Adigun (2001) *Ebi Taa ni? Ebi taa ni?* highlights the un-employment problem among the graduates of higher institutions of learning in the country named Lágbondókò, where Bamidele Oloyeede was a victim. Bamidele Oloyeede's classmates were all gainfully employed either as a judge, custom official, polish, teacher and a journalist, but



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horse feeder in the palace. Meanwhile, in the adversarial court in the text *Ebi taa ni?*, the judge established that the accused person Bamidele Oloyede deserved to be forgiven because he had no decent job as graduate. He said partly asked rhetorically that; “Kin ni ebi Bamidele Oloyeede fun aronuda ... ogbon inu lati jare osi? Se ti a o ba ki ogbeni bamidele Oloyeede pe o ku ogbon inu, o ku atinuda ... gege bi akekoo to gboye jade ni ile eko giga. Ohun ti o to suna ni fun ijoba lati wa ise fun Ogbeni Bamidele, paapaa julo niwon igba ti o ti fi odidi odun kan sinruulu labe ofin ijoba” What was wrong with Bamidele Oloyede’s creativity ...to survive poverty? We rather praise him for his resilience and survival instinct.....as an unemployed graduate. Government has the obligation to provide a job for Mr Bamidele who has voluntarily served his nation under National Youth Service Scheme under law for a whole year.

The judge’s rhetorical question *Kin ni ebi Bamidélé Olóyèédé fún àronúdá ... ogbón inú láti jàrè òsì?*, suggested that the accused should not be awarded penalty because the government of his country was supposed to have provided a job for him, having fulfilled all requirements of the law, including voluntarily serving his father land for a whole year. Unfortunately the government has failed in her responsibility, thereby, the accused deserved forgiveness. However, he as a judge is restrained under the law to forgive an accused who has been proven guilty under the law out of mere sentiment. Owing to that reason, the court sentenced him to five year imprisonment. The judge however tendered what supposed to be an apology to his friend whom he has sentenced to imprisonment under the law that; “Tó bá ẹ̀ pé òfin gbà mí láàyè láti dín ọ̀dún ẹ̀wọ̀n rẹ̀ yìí ju eléyí lẹ̀ ni, ilé ẹ̀jọ̀ yìí kì bá ẹ̀ bẹ̀, sùgbón níwọ̀n igbà tí òfin kò gbà mí láàyè, ilé ẹ̀jọ̀ yìí paá láse kí iwọ̀ Ọ̀gbéni Bámidélé fí ẹ̀wọ̀n ọ̀dún márùn ún jura” (If the law had permitted me to reduce your years of imprisonment above this, this honourable court would have done so, but so far that the law did not permit me, this court therefore decided that you Mr. Bamidele be lock up in the prison for five years)

The judgment of the court in this matter portrays the philosophy of adversarial justice as the one that believes in punishing of offenders as the justification for getting whatever they got, as well as what they could not get within the context of a particular arrangement as suggested by Raphael (1970). Apparently, this is what Adigun (2001) was saying in his story. It goes along to confirm Stephanos’s (2007) insinuation that interest of criminal procedure in adversarial system is deterring, incapacitating, and inflicting retribution, and leaves little room for mercy. If Bamidele in this context had been tried in traditional Yoruba law court, may be, his plea for mercy and the genuine remorse shown during the course of trial and perhaps the judges privy to his predicament, being a formal school mate may have earned him mercy. One has to say unequivocally here that the Yoruba traditional judges are free to exercise their judicial powers unlike the British counterpart who are legally restrained from ultra-vire. The text under study confirms the belief that forgiveness is a rare commodity in adversarial justice which calls for reformation.

Conclusion

There is no doubt that the adversarial judicial system of the British has come to stay in Nigeria. Yet, it not without bottle neck problems which constitute major setbacks that makes the vast majority of plaintive opt for alternative dispute adjudication channels to seek redress. This essay examined forgiveness issue in both Yoruba Traditional and adversarial judicial system as salient point and recommended that time has come to heed to the clarion calls of the literary artists as well other stake holders to reform judicial system in order to address justice mechanism in the system.

Recommendation

1. Reforming Nigerian judicial system by blending traditional approaches with the adversarial method especially in civil cases where there are traditional laws
2. As seen in this discussion, strict punishment does not always bring about soberness or true repentance of a criminal or compensates the victims in its true sense, therefore the adversarial judicial system should encourage the spirit of forgiveness in its judgment delivery in order to pave the way for genuine reconciliation as well as given the offender a second chance
3. There should be promotion of Alternative Avenue for multi-door courthouses especially where the concerned parties indicated interest.



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Integrating Islamic Ethical Stewardship in Regulating Emission of Per- and poly-fluoroalkyl substances: A Case Study of Al-Hikmah University Ilorin, Kwara State, Nigeria

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Abstract

Per- and poly-fluoroalkyl substances (PFAS), commonly referred to as “forever chemicals,” represent one of the most persistent and hazardous classes of emerging contaminants worldwide. Their durability, mobility, and bio-accumulative nature have raised significant environmental health concerns, including potential liver, renal, immune, and developmental effects. In Nigeria, limited empirical studies have detected PFAS in soil, water, and biota; however, comprehensive regulatory frameworks, monitoring systems, and risk communication mechanisms remain absent. This paper is empirical and descriptive research. The population of the study consisted of all law and science education student in 300 level of Al-Hikmah University, Ilorin 2024/2025 academic session while the sample consist of 150 student randomly selected (75 Law and 75 Science Education). A structure questionnaire was raised for data collection on Islamic ethical stewardship and impact assessment act stewardship towards regulating forever contaminants chemicals (IESIARFCC) with six items using four Linkert scale the research question was answered using mean and standard deviation. A pilot test was conducted to non-participant with the reliability coefficient of 0.82. The result reveal that Islamic ethical stewardship had not being integrated into environment regulatory use and environmental act assessment is yet to be achieved its recommended that the government should intensify effort of integration Islamic ethics stewardship into environmental regulatory used.

Keywords: Forever chemicals, contaminant, Environmental law, Islamic ethics, stewardship.

Introduction

The development of any nation is determined mostly by astronomical increase in population this might have a grate increase in human activities leading huge amount of generating waste this need to be stop or reduce to barest minimum through Islamic ethics in the regulatory process. The poor attitude toward waste management and its disposal can contaminate the environment this had become a great concern as they pose several challenges to the well-being of city living within a resident's Ogungbemi *et al.* (2023). Industrialization and population growth in most cities of the world result in changes in the quantity, composition and quality of waste generated, this can be observed in most cities of developing countries such as Nigeria (Fazeli, G., Karbassi, A., Khoramnejadian, S., & Nasrabadi, T. 2019). Persistent chemical pollutants represent one of the most pressing environmental challenges of the 21st century. Among these, per- and polyfluoroalkyl substances (PFAS) often referred to as “forever chemicals” have become a global concern due to their remarkable chemical stability, resistance to degradation, and tendency to accumulate in ecosystems and living organisms. Their widespread use in industrial processes, non-stick coatings, firefighting foams, and packaging materials has resulted in global distribution, affecting soil, water, air, and food chains (UNEP, 2023). Scientific studies increasingly associate PFAS exposure with severe health risks, including endocrine disruption, liver damage, immune suppression, and carcinogenic effects (WHO, 2024). Consequently, PFAS contamination is not merely an environmental issue but a multidimensional legal, ethical, and public health crisis demanding urgent attention. Heavy contamination from solid waste dumpsites poses significant environmental risks, impacting soil quality and potentially harming non-human biota through bioaccumulation and ecosystem disruption. While some studies indicate low to moderate pollution levels, others show higher concentrations with potential for long-term ecological damage. These risks include soil contamination, water pollution, and bioaccumulation in the food chain, with potential harm to plants, animals, and humans through various exposure pathways



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In Nigeria, research on PFAS remains limited but steadily growing. Emerging evidence has detected PFAS residues in surface water, agricultural soils, and fish species in the Niger Delta and Lagos lagoon regions, highlighting risks of bioaccumulation within food webs Okeke *et al.*, 2024; Chukwuemeka & Ajayi, (2023). However, despite these findings, Nigeria currently lacks a specific legal or regulatory framework targeting PFAS. The country's principal environmental statutes such as the National Environmental Standards and Regulations Enforcement Agency (NESREA) Act 2007 and its subsidiary regulations address pollution broadly but do not list PFAS as controlled substances. This regulatory vacuum contrasts sharply with global developments where jurisdictions like the European Union and United States have begun imposing stringent limits on PFAS manufacturing, use, and discharge (European Chemicals Agency [ECHA], 2024).

Nigeria's environmental governance also faces challenges of institutional overlap, enforcement weaknesses, and inadequate laboratory capacity to monitor persistent organic pollutants. Moreover, the absence of a national PFAS inventory or standards for permissible concentrations in drinking water and industrial effluents leaves both ecosystems and communities vulnerable. Addressing this deficiency requires an integrated framework that combines scientific regulation, ethical responsibility, and community awareness a perspective that Islamic thought can meaningfully contribute to the awareness of the effects and consequence toward environmental contamination. From an Islamic ethical standpoint, environmental preservation is not optional but a divine mandate. The Qur'anic principles of stewardship (*khilāfah*), trustworthiness (*amānah*), and balance (*mizān*) offer a holistic paradigm for environmental responsibility. Humanity is viewed as a trustee over creation, tasked with maintaining the balance established by God: "And the heaven He raised and imposed the balance that you not transgress within the balance" (Qur'an 55:7–8). Violations of environmental harmony such as the unchecked spread of persistent pollutants represent a breach of this trust. As Al-Fahmi (2024) argues, ecological negligence in Islamic jurisprudence equates to moral corruption (*fasād fī al-ard*), forbidden under divine law. This paper, therefore, explores the intersection of environmental law and Islamic ethics in the context of PFAS regulation in Nigeria. It addresses four central questions: However, integrating juridical mechanisms with Islamic stewardship principles, this study proposes a normative model for ethical environmental governance in Nigeria. It argues that combating PFAS contamination is not only a regulatory necessity but also a moral duty in Islamic perspective, consistent with the higher objectives of Shariah (*Maqasid al-Shariah*) namely, the protection of life (*nafs*), health (*aql*), property (*mal*), and future generations (*nasl*).

PFAS have found extensive applications due to their unique physicochemical properties thermal stability, hydrophobicity, and oleophobicity. They are integral to numerous industrial and consumer products, such as non-stick cookware (Teflon), stain- and water-resistant textiles, grease-proof food packaging, electronics, chrome plating, paints, and aqueous film-forming foams (AFFFs) used in firefighting (OWSD, 2024; OECD, 2023). While these properties have contributed significantly to industrial innovation and product performance, they have also led to widespread and long-lasting environmental contamination. Globally, PFAS are now detected in virtually every environmental matrix including groundwater, drinking water, sediments, and atmospheric particles and in human blood serum samples across diverse populations (ECHA, 2024). Their ability to travel long distances and resist natural breakdown processes makes them a transboundary pollutant, prompting increasing global calls for restriction and remediation. Moreover, studies have linked PFAS exposure to adverse health outcomes, including immunotoxicity, endocrine disruption, developmental effects, and potential carcinogenicity (WHO, 2024; Rahman & Lee, 2025). In the Nigerian context, recent studies have begun documenting PFAS contamination in surface waters, sediments, and fish tissues in industrial and urban regions such as Lagos, Port Harcourt, and the Niger Delta (Chukwuemeka & Ajayi, 2023). These findings indicate bioaccumulation risks in local aquatic food webs, raising concerns about long-term exposure among fishing and riverine communities. Since Nigeria lacks national drinking water standards or environmental thresholds for PFAS, exposure pathways remain largely unmonitored and unregulated. This situation poses a hidden but significant environmental justice issue, as rural and low-income populations are more likely to rely on untreated surface water and locally sourced fish.

The toxicological profile of PFAS is increasingly well-documented. Epidemiological studies link chronic exposure to various adverse health outcomes, including liver enzyme dysfunction, kidney and thyroid disorders, immune system suppression, and developmental delays in children (WHO, 2024; Rahman & Lee, 2025). Some compounds, notably PFOA and PFOS, are classified as "possibly carcinogenic to humans" by the International Agency for Research on Cancer (IARC).



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PFAS exposure has also been associated with reduced vaccine efficacy and hormonal imbalances, further underlining their systemic health effects (UNEP, 2023). In addition, PFAS contamination represents a multidimensional threat chemical, ecological, and ethical. It challenges the adequacy of Nigeria's environmental governance while invoking deeper moral imperatives of stewardship and protection of human life as emphasized in Islamic ethics. Addressing this crisis demands coordinated scientific monitoring, regulatory enforcement, and a value-driven approach that prioritizes public health, ecological balance, and intergenerational justice. From an Islamic ethical perspective, regulating PFAS constitutes a sacred duty embedded within the moral architecture of stewardship (khilāfah). Humanity's role as vicegerent on earth mandates the preservation of life (ḥifẓ al-nafs), property and livelihood (ḥifẓ al-māl), and communal dignity (ḥifẓ al-'irdh). The pervasive contamination caused by PFAS directly contravenes these objectives, threatening both human health and ecological equilibrium. Neglecting to prevent or remediate such pollution disrupts the divine balance (mizān) and undermines the Qur'anic imperative to avoid corruption on earth, thereby violating principles of intergenerational justice (Kamali, 2023; Al-Qaradawi, 2021). Consequently, Nigeria's environmental reform agenda must integrate statutory enforcement with moral and theological guidance. Harmonising domestic law with international frameworks such as the Basel Convention and the United Nations Environment Programme (UNEP) Chemicals Roadmap (2023) will ensure coherence between global obligations and faith-based ethics. In this synthesis, environmental protection transcends technocratic governance to become an act of 'adl (justice) and amānah (divine trust), reaffirming humanity's responsibility to safeguard creation as an ethical and spiritual imperative.

Ethical education and religious engagement play a transformative role in embedding environmental consciousness into society. Integrating environmental stewardship into sermons, Islamic education, and community outreach can help reshape public attitudes toward pollution and sustainability. Mosques and faith-based organisations can serve as hubs for disseminating ecological awareness, underscoring that environmental protection is both a civic obligation and a divine trust. Through amānah, khilāfah, and iḥsān (moral excellence), individuals and institutions are reminded that the care of creation is a sacred duty that extends beyond legal compliance toward moral accountability before God (Ahmad Zuhdi et al., 2024; Alhinai & Ringer, 2025).

Statement of the problem

Chemical Nature and Industrial Applications of PFAS Per- and polyfluoroalkyl substances (PFAS) constitute a vast family of synthetic organofluorine compounds distinguished by the presence of strong carbon–fluorine (C–F) bonds, among the most stable in organic chemistry and biodegradable and become remnant in the soil. This exceptional stability, which makes the C–F bond nearly unbreakable under natural environmental conditions, underlies their persistence and the designation “forever chemicals” (OWSD, 2024). PFAS have been manufactured since the mid-20th century without observing its effects cause on living organisms encompass over 10,000 distinct compounds, including well-known substances such as perfluorooctanoic acid (PFOA), perfluorooctane sulfonate (PFOS), and their derivatives (UNEP, 2023). These compounds resist photolysis, hydrolysis, and biodegradation, leading to their bioaccumulation in soil, water, wildlife, and human tissue (WHO, 2024). The paradox of PFAS lies in their dual role as both technological enablers and environmental hazards. Their durability, once celebrated for enhancing industrial efficiency, has now become a major liability for global environmental and public health governance. For Nigeria where industrial use and waste management systems are often underregulated understanding the chemical and ecological behavior of PFAS is essential for developing effective regulatory, monitoring, and ethical response frameworks.

Environmental and Health Impacts of PFAS Because of their exceptional persistence, mobility, and bio-accumulative potential, per- and polyfluoroalkyl substances (PFAS) have emerged as a critical environmental and public health concern worldwide. Their chemical resilience enables them to resist natural degradation processes, allowing them to persist in air, water, soil, and biological systems for decades (DSpace Repository, 2024). Once released, PFAS compounds readily migrate through surface and groundwater systems, contaminating drinking water sources and agricultural lands. Their high solubility and resistance to breakdown also facilitate their entry into food chains, where they accumulate in aquatic organisms, livestock, and eventually humans through dietary exposure (Okeke et al., 2024). Absence of a national chemical inventory and analytical capacity limits the country's ability to evaluate PFAS prevalence in industrial discharges, consumer products, or drinking water systems.



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Lack of regulatory intervention. This regulatory vacuum not only delays preventive intervention but also exposes vulnerable populations especially in northern and riverine communities to unquantified health risks. The absence of local toxicological baselines and biomonitoring data further constrains risk assessment and remediation planning.

Methodology

The population of the study consisted of all law and science education student in 300level of Al-Hikman University, Ilorin 2024/2025 academic session while the sample consist of 150 students randomly selected (75 Law and 75 Science Education). A structure questionnaire was raised for data collection on Islamic ethical stewardship and impact assessment act stewardship towards regulating forever contaminants chemicals (IESIARFCC) with question items using four Linkert scale the research question was answered using mean and standard deviation. A pilot test was conducted to non-participant with the reliability coefficient of 0.82 using Alpha Cronbach. The data collected was analyzed using mean and standard deviation.

Research Question

1. To determine integrating environmental regulatory of Islamic ethical Stewardship towards regulating forever contaminants chemicals on environmental procedures
2. To determine environmental regulatory Impact Assessment act Stewardship towards regulating forever contaminants chemicals on environmental procedures

Presentation of Result

Research Question 1: To determine environmental regulatory use of Islamic ethical Stewardship towards regulating forever contaminants chemicals on environmental procedures

Table 1: Mean analysis on integrating Islamic ethical Stewardship towards regulating forever contaminants chemicals

Items	Mean	Standard Deviation
Islamic ethical stewardship towards regulating forever contaminants chemicals	2.18	1.004
impact assessment act stewardship towards regulating forever contaminants chemicals	3.23	0.343

The result in the table 1; revealed that the Mean of 2.18 (43.6%) and Standard Deviation of 1.004 lesser than 2.5 of the decision rule which strongly indicate that Islamic ethical Stewardship towards regulating forever contaminants chemicals on environmental procedures was not used. Recent empirical studies confirm the presence of per- and polyfluoroalkyl substances (PFAS) across multiple environmental matrices in Nigeria, highlighting an emerging national environmental health concern. For instance, a 2024 investigation in Yobe State detected measurable concentrations of PFAS in fish, soil, vegetables, and surface water across selected Local Government Areas (LGAs), indicating widespread environmental dissemination (ChemClass Journal, 2024). Similarly, Afropolitan Journals (2025) reported that PFAS concentrations in water samples from Bade and Jakusko LGAs occasionally exceeded the U.S. Environmental Protection Agency (EPA) recommended health advisory levels for perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS). These findings underscore the risk of chronic exposure in regions dependent on untreated groundwater and local agricultural produce for sustenance. This means that people are yet to understand the consequence and the principle of contaminant. Integrating legal reforms with Islamic ethical principles of justice ('adl), trust (amānah), and stewardship (khilāfah) can provide a dual framework for accountability and redress, ensuring that remediation efforts protect both ecological systems and human dignity. This strategy echoes Islamic injunctions against excess (isrāf) and underscores stewardship (khilāfah) and balance (mizān) as ecological virtues (Evident Monthly, 2024). Responsible industrial transformation safeguards both current and future generations.

Research Question 2: Table 1; also show the mean response to determine environmental regulatory Impact Assessment act Stewardship towards regulating forever contaminants chemicals on environmental procedures. The mean scores of 3.23 ethical greater than the decision rule of 2.5. Which is strongly agree that environmental regulatory Impact Assessment act Stewardship towards regulating forever contaminants chemicals on environmental procedures was used but the sole aim and its goal was not achieve. This means that the only convectional method used by the government is not yielding well therefore there is the need to integrate another method. The use of Islamic ethical Stewardship towards regulating forever



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contaminants chemicals on environmental will help in closing the gap. Islamic Impact Assessment act Stewardship inability to give persistence and uncertain health effects, regulatory inaction until scientific certainty emerges would contradict both rational policy and the Shariah objective of preserving life (hifz al-nafs). Islamic jurisprudence prohibits harm (ḍarar) and enjoins preventive action to safeguard communities (Rahman, 2024).

Challenges on the Implementation

- 1 Data and technical capacity remain major obstacles. Few Nigerian laboratories can analyse PFAS, constraining risk assessment and evidence-based policy (PMC, 2024).
- 2 Strengthening research infrastructure and fostering collaborations between universities and regulatory agencies still inconvertible.
- 3 Legal enforcement weaknesses further undermine progress. Fragmented authority, mild sanctions, and poor coordination have long hindered Nigerian environmental law (Nnamdi Azikiwe University Journals, 2023)..
- 4 Reforming enforcement mandates and enhancing institutional capacity within NESREA and state agencies is difficult.
- 5 Economic and industrial resistance pose additional challenges. PFAS are embedded in numerous supply chains, and transitioning away from them incurs significant cost. Comparative evidence from Europe and Asia shows that phased regulation, financial incentives, and stakeholder consultation improve compliance (Sagentia Consulting, 2024).
- 6 Ethical–religious integration requires deliberate collaboration among jurists, policymakers, scientists, and faith-based organisations. Translating Islamic environmental values into legal mandates may be complex but offers deep moral legitimacy for environmental protection (Research Corridor, 2024)

Conclusion

PFAS represent a silent but significant environmental threat in Nigeria and globally. While Nigeria’s environmental law frameworks provide a basis for chemical pollution regulation, they currently lack PFAS-specific provisions, monitoring infrastructure and implementation strength. However, integrating Islamic ethical framework of stewardship (khilāfah), trust (amānah), and the higher objectives of Shari’ah offers a rich ethical foundation to animate regulation and public policy.

Recommendations

- 1 Adequate provisions of monitoring personnel with the control of penalizing domestic industries that discharge PFAS-containing effluents into local waterways.
- 2 Apart of giving monitoring an enforcement regulatory committee must be sett up for the implementation of laws and order
- 3 There must be a consistent regulatory monitoring, and bureaucratic overlap between agencies such as NESREA and the Federal Ministry of Environment
- 4 Establishment of national PFAS monitoring systems, define discharge standards, and maintain transparent reporting. Continuous surveillance exemplifies amānah—the duty to protect divine trust in creation—and maintains equilibrium in ecosystems (OWSD, 2024).
- 5 Ethical education and religious engagement are transformative. Integrating environmental ethics into sermons, schools, and mosque-based initiatives can mobilise moral action against pollution. Faith leaders serve as powerful agents in embedding ecological consciousness within communities (rabitah.org.ng, 2023).

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Assessment of Teaching Techniques on Learners' Participation in Federal Low-cost Day Junior Secondary School, Maiduguri, Borno State, Nigeria

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Abstract

Creating enabling environment for class participation is a technique with no right or wrong approach as long as the learners are participating. Teacher's role is not only presenting concept with good illustrations but pushing for active class interaction which gingers motivation and improved performance. However, not many teachers are good at making learners participate. To this effect, Thornton (2013) proposes the taxonomy of teaching technique with three teaching techniques from lower to higher level of participation, which include: directing technique involving activities of learning through listening and directions; discussing technique which makes interaction possible; and, delegating techniques which involve learning through task-base. This study examined the application of these techniques to assess the learners' level of classroom participation at junior secondary school using four lesson periods of one intake class with one teacher and forty-two learners. The study is observational design where check list was employ to collect data. Frequency counts was employed as method of analysis. The finding indicated that the lessons observed employed the lower level learning task experience which did not expose learners to interact during the lesson. The study recommended that teachers should employ all the learning task experience according to the learning content and purpose. Teachers should gradually transcend from lower learning task to the higher learning task make teaching engaging and inviting, thereby creating a participatory classroom situation.

Keywords: Class Participation, Learning Interest, Teaching, Learning Activity, Teaching Technique

Introduction

Teaching is a two-dimensional activity; it involves teacher activities and student activities (Rajagopalan, 2019). These activities push for interaction; thus, classroom participation begins (Emanuelsson & Sahlström, 2008; Ingram & Elliott, 2014). This means that for learners to understand classroom activities they should be actively engaged. Though, some psychologists believe that learners come to school with empty brains (Jensen, 2009; Rodriguez, 2012) but, no brain is empty according to the proponents of behaviourism (Power & Holland, 2018). Classroom concretizes ideas inherent in the learners through practice and interaction. Learning could be said effective when the learners are presented with 'input' through 'interaction' by assessing them for an 'output' as indicator for learning. Mere storytelling and showing have been distinguished from teaching. Teaching involves planned and well-organized interaction to bring about positive change in the learner's behaviour (Rajagopalan, 2019).

To make classroom interactive, teachers need to employ a number of techniques. Teaching techniques mean 'particular trick' or 'stratagem' employed to achieve a set goal in a classroom (Hadi, 2023). This means that teachers must employ stratagem while teaching in order to induce learning interest (Aziz, Quraishi, & Kazi, 2018), and encourage classroom participations (Knox, 1980), thereby creating connection between the teacher and the learners. According to Kay, Peyton, and Pike (1987), there is no right or wrong teaching technique. To them, the use of a particular technique largely depends on the nature of content and characteristics of the learners as well as the objectives. This is why teachers should master different techniques for application at different times, and for different purposes. To Thornton (2013) an effective teacher employs different teaching techniques at the same time. This author claims that teaching techniques can be categorized into three Ds: Directing, Discussion, and Delegating. He states that teaching techniques starts from lowest to highest level of interaction.



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Figure 1

Taxonomy of Teaching Techniques

Direct	Discuss	Delegation
Low----- Task Experience -----High		

Source: Thornton (2013), Three Teaching Styles.

The directing technique involves activities of learning through listening and directions. Learners are expected to do activities by themselves with the directive from the teacher (how to do and when to do the task). The specific teaching activities here include lecturing, assigning reading task, playing audio/video, physical demonstration, role play, among others. These activities encourage the following learning activities as the learners are active (participate in the learning): listening for teacher’s reading or visual/audio; taking note of the lecture; doing the role play; and generally practicing what they are told to do. Using this technique, firstly, the teacher should start from deductive to inductive (provide the context before launching into the specific). Secondly, learning instruction should be clear and precise for easy recall and comprehension. The learners must be told exactly what they should achieve and how the teacher will evaluate their tasks. This reduces anxiety in learners (Galti & Tahiru, 2016). The discussion teaching technique makes interaction possible. Teachers ask learners probing questions rather than yes/no type question to promote critical thinking (Aziz et al., 2018). The higher the level of the learners, the higher the quality of questions. Learners are encouraged to have discussions with logical conclusions. Learners are trained to develop how to back up their own opinions with facts and data. To achieve this, teachers are to prepare questions before-hand to ensure no student dominates the discussion; to encourage learners to create questions; and, to use clickers (easy way of engaging the learners through posing multiple-choice question). Whereas, the delegating techniques is learning through task-base. A task is given to learners with a clear objective; group learners for team work; and, allow learners to tell or write what they can do on a project given to them.

The employment of these or any of the teaching techniques facilitates effective classroom participation (Mustapha, Abd Rahman, & Yunus, 2010). Teachers use these techniques to trigger participation when learners are engaged in class, which show that participation has taken place (Abdullah, Bakar, & Mahbob, 2012). Though promoting classroom participation can be a disadvantage to shy and introvert learners (Mustapha et al., 2010), effective engagement of learners into classroom participation generally promotes learning and triggers interests (O’Connor, 2013). There are different levels of classroom participation: raising hand (Sahlström, 2002), responding to question and asking question (Ratto, Shapiro, Truong, & Griswold, 2003; Susak, 2016), seeking clarification (Kääntä & Kasper, 2018) from teacher or peer, following instruction, doing classroom work, working or discussing in group, making presentation (Karjo, 2018). Again, class attendance and listening attentively have been considered as classroom participation (Bekkering & Ward, 2021; Chiang & Sumell, 2019). Therefore, classroom participation could be any act that actively engages learners for the purpose of learning intrinsically or extrinsically. As such, effective employment of teaching technique triggers some of these actions which are considered participation. Thus, this study examines how the use of effective teaching techniques, particularly the taxonomy of teaching technique by Thornton (2013) encourages learners’ classroom participation.

Statement of the Problem

Teachers often complain of passive learners in classes, making teaching a teacher-dominant. This situation seriously contributes to the poor learners’ participation. A participatory classroom yields more positive learning outcome than only-teacher-dominant classroom teaching. Thus, engaging learners promotes learning and motivates learners. However, not many teachers promote participatory learning activities, thinking it is demanding. What Thornton (2013) has explained that teaching techniques redefine how teachers could easily engage learners to make classroom a participatory class. Employing all or any of these techniques encourages active participation. Yet, teachers in the Junior Secondary Schools often not employ all the learning task experiences but rather use the lower levels. Examining this technique can give an insight into the applicability of the techniques in relation to the learners’ active classroom participation.

Objectives of the Study

The specific objectives of this study was to:

- i. Examine the impact of applying the taxonomy of teaching techniques on learners’ classroom participation



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Research Question

The following questions are expected to be answered:

- i. Which of the techniques teachers often employed while teaching?
- ii. What observable participatory traits the learners exhibit during the lessons observed?

Methodology

This study is an observational survey. The researchers were interested in the occurrence of active engagement of the learners as the teacher present appropriated techniques. Data were collected using ‘check-list’ containing how often the teachers employed the teaching techniques for learners’ active engagement. The researchers used tally for the frequency of occurrence accordingly to show application of any of the techniques during lesson (in both real classroom observation and video recorded observation). The lessons were video recorded to re-observe the activities in case some were not captured during the physical observation considering the large number of the participants (learners). The tally was as thus: \emptyset for 0; / for 1; // or 2; /// for 3; //// for 4; #### for 5; ##### for 6 and so on. Intake class was considered to make observation in as natural manner as possible. However, the consent of the teacher was sought before the observation. The researchers observed 4 lesson periods in one intake class (40 minutes per lesson) of 42 learners who were in the first year of Basic Junior Secondary Education in Federal Low-Cost Junior Secondary School, Maiduguri. Data collected were analysed using the frequency count.

Discussion of Findings

Table 1: Teacher’s Use of Teaching Techniques During Lesson

DIRECTING TECHNIQUE		Frequency
1.	Teacher starts from deductive to inductive.	/
2.	Learning instructions are clear and precise.	///
3.	Teacher listens attentively when learners ask questions.	###
4.	The teacher directs learners to do task/answer question by themselves.	///
5.	Teacher gives clear directives on how to response to question/ do assignment.	/
6.	Assignment deadline is clear and strictly adhered to by teacher.	////
7.	Teacher lectures throughout the lesson period.	### ## //
8.	Learners are allowed to listen to the teacher’s reading.	### ///
9.	Learners are allowed to take note of the lecture.	### ////
10.	Teacher assigns reading task.	//
11.	Video/audio are played as lesson presentation.	\emptyset
12.	Learners are allowed to listen to audio/video.	\emptyset
13.	Teacher physically demonstrates some examples.	///
14.	The learners do role play to illustrate some content.	<u>0</u>
15.	The learners are told the objectives of the lesson.	//
16.	Learners are told how they should be evaluated.	\emptyset
DISCUSSION TECHNIQUE:		Frequency
17.	The teacher asks probing question.	\emptyset
18.	The questions are yes/no type questions.	///
19.	Learners are encouraged to have discussion.	///
20.	The discussions are logical.	//
21.	Teacher identifies dominant student.	\emptyset
22.	Teacher redirects response of dominant learners for massive engagement.	//
23.	Learners are encouraged to create questions.	/
24.	Teacher uses clickers (easy way of engaging the learners through posing multiple-choice question).	\emptyset
DELEGATING TECHNIQUE:		Frequency
25.	Teacher groups learners for team work;	\emptyset
26.	Teacher allows learners to tell or write what they can do on a project given to them.	\emptyset

Based on the data in table 1, directing technique was the most frequently used technique in the class observed more than both discussion and delegation techniques. The result reveals that the teachers were frequently directing the learners by using lecture method and only allowing them to listen, making the lesson teacher-centred. This goes to show that the learners jotted notes rather than being actively engaged in the learning processes. Many of the skills that engage learners,



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such as application of audio-video, role play, as well as informing learners how the learning could be evaluated appeared zero throughout the lessons observed. Furthermore, the teachers did not encourage discussion through asking probing questions or created avenue for asking questions or triggered class discussion by the use of clickers during the lesson.

Table 2: Learners' Observable Participation Traits

Observable traits	Frequency
1. Learners attend lesson.	### ///
2. Learners listen attentively.	### ////
3. No side talks.	///
4. Learners raise hand.	//
5. Responding to questions.	//
6. Asking question.	///
7. Seeking clarification from teacher or peer.	//
8. Following instruction.	////
9. Doing classroom work.	/
10. Working or discussing in group.	0
11. Making presentation.	0

Data in Table 2 reveals that the learners passively participated during the lesson. Class attendance was impressive – they attentively listened to the domination of the teacher; but, they seldom asked questions but for clarification; and, they were not inquisitive. The learners are trained to be obedient by following instruction with inquiry. Active classroom participation seemed to be nil (zero). No student was demanded to make presentation, work in group or have group discussion.

Conclusion

Based on the findings, the study concludes that generally the learners were not actively engaged – no active participation from the learners throughout the lesson. This could be due to the fact that the teachers had not employed techniques that trigger the learners' curiosity to be fully engaged in the teaching. This agrees with the position of Barata, Gama, Jorge, and Gonçalves (2017). The study concluded that the teachers employed the use of the lower learning task experience (directing technique) rather than the medium learning task experience (discussion technique) or higher learning task experience (Delegating technique). This is why the lessons were not engaging the learners actively, and considered teacher-dominant lesson as identified in the study of Otukile-Mongwaketse (2018). The need for active learner participation in classroom as opined by Sahlström (2002) is lacking in the lesson. As pointed out by Mustapha et al. (2010), application of higher learning task experience encoaugres active participation. In fact, Mustapha et. al maintain that there no right or wrong teaching technique and that application of all or any is situational and dependent on factors. Therefore, teachers should learn how and when to apply appropriate teaching technique (Killen & O'Toole, 2023) to improve participation (Ali, Iqbal, Avaz, & Saiid, 2022; Mustapha et al., 2010) which breed effecive learning (Hopkins, 2023).

Recommendations

Based on the conclusion of this study, the following recommendations are put forth:

1. Teachers should gradually transcend from lower to higher learning task for the learners to be actively engaged.
2. Teachers should note that all techniques are right and applicable but they are factor-dependent.
3. Teachers should also allow learners to be able to freely and actively be engaged and invite them for participation.
4. Teachers should recognise learners by name, group them, give projects and other similar tasks to promote active participation as well as to develop learners' learning interest.
5. Teachers should understand that engaging learners starts from simple response to questions to project execution.

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Qualitative Study on Changes, Development and Behavior of Organization in Nigeria: A Systematic Review

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Abstract

Change is an inevitable fact of life from birth to death, affecting cultures, countries, and societies. Especially today, change is happening faster than in the past, and this causes societies and organizations to face much more change than they need to keep up with. Organizations can only survive if they change themselves by adapting to these rapid changes. In this study, definitions of organizational change were given, and the factors that cause organizational change were described. Then, the theories of change were mentioned depending on the reason for the change and the changes it brings about in the organization. Then, resistance to change, management of organizational change, organizational development and organizational behavior were examined.

Keywords: Change, Development, Behavior, Organisation

Introduction

In today's dynamic and competitive business landscape, organisations constantly face pressures to adapt, evolve, and improve. The ability to navigate change effectively, foster growth, and understand human behaviour within the organisational context has become paramount for sustained success. An organization can be defined as a social unit of people, within a structure, with varied and various roles, personalities, needs, wants, anticipations but with a common goal (manifest or latent) which cannot be achieved by one single individual among the people. No adult has attained the current status without having to have undergone change. Otherwise, the adults remain babies in all ramifications. This is the metamorphosis principle applicable to humans. As it is with humans, so it is with organisations. For organisations to be productive, they must undertake and undergo some fundamental changes. This undertaking is a process with thorns of roses.

It is true that what is constant is change. Further, what is constant about change is lack of change- change will not change; and that change will continue to be the desired effort of successful managers of organizations. Indeed, organisations cannot sustain the achievement of their goals without changes in both human and nonhuman resources. Administrators and or managers cannot continue to do the same thing and expect to change the status of their organisations. The process of introducing the new way of doing things is what is referred to as change process. Ironically, man is always aspiring for different better situation which can only result from change, but the same man is often scared stiff to face, effect and or embrace change. We should also note that attempts to introduce a new way of doing things will receive some resistance especially by those benefitting from the current status quo. It is the resolve of the change agent that makes the differences in the level of success. Indeed, the process of introducing change can find the resolute change agent in a lonely path. Organizations can only survive if they change themselves by adapting to these rapid changes (Erdoğan, 2012). Change involves recognizing the current situation, determining the desired results, initiating an action plan and implementing the plan in line with a purpose (Calabrese & Shoho, 2000). According to the Concise Oxford Dictionary, change is simply described as alteration from one working system to another. This is the view on organisational change; change is any alteration from one form or system to another.

Change is hereby conceptualised as a coping process of moving from the present state to another state that individuals, groups and organisations undertake in response to dynamic internal and external factors that alter current realities. This definition is very apt because change is one reality with which individuals, groups and organisations must learn to cope



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with in order to survive. There's no fallacy to remind us that people, including employees, struggle to change situations they do not accept, and struggle to accept situations they cannot change. Consequently, change is a recurrent decimal in the lives of humans (Maicibi, 2016). In a related view, Greenberg (1997) defines organizational change as planned or unplanned transformations in an organization structure, technology and / or people. The nature of business in today's environment is complex and increasingly difficult to navigate, thus all organisations must respond to a varying level of strategic and operational pressures which may be from within the organization such as aspirations to improve efficiency, increase effectiveness and strengthen competitiveness; but many are externally generated in the form of increased competition, speed of change, technology, customer expectations and others. The simplest definition of organizational development is to change the organization in order to achieve its objectives because competitive conditions require organizations to protect themselves and survive under these conditions. Organizational development affects change through learning processes. In the learning process, new ideas and attitudes emerge that change the behavior and culture of the organization (Ellis & Dick, 2003). In essence, organizational change brings about organizational development which in turn affects organizational behavior.

Organisational Change (OC) In Nigeria

Organizational change can be defined as changes caused by an “environmental shift that, once sensed by the organization, leads to an intentionally generated response” (Porras, Silver 1999). In the Nigerian context, organisational change has become increasingly necessary due to economic fluctuations, technological advancements, policy reforms, and globalization pressures. What Porras and Silver are explaining to the reader is that for an organization to experience change, it first needs a reason to change due to outside factors. Organizational change is a simple cause and effect scenario, where a cause of some sort, either internal or external, ultimately creates an effect of the organization needing to change. According to some researchers, organizational change is an extremely complex dynamic of time, processes, and contexts that are incorporated into an organization (Cameron, Pettigrew, Woodman 2001). Organizational change OC is the process by which organizations move from their present state to the desired state to increase their effectiveness.

Types of Organisational Change in Nigeria

Organizational change can be categorized into several types, including strategic, structural, technological, people-centric, and transformational changes. These changes can be planned or unplanned, and they can be incremental or radical in nature. Understanding these different types is crucial for effective change management.

1. **Strategic Change:** This involves shifts in the organization's overall direction, market positioning, or business objectives. It often stems from a need to improve competitive advantage or respond to market opportunities and threats.
2. **Structural Change:** This type of change focuses on modifying the organization's internal structure, such as team configurations, reporting lines, or departmental setups. It can involve creating new departments, merging existing ones, or altering leadership roles. (E.g. the consolidation of Nigerian banks)
3. **Technological or Process-Oriented Change:** This refers to the adoption of new technologies or the redesign of processes to improve efficiency, productivity, or quality. Examples include implementing new software, automating tasks, or streamlining workflows.
4. **People-Centric Change:** This type of change addresses the impact of change on employees, including their attitudes, behaviors, and skills. It may involve training programs, communication strategies, or initiatives to manage resistance to change.
5. **Transformational Change:** This is a large-scale, fundamental shift that redefines the organization's core identity, mission, or business model. It often involves significant disruption and requires strong leadership and vision.
6. **Incremental Change:** These are small, gradual improvements made over time to existing processes, systems, or practices.



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7. **Adaptive Change:** This involves making adjustments to existing structures or processes in response to changing circumstances or external pressures.
8. **Remedial Change:** This type of change focuses on rectifying past errors or inefficiencies, such as addressing post-merger integration problems or sales declines.
9. **Planned Change:** This refers to changes that are deliberately initiated and systematically implemented through a structured process with defined goals and timelines.
10. **Unplanned Change:** These are changes that are forced by unexpected events or circumstances, requiring rapid adaptation without extensive preparation.

By understanding these different types of organizational change, leaders can better anticipate the challenges and opportunities associated with each, develop appropriate change management strategies, and improve the likelihood of successful implementation.

Challenges of Organisational Change in Nigeria

1. **Resistance to Change:** Employees often fear job loss or uncertainty, leading to low morale or sabotage.
2. **Poor Leadership and Communication:** Ineffective management of the change process causes confusion and mistrust.
3. **Inadequate Resources:** Many organisations lack the funds and expertise needed to implement large-scale transformation.
4. **Political and Bureaucratic Constraints:** In public institutions, rigid structures and political interference hinder change initiatives.
5. **Cultural Rigidity:** Traditional beliefs and hierarchical relationships can slow acceptance of modern management practices.

Resistance to Change

The main strategy of change is to overcome the resistance to change. It is very difficult to anticipate all problems in the process of organizational change. Using both reward and punishment methods together in the change process will be very effective (Johns, 1973). There is always an obstacle to change and these obstacles consist of various elements. For example, the tension between “doing business as usual” and “creating the future and change” is one of the first tensions (Floyd, 2002). Reactions to change in organizations can occur at any stage of the change process, including planning, initiation and implementation. The sources of reactions to change in organizations can be very different. If the change affects the status of individuals and is imposed from the top management, and if there is a lack of information and skills, more resistance is encountered (Willower, 1963). Since change involves many unknowns about the future, individuals may resist change because they are afraid of losing things such as their position and salary at the end of the change. Individual resistance to change can be caused by differences in personal perceptions, personality traits, habits, threats to power and influence, and fear of the unknown (Hellriegel & Slocum, 2011). Individuals are generally against change for fear of losing their current status and power. If the organizational management has a hierarchical structure, change will be more difficult in this organization than in a horizontally structured organization. In addition, if the existing rules and values in the organization will be affected by change, this situation also makes change difficult (George & Gareth, 2002).

It has been stated by many researchers that there is a connection between the organization and its environment. Organizations resist change because they have technical and institutional connections with their environment. The internal and external environment of the organization expects the organization to work efficiently at a certain standard. If an organization fulfills what is expected of it and achieves certain standards in its activities, the need for change may not be felt because it is thought that internal routines and external connections may be damaged by change (Amburgey et al., 1993). When the reasons why individuals resist change are understood, it becomes easier for change to occur. The reasons why individuals resist change are as follows (Ellis & Dick, 2003):



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1. Loss of control: Change is acceptable for the individual bringing about the change, but not for others.
2. Uncertainty: Any change involves uncertainty and this causes individuals to be hesitant.
3. Surprise: It is normal for individuals to resist a new situation.
4. Future anxiety: Individuals have many concerns about the new situations that will arise with changes.
5. Chain effect: The change may cause a chain reaction by affecting other areas.
6. More workload: Change involves more time, effort and energy.
7. The threat is real: The threat perceived by individuals is real because change often creates two groups, winners and losers.
8. Job Security: people fear losing their jobs due to change. This is especially true in the recent times when downsizing the organization as a measure of cost cutting is the trend.
9. Lack of Communication: Different people will see perceive proposed change in different ways and resist it. Therefore, management must communicate in advance the need for change, process to adopt for implementation of change. Employees should be the participants right from the beginning of change process.
10. Rapidity and Extent of Change: If the change is of a minor nature and involves routine operations, the resistance would be minimal. If on the contrary the change is major and involves large number of employees there could be tremendous resistance to it.
11. Group Phenomenon: Individual resist change because group wants it that way. Importance of group cohesion, group norms, code of conduct and the group security play a dominant role in individual behavior that makes them to resist change.
12. Emotions: If the experience of a past change has been pleasant, the resistance would be negligible. Technical change is accepted willingly if it does not have adverse effect on social fiber of the group. Resistance may be faced if the change ignores already established institutions in the group with particular reference to customs and group norms.
13. Loss of Power: Downsizing of department or posting of an executive to different department, where there is a reduction of power base will be resisted by the affected individuals.
14. Technology: Introduction of technology that causes economic loss and disturbs social relationship is generally resisted.
15. New Practices: Certain practices like women domination at the top and strategy of acquisitions and mergers is also resisted by the employees.

Managing Organizational Change in Nigeria

Managing organizational change in Nigeria involves a multi-faceted approach that prioritizes open communication, stakeholder engagement, and addressing cultural nuances to minimize resistance and maximize buy-in. Organizational change is a difficult process for managers to implement because there will be a lot of resistance to change from inside and outside the organization. Managers who want to manage change effectively and create a culture of change within the organization should ensure change by creating a collaborative culture and mutual understanding. The reason for this situation is that among the reasons for the resistance to change is the criticism that other individuals in the organization are not sufficiently involved in the process, are not represented or consulted (Floyd, 2002).

One of the most important skills of a leader is to make the organization accept change with the least resistance. Even if the organization is instinctively opposed to change, it must react to the actions of its social and economic environment in order



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to exist (Johns, 1973). For change to be successful, the management team and employees need to cooperate. Training, performance and organizational development are effective in the success of change. Change is both inevitable and permanent. Successful organizations not only respond to change, but also drive it (Lee & Kraye, 2004). Change practices take a long time and when the change process is completed, the factors that initiated this process may have changed. For this reason, it is necessary to initiate a change initiative again (Johns, 1973). In order to carry out an effective change program, it is important that all organizational members support and are willing to change. Some characteristics of successful change processes are as follows (Hellriegel & Slocum, 2011):

1. Overcome resistance to change and motivate leaders and employees to be ready for change.
2. Create a shared vision for the desired future state of the organization.
3. Develop political support for needed changes.
4. Manage the transition from the current state to the expected state.
5. Change should be at a certain pace.
6. Organizational employees need to feel threat-free in order to sustain change because individuals who feel threatened immediately become defensive.
7. The organizational structure must support change.
8. Members must work together to perceive reality.
9. Real change occurs and develops simultaneously at different levels. Organizational change occurs at the conscious, subconscious and behavioural levels of members.
10. Awareness of the current situation is key feature of change. Effective change occurs when individuals are aware of the current situation and the consequences.
11. Dialogue is necessary to develop a sense of responsibility. Dialogue is fundamental in learning organizations as it fosters honesty, trust and perception.
12. Need or hunger is necessary for change. Individuals must be hungry for learning. Hunger occurs when there is a realization of the need for change.

Lewin's Model of Organizational Change

Kurt Lewin developed the Force Field Theory, which explains that when a decision to implement change is taken, it becomes important to identify as to what forces are likely to push the change and what forces are likely to restrain it. The process of identifying the number and strength of driving and restraining force is called the force field analysis. If the analysis indicates that the restraining force is strong, steps may be required to reduce their strength or increase the strength of the driving force. This may be carried out by briefing sessions, meetings and conveying a point informally. This is an important action to overcome resistance to change exhibited by people. Kurt Lewin proposed Three Stage Model of the change process for moving the organization from present position to the changed position. This is done by unfreezing the current situation, bringing the desired change and then refreezing the system so that it continues to stay in desired state.

Unfreezing: It involves encouraging employees to discard old behavior by shaking equilibrium state. A proactive problem is presented so that people recognize the need for change. Practice of elimination of rewards for current practices is followed. This encourages people to adopt new ways.

Moving: Alter the behavior of individuals of the department in which the changes are to occur. Moving employees developing new behaviors through structural changes or organizational development.

Refreezing:



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1. Change becomes permanent, new behaviors are established as new status quo.
2. The new ways of operating are cemented and reinforced.
3. Manager, at this stage ensure that organizational culture and reward system encourage new behavior and stabilize it rather than falling back on old practices.
4. Becoming aware of the pressure of the change
5. Recognizing the need for change
6. Diagnosing the problem
7. Planning the change
8. Implementing the change
9. Follow up on the change

The organizational change model created by Lewin (1958) includes the stages of “unfreezing”, “change” and “refreezing”. The unfreezing phase is the realization of the need for change in the organization, making the necessary preparations and the beginning phase. It is the end of the stagnation period in the organization and the completion of preparations for action. The stage of change is the stage of taking action and sustaining it. The important point at this stage is timing. Mistakes made by the manager in timing can lead to problems. When the intended change is achieved, the organization is refrozen. Leaders as change agents should make change a culture in the organization (Örücü, 2013).

Employees' Behavior (Reactions) to Organisational Change in Nigeria

Organizational change and development affect all aspects of a company and employees are a major aspect. They impact the company as much as the company impacts the employees. So, if the company must go through a change to improve, then the employees will experience a change as well. Whether this process of change is done correctly or not, the impact organizational change and development have on employees has a great significance. One of the most key things one must prepare for are the employees' emotions, but first the leader or leaders must deal with the employees' reactions.

Employees' reactions to change are influenced by a number of factors. It is reasonable to expect employees to react since the process of change involves going from the known to the unknown, and when employees react, it is important to distinguish between the symptoms of their reactions and the causes behind them (Bovey & Hede, 2001b). Three factors that research strongly identifies as influencing employees' reactions to change: employees' emotions and cognitions, communication, and employees' participation in decision making (Wittig, 2012).

Organisational Development (OD) In Nigeria

Organizational Development (OD) in Nigeria is a planned process to improve performance and effectiveness, focusing on adapting to a dynamic environment through strategic change, leadership, and human resource practices. Organizational development is different from organizational change. Change is related to the response of outside environments, while development pertains to the values, strategies, and techniques that organizations use to manage change. Development also promotes change that helps the organization fit the surrounding environment better (Porras, Silver 1999). The changes that an organization is faced with are what directly causes organizational development to occur.

Five Key Benefits of Organizational Development to Nigeria

Organizational Development is the practice of planned, systemic change in the beliefs, attitudes and values of employees for individual and company growth. The purpose of OD is to enable an organization to better respond and adapt to industry/market changes and technological advances (Hadi, 2014). So these five benefits list of a company experiencing organizational development is: (1) Continuous Improvement (2) Increased Communication (3) Employee Development (4) Product & Service Enhancement and (5) Increased Profit.

1. Continuous improvement; in this it creates a continuous cycle of improvement whereby strategies are planned, implemented, evaluated, improved and monitored. Organizational development is a proactive approach that embraces change (internal and external) and leverages it for renewal (Hadi, 2014).
2. Increased communication; it is a goal of improving communication to align all employees with shared company goals and values. Candid communication also leads to increased understanding of the need for change within the organization. Communication is open across all levels of the organization and relevant feedback is recurrently shared for improvement (Hadi, 2014).



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3. Employee development; the need for employee development stems from constant industry and market changes. This causes an organization to regularly enhance employee skills to meet evolving market requirements. This is achieved through a program of learning, training, skills/competency enhancement and work process improvements (Hadi, 2014).
4. A major benefit of OD is innovation, which leads to product and service enhancement. Innovation is achieved through employee development, which focuses on rewarding successes and boosting motivation and morale. In this scenario, employee engagement is high leading to increased creativity and innovation. Organizational development also increases product innovation by using competitive analysis, market research and consumer expectations and preferences (Hadi, 2014).
5. Finally, through raised innovation and productivity, efficiency and profits are increased. Costs are also reduced by minimizing employee turnover and absenteeism. As OD aligns objectives and focuses on development, product/service quality and employee satisfaction are increased. The culture shift to one of continuous improvement gives the company a distinct advantage in the competitive marketplace (Hadi,2014)

Organizational Behavior in Nigeria

Organizational behavior (OB) on the other hand is the study of human behavior within an organization, examining how individuals, groups, and the organization itself interact and influence each other. OB aims to understand why people behave the way they do in a workplace and how these behaviors impact the organization's effectiveness. The study of organizational behaviour is one of the most important elements in the management. Organizational behaviour aims at helping managers and supervisors in different ways. It plays an important role in all facets of managing an organization. OB is related with the identification, analysis and applying the knowledge regarding how individuals behave individually and in a group. In addition to this it also aim at analyzing how individuals as well as groups influence the organizational systems. The prime objective of OB is to maintain healthy and sound interpersonal relationships in the organizations. OB focuses on all those factors which have bearing on the individuals and group dynamics in the organization. Organizational behavior (OB) is typically studied at three levels: individual, group, and organizational. These levels represent distinct yet interconnected perspectives on how individuals and groups behave within an organization and how the organization itself functions.

1. Individual Level:

This level focuses on the psychological and behavioral characteristics of individual employees, such as their personalities, perceptions, attitudes, motivation, and learning.

It explores how these individual factors influence their behavior in the workplace and their contributions to the organization.

Key concepts at this level include perception, motivation, personality, learning, and attitudes.

2. Group Level:

This level examines the dynamics within groups and teams, including how individuals interact, communicate, and work together.

It explores factors like group size, structure, roles, leadership, and communication patterns, and how these influence group performance and effectiveness.

Areas of focus include group dynamics, leadership, and communication.

3. Organizational Level:

This level takes a broader perspective, examining the organization as a whole, including its structure, culture, systems, and environment.

It explores how organizational design, culture, and strategy influence individual and group behavior.

Key concepts include organizational structure, culture, change, and the organization's relationship with its external environment.

These three levels are interconnected, and changes at one level can affect the others. Understanding OB at all three levels provides a comprehensive view of how organizations function and how to manage and improve them.



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Models of Organisational Behaviour (OB) in Nigeria

Various models have been developed to study the behaviour of people at work. The organizational behaviour models were developed on the basis of the approach of management and various assumptions. The selection of any model to be practiced in the organisation depends on the prevailing situation and practices used by management because models constitute the beliefs and value system which affects the management actions directly. It is the duty of a manager to make the management aware regarding which model is more suitable for the organisation. Managers also make them aware about nature, significance and effectiveness of the model. Douglas McGregor was the first person to give attention to managerial models. He gave two theories: theory X and theory Y about human behaviour. Later, majority of the models were developed on the basis of the assumptions of theory X and theory Y.

Theory X stated that human beings usually dislike to work and they tend to avoid work as much as they can. They also avoid taking responsibilities. Human beings are ambitious about their career. They only want security in job without putting much effort. Managers need to control, threaten and give them punishment to get work done through them. In opposite to this theory Y stated that, people are not lazy but they become lazy with time. This theory suggested that human beings will exercise self-direction and self-control only if they commit the service of objective. According to this theory, people have potential to work, ability to learn. They accept the responsibilities and can apply their creativeness on work, if they are creative.

Conclusion

Organizations affect other organizations around them and cause change on them, and at the same time, they are affected by the changes that occur in their environment. Organizational change is necessary for organizations to develop and keep pace with changing conditions. Today, change continues at a dizzying pace. The information produced and the news received by individuals are consumed in a very short period of time. It is difficult for individuals and organizations to keep up with this speed. However, catching up with change is one of the most important requirements of today. Some factors that cause change are globalization, gaining competitive power, survival.

Change is a necessity, but individuals do not favor change when they are not complaining about the current situation. For change to occur there must be a disturbing situation or a problem in the environment. Effective change must solve a problem. In cases where individuals do not see a problem in the environment, resistance to change emerges. In fact, the reasons for resistance to change include individuals' desire to maintain their current situation, the idea that change will bring uncertainty and concerns about the new situation that will arise as a result of change.

The success of the changes to be realized at the school level mostly depends on the success of the leaders. For this reason, school principals should assume a leadership role. School principals can effectively manage change by giving importance to communication with teachers, creating a collaborative culture and making themselves a part of the change (Taş, 2009). Leaders as organizational change agents should create a sustainable culture of change. In order to achieve change at today's pace, leaders need to constantly examine their environment, make change plans and guide individuals. If there is a culture of consensus, tolerance and trust in the organization and the need for change is felt by all employees, resistance to change will be low.

Recommendations

1. Leadership Commitment: Strong, visionary leadership that communicates and models the desired change.
2. Employee Involvement: Participation of staff in planning and decision-making enhances ownership.
3. Capacity Building: Training and development to build skills needed for the new system.
4. Effective Communication: Clear, consistent, and transparent information sharing.
5. Monitoring and Evaluation: Continuous assessment to track progress and make adjustments.



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Qualitative Study on Nigeria-China Relations and its implications for National Development: A Historical Perspective

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Abstract

Over the past two decades, bilateral ties between Nigeria and China have intensified, driven by China's strategic interest in Africa in general and Nigeria in particular, as well as Nigeria's quest for trade development through trade expansion, and foreign investment. This paper explores the benefits of this partnership. It looks at the multifaceted relationship between Nigeria and China, emphasizing its implications for national development. Among other issues, the paper examines the historical context of Nigeria-China engagements, emphasizing developmental opportunities and challenges. Drawing on secondary sources and critical content analysis of extant literature as its methodology, the assesses how Nigeria-China relations fosters sustainable national development. The paper concludes by offering policy recommendations aimed at maximizing the benefits of the partnership while mitigating associated risks, emphasizing the need for strategic negotiation, improved governance, and stronger regulatory frameworks.

Key words: National development, economic cooperation, Nigeria-China relations, policy.

Introduction

The diplomatic and economic relations between Nigeria and China have grown substantially over the past two decades, transforming into a significant partnership that influences Nigeria's development trajectory. China's Belt and Road Initiative (BRI) and increased foreign direct investment (FDI) in Nigeria are central to this relationship, promising infrastructural development and economic opportunities (Adeoti & Oladipo, 2019). The world becoming a global village has made it impossible for a nation-state to be an island on its own. The interconnectedness and interrelationship between states have made interdependency in the international system a day-to-day reality in the contemporary world. The world has become so knitted together that almost everything can be done anywhere in the world, through technology, without any hindrance. Thus, bilateral, and multilateral relations between and among nation-states of the world have become easier. Cohn (2010) posits that states relate for the political pursuit of power and use the market with the economic pursuit of wealth. Consequently, relations between African states (Nigeria inclusive) and China are economic pursuit of wealth by the two parties. China and Africa, for instance, relate not just for the sake of it but for economic interest and development. As a matter of fact, the impacts of Chinese economic activities are being felt in many parts of Africa. When two countries trade, the gains that would accrue to any of the nations would largely be dependent on the structure of output for each country and their comparative advantages. China's engagement with Africa is largely driven by China's need of resources to power its modern, growing economy and to support its expanding industrial base. The rapid growth of its manufacturing sector has created increased domestic demand for natural resources, and these are natural resources Africa has in abundance. Added to the resource seeking, Africa is seen by China as a potential market for the sale of Chinese products. While Chinese growth relies heavily on manufacturing sector, it needs a new and dependable consumer market to sustain its steep developmental trajectory (Ayodele and Sotola, 2014).

China's strategy of gaining access into African markets for its own benefit is pervasive in Nigeria's economy. Firstly, by establishing diplomatic mutual relationship with Nigeria, China offered a small aid package that featured education and trade. The aid package grew once Nigeria viewed China as a substitute partner to complete its infrastructure deficiency. Through infrastructure, Chinese companies were able to settle in Nigeria to complete different projects that were requested. Access to Nigeria's oil sector was eased for China because the President Yaradua attributed many oil blocks to China to complete Nigeria's infrastructure (Vines et al., 2010). Subsequently, its engagements with the country have continued to



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grow following its strategic interests. China has penetrated not only into small scale industries in Nigeria but also into major markets in the country. In Nigeria's major markets like Onitsha and Kano, the sight of Chinese has become usual. In the area of trade, China exports more to Nigeria resulting in huge trade imbalances to its favour (Manko Rose, 2015). The imbalance volume of trade is harmful to the Nigerian economy. The influx of cheaper and more sophisticated items of trade from China into Nigeria makes Nigeria a dumping ground. This is also contributing to the death of infant industries, most especially, the textile industries. The activities of Chinese are posing a serious challenge to the industrialisation of Nigeria. The act of dumping of Chinese goods into the Nigerian market is a recurring decimal. Chinese is synonymous with fake, cheap, and low-quality products in the country. Reports of seizure of contraband and fake products from China are rife in the news. It is against this background that this paper seeks to examine Nigeria-China trade relations and its impact on Nigeria's economic growth and development.

Conceptual Clarification

National Development

Development as a concept is a victim of definitional pluralism. It is a difficult word to define. However, attempts have been made by erudite scholars to conceptualize development. Some of these definitions will be explored for the purpose of this study. Gboyega (2003) captures development as an idea that embodies all attempts to improve the conditions of human existence in all ramifications. It implies improvement in material well-being of all citizens, not the most powerful and rich alone, in a sustainable way such that today's consumption does not imperil the future, it also demands that poverty and inequality of access to the good things of life be removed or drastically reduced. It seeks to improve personal physical security and livelihoods and expansion of life chances. Naomi (1995) believes that development is usually taken to involve not only economic growth, but also some notion of equitable distribution, provision of health care, education, housing and other essential services all with a view to improving the individual and collective quality of life. Chrisman (1984) views development as a process of societal advancement, where improvement in the well-being of people is generated through strong partnerships between all sectors, corporate bodies and other groups in the society. It is reasonable to know that development is not only an economic exercise, but also involves both socio-economic and political issues and pervades all aspects of societal life. National development National, according to Longman dictionary of contemporary English, refers to a phenomenon that embraces a whole nation. National development therefore can be described as the overall development or a collective socio-economic, political as well as religious advancement of a country or nation. This is best achieved through development planning, which can be described as the country's collection of strategies mapped out by the government. National development entails the full participation of the citizens in the political, social, economic and technological affairs of the country (Adeleke & Adegunle, 2020). It aims at harmonizing the goal of quality and quantity which will be measured in areas such as equal quality education, shelter, clothing, water, etc. National development should be the concern of both the rulers and the ruled of the Nigerian society.

Historical Overview of Nigeria-China Relations

Sino-Nigeria relations have developed rather slowly over the years. Over time, the relationship expanded from diplomatic recognition to comprehensive strategic partnership, marked by high-level visits, bilateral agreements, and economic cooperation. Historically, concerted diplomatic relations between Nigeria and China began in 1971, overcoming the hostility of Chinese support for Biafra during the Nigerian civil war of 1967–1970. During the Abacha years of 1993–1998 when Western aid was cut off because of the human rights record of the regime, Nigeria adopted a "Look East Policy", which strengthened the Nigeria-China alliance and built trust between the two nations. Cooperation has continued and increased in volume over the years. Since the return to democratic rule in Nigeria, successive Nigerian presidents have had to visit China. In 2005, China and Nigeria issued a joint communiqué with China announcing Taiwan as an inalienable part of the territory of China. In 2015, China endorsed Nigeria's attempt to become a permanent member of the UN Security Council, while Nigeria supported China's position in territorial disputes in the Pacific region. China has also provided military support in counterinsurgency efforts in the Niger Delta (Ramani, 2016).

Nigeria and China have both accomplished a great deal in infrastructure, investments, oil, culture, education, and industry. China has up to 30 solely owned companies or joint ventures in Nigeria, majority actively engaged in constructions, oil, and gas, technology, services, and education sectors of the Nigeria economy. And, while China has a lot to give, Nigeria would need all the help it can get, keeping in mind that this will be a win-win situation for both parties (Imanche et al.,



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2020). Nigeria is China's most important project-contracting market, most significant export market, second-largest trading partner, and major investment destination in Africa. The bilateral trade volume in 2019 was \$19.27 billion, up 26.3 percent year on year, and ranked first among China's top 40 trading partners (Quadri, 2020). Good political relations have spilled over into economics. In 2006, China and Nigeria signed a memorandum of understanding (MOU) on the establishment of a strategic partnership, which was the first for an African country. The partnership led to an oil-for-infrastructure arrangement, under which Chinese companies were offered first access to oil-processing licenses. President Jonathan's visit to Beijing in 2013 led to a US\$3 billion loan for infrastructure which included expansion of the airports in Lagos, Kano, Abuja, and Port Harcourt. Following President Buhari's visit in 2016, Nigeria was offered an infrastructural loan of US\$6 billion (Adunbi and Stein, 2019) Chinese companies have increasingly been locating to Nigeria. As of 2013, according to the local investment agency, there were 208 registered Chinese companies in Nigeria focusing on oil and gas, construction, and telecommunications (Umejei, 2015). By 2016, the number registered with the investment agency had grown to 308 though the numbers could be considerably higher (Sun et al., 2017). Nigeria has also been one of the largest recipients of loans from China. Between 2010 and 2015, Nigeria received the fourth-highest amount of loans in Africa from China and the sixth highest over the longer period of 2000–15 (SAIS-CARI, 2018). Between 1995 and 2017, Nigeria has been the second-largest importer of Chinese goods after South Africa. Exports to China have also been in the top five in most years over the same period (UNCTAD, 2018).

Drivers of Nigeria's Relations with China

Nigeria, with its abundant energy reserves, potential economic growth, and human resources, could be considered an influential power in the African region. Its active contributions to peacekeeping operations and its critical role in promoting the end of the slave trade and colonialism in Southern Africa, has gained it support and improved its reputation with other African countries. Acknowledging its regional influence, Nigeria has ambitions to represent the continent on the global platform. Also, Nigeria became the largest economy in Africa in 2013. These facts all indicate that Nigeria could be the leading representative for Africa. However, Nigeria's economic problems have been compounded by security challenges and widespread corruption, which have affected the revenue base necessary for meaningful growth and development. Largely relying on energy exports has hindered the diversity of its economy, especially the development of its agricultural industry. Lacking refinery facilities, the state remains an oil importer despite its abundant energy reserves. According to an investigation by the local newspaper Punch at the end of 2012, over N5tn (US\$32.3billion) in government funds have been stolen through fraud, embezzlement and theft since President Jonathan assumed office in May 2010 (Ogunseye, 2012). At this point, it must seek support from the AU and big powers from other continents. China on the other hand traditionally considers itself a representative of developing countries and the developing member states of the UN Security Council. Therefore, it became a key political supporter of Nigeria's quest. In 2005, the then Chinese Foreign Minister Li Zhaoxing exchanged such views with Nigerian Foreign Minister Oluyemi Adeniji on UN reform (People's Daily, June 5, 2005). At the same time, China's chief spokesman Liu Jianchao said that China supports Africa, the continent with the largest number of developing countries, playing a greater role in the UN, including participation on the Security Council. (MOFA, March 29, 2005). Nigeria's political needs can motivate it to stand with China for political considerations.

Economically, Nigeria needs China for its economic reform: funds for structural transformation, economic aid, and local production to prevent over-reliance on oil exports. Despite large amounts of energy reserves, Nigeria has not fully taken advantage of its oil income to generate national wealth. The oil industry has played a dominant role in Nigeria's national income. However, the rural sector has been neglected. When the global oil price declined during the 1980s, the country's development stagnated, which led to the deterioration of Nigeria's economic and social conditions. Simultaneously, the structural adjustment introduced by World Bank and IMF has been challenged by domestic pressure. —Towards the end of 1990, the Government began to retreat from the reforms --- meaning, the loans provided by the funding sources were suspended (Moser, et al, April 4, 1997). During the same period, the Chinese enterprises had entered Nigeria market, and bilateral trade began to develop. Beijing, with its large amount of funds, provided the country with an alternative opportunity, especially after assistance from the Western world dropped significantly from 2008, because of the global recession. China appears to be filling this gap. As an emerging economic power, China can provide investment, loans and other kinds of financial assistance for which Nigeria is thirsty. Compared to most other African countries that need funds, Nigeria has a more ambitious demand. The state experienced a period of yearning for economic transformation, from being



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dependent on imports to boosting local production. As a country exporting crude oil but relying on petrol imports, Nigeria needs to develop an industrial sector as a tool for job creation, food security, poverty reduction, and sustainable growth. Similarly, having the largest population on the continent, the country can provide cheap labour force. In this case, China's successful economic transformation and industrial development have provided Nigeria with a good example of how to become a world factory that produces the goods not only consumed by domestic costumers but also exports to the rest of the world. Furthermore, Beijing has enough funds to invest in Nigeria's industrialisation by providing infrastructure and establishing factories for manufactures. It offers Nigeria an economic opportunity to achieve its transformation agenda if political elites can properly take advantage of Beijing's pledges.

Nigeria-China Trade Relations and Its Implications on National Development

The existing literature argues that China's needs in Africa are resources, markets for its exports, and political support on its territory and human rights abuses. Dijk and Pieter (2009) enumerate eight different objectives for China's engagement in Africa: providing raw materials for its manufacturing sector, presenting a niche market for Chinese products and services, acquiring land for its agricultural ends, transferring some of its population through migration, acquisition of diplomatic support, becoming a superpower, instead of the current prevailed Western model presenting an alternative development model and partnership (Van Dijk, 2009). As for Nigeria, it has vast energy reserves and a large domestic market with huge population, both of which certainly meet China's basic needs. Apart from these demands, Nigeria, as the most populous African country has political and economic interests beyond oil, markets, and international support. Vice Versa, Nigeria needs Chinese investment, technology, and assistance to fuel its economic growth. Hence, bilateral relations have developed based on mutual demands.

As the most populous country in the continent, Nigeria has played a leading role in West Africa. In 2010, during his talk with the then President Goodluck Jonathan, the US President Obama stated that Nigeria is critical to the rest of the continent and if Nigeria does not get it right, Africa will not make more progress (All Africa, April 13, 2010). On one hand, it indicated that Nigeria's domestic peace and stability has influenced regional security and development. On the other hand, as a big emerging nation in West Africa, Nigeria has a responsibility to maintain regional peace and stability. The Nigerian government has recognized its critical role in the region and expressed its ambition to become an African leader. Not only has it actively participated in regional peace keeping operations in Chad, Liberia, Sierra Leone, the Democratic Republic of Congo, Angola, Cote d'Ivoire, Somalia, and Darfur in Sudan, but it has also made efforts to form an African voice in the international arena.

Nigeria's desire to become a leading African voice, and its influence in West Africa provided China with the motivation to establish deeper political ties with the country. The two sides have expressed a willingness to cooperate in solving Africa's various conflicts. In a joint press communiqué in 2008, the parties highlighted that the Chinese side hailed Nigeria's long-standing role in the cause of peace in Africa, and in return the Nigerian side applauded the contribution made by China in support of the efforts of the African Union in the peaceful resolution of conflict situations in Africa. (Xinhua News, February 28, 2008). Economically, the massive oil reserves of Nigeria located in the strategic Gulf of Guinea region, and the country's population has not only provided China with a diverse oil supply, but also an export and investment destination for its construction, communication, manufacturing, and retail industries. China's domestic political economy is heavily reliant on energy---intensive industry. To achieve its national economic objectives, it must secure foreign supplies of oil and refined oil products for domestic use. Also, attempting to lower the influence of the international commodity market on oil supply and price, Beijing has sought reliable markets with less competition from traditional developed countries. Nigeria has ranked as one of the largest oil producers in Africa and the 11th largest worldwide. It produces approximately 2.28 million barrels per day and has a proven oil reserve of 37.2 billion barrels (Gwaambuka, 2018).

Nigeria's fragile democracy and domestic violence have made its energy market too risky for traditional oil importers to access, which provided Chinese oil companies with chances to move in without (much) competition. The successful engagement in the Nigerian oil industry could diversify China's sources of oil and reduce its dependence to the highly competitive markets in the Middle East. In short, China is an energy-import-oriented country and will need plenty of oil



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due to its economic growth and domestic growth. With its abundant oil reserves, China needs access to Nigerian oil fields. Furthermore, Nigeria is also considered to have great potential for rapid economic growth. Economist Jim O'Neill has introduced Nigeria as a Mintl country, to indicate its potential to become an emerging economic giant (BBC, January 5, 2014). The diversity and potential of the Nigerian market has attracted Chinese labour-intensive industries, mainly textiles, industrial machinery, telecom equipment, electrical equipment, vehicles, and other manufactures. It provides a good export destination for China's expanding industry that has limited customer bases in either its domestic or other developed markets. Nigerian customers' demands for low-price products helped Chinese enterprises to transfer their uncompetitive industries to this country. Consequently, Chinese consortiums have established free trade zones in Lagos and container areas at the Lagos port. At the same time, China has become Nigeria's largest import partner, and accounted for 17% of Nigeria's total volume. Between 2005 and 2012, Nigeria had the largest share of Chinese investment in Africa -roughly US\$15.6 billion out of US\$97.8 billion (Odeh, 2013). Alaba Ogunsanwo has described —third World countriesl like numerous —antsl standing behind China, —the elephantl. (Cited in Mthembu-Salter, 2013) Even if China had the power of an elephant, Nigeria, with its location, resources, size, and political influence, can hardly be compared to an ant. Considering its political ambitions and considerable oil reserves, China has plenty of motivation to get involved with Nigeria.

Conclusion

Nigeria-China relations have mutually benefited the two nations. In Nigeria, the relationship has significantly influenced national development through increased economic cooperation, infrastructural projects, and trade partnerships. This relationship has facilitated Nigeria's access to Chinese investments, technology transfer, and the development of critical infrastructure such as roads, railways, and energy projects. However, it also presents challenges including trade imbalances, concerns over debt sustainability, and the need for responsible engagement. Overall, Nigeria-China relations hold substantial potential to foster sustainable development and economic diversification in Nigeria, provided that strategic policies are implemented to maximize benefits while managing risks. Be that as it may, the expansion of Nigeria's bilateral interactions with China is constrained by a few factors. These include the imbalance in the structure of level of their trade, the inadequacy of the industrial infrastructure for promotion of relations, the incidence of flooding of the Nigerian market with substandard goods from China and inability to implement various bilateral agreements between the two countries among other problems. However, despite this trade imbalance and other challenges, the bilateral relationship should be symbiotic and mutually beneficial to both countries. Nigeria-China relations should, however, go beyond rhetorics. The possibilities and potentials of a bilateral cooperation between the two countries have not been fully exploited. Nigeria and, indeed, Nigeria should move beyond the bounds of marginality and peripheral association where the nation is looked like a marginal factor merely for tilting matters in favour of developed market economies. Nigeria abounds with immeasurable reservoir of opportunities for trade, investments, business, and cooperation. The indifferent response to invitations of Chinese investors to come and invest in the country has not been encouraging as one would have expected.

Recommendations

It is therefore important that Nigeria-China trade relations need to be reviewed if Nigeria is to maximize the impacts of this relationship. Hence, the following recommendations are put forward:

- (i) Government at Federal and State level should see to the implementation of relevant laws and regulations that bar foreign nationals in certain trade activities and seek to protect domestic industries from Chinese dominance.
- (ii) Partnership between indigenous companies and Chinese counterparts on technology transfer should be encouraged.
- (iii) Government should regulate Chinese trading in Nigeria in the form of quotas, stricter enforcement of import regulations, taxes as well as financial support to home-grown and local manufacturing companies.

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Qualitative Study on management of Primary School level of Education in Nigeria: Problems and Prospects

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Abstract

*Primary schools in Nigeria are facing a lot of challenges regarding management over the years. However, headteachers are charged with the responsibility of overseeing and managing the affairs of their respective primary schools. Based on this the paper is titled *Qualitative Study on management of Primary School level of Education in Nigeria: Problems and Prospects*. Therefore, concept and objectives of primary education, concept of management were highlighted. Management of Primary Education in Nigerian Primary Schools, ways by which primary schools are managed such as; management of human resources, school records, school facilities, school financial resources and primary school curriculum. Challenges facing management of primary education were also explained and these are; inadequate funding, head teachers' factor, lack of cooperation by the teachers, inadequate facilities, politically motivated appointment. The paper recommended among the following' Government should ensure fairness and impartiality in the appointment of primary school teachers, Sustainable and adequate funding of primary schools should be provided by stakeholders and headteachers should discharge their duties with integrity and fairness, treating all subordinates equally.*

Keywords: Headteachers, primary school management, Teachers, School resources.

Introduction

Primary schools in Nigeria are facing a lot of challenges regarding management over the years; it is a formal organization which requires careful management considering its importance and the major concern of each nation. Primary education is the foundation upon which all other system of education relied on. Bearing this in mind, Primary school requires effective management to achieve the goal it is set to achieve. This is because, school is a goal oriented organization that has reason to exist and operate. As a result of this, primary school management is destined for identifying, planning, organizing, controlling, coordinating, directing and budgeting the already allocated primary schools' resources. Moreover, Management is a universal and unavoidable organizational process by which an individual or a cooperative body relates and directs actions and resources to achieve a common goal. However, Ofoegbu (2014) in Nnadi, (2021) defined management as a universal and unavoidable organizational process by which an individual or a cooperative body relates and directs action and resources to a common goal. Similarly, management is the utilization of physical and human resources through co-operative efforts and accomplished by performing the function of planning, staffing, directing and controlling of all the activities in the school. Headteachers are the overseers and custodians of school resources. The resources are provided and shared to school for effective implementation of primary school curriculum. Thus, the headteacher is destined to maintain and utilize what is available in the school. Therefore, Headteacher is the overseer and chief observer of the school, he lead and guide teaching and non-teaching staff, maintain and store facilities allocated to his school, coordinate the implementation of primary school curriculum, ensure peace and safety within the school environment. Delegate power and responsibilities to the deserving teachers. The school head ensures school-community relationship through Parent Teachers' Association (PTA), School Based Management Committee (SBMC) and other medium that help in promoting high moral and academic standard among staff and pupils, Headteachers should be accessible and approachable by teachers, non-teaching staff, pupils and members of the community. He should also make school facilities available for community. The community is to be charged a stipend for using school facilities and arranged



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to be responsible for any damage. Primary school is a formal organization that requires effective management and administration.

Conceptual Clarification

The concept of Primary education, management and primary education management are interrelated concepts that form the foundation and backbone of effective educational administration. However, concept of Primary education, objectives of primary education, concept of management, management of primary education, and challenges of primary education were explained one after the other.

Concept of Primary Education

The first formal organization a child encountered is primary school. Primary school is a formal institution that mould pupils' character and prepare them to face any challenge they may encounter in their future. Similarly, it is expected that pupils will acquire life skills through interaction with teachers, colleagues and school environment. Similarly, Primary Education is the foundation of formal education on which the subsequent level of the nation's education rests, the success or failure of other levels of education depends on it (Gumbi and Ahmed 2017). Therefore, it requires effective management by the stakeholders. These stakeholders are ordained to make wonders in supporting primary school to flourish. Primary school is a system comprising different and multiple components ranging from teachers, pupils, school buildings, school farm and garden, school records, primary school curriculum, sports, school facilities, quality assurance, school safety and security that requires special attention by the headteachers.

Objectives of Primary Education

1. Inculcate permanent literacy, and numeracy and the ability to communicate effectively;
2. Lay a sound basis for scientific, critical and reflective thinking;
3. Promote patriotism, fairness, understanding and national unity;
4. Instill social moral norms and values in the child;
5. Develop in the child the ability to adapt to the changing environment; and
6. Provide opportunities for the child to develop life manipulative skills that will enable the child function effectively in the society within the limits of the child's capability. (FRN 2013).

In order to achieve these objectives, Headteachers should demonstrate and ensure effective and efficient management delivery.

Concept of Management

Management is different thing to different people. However, management is the process of designing strategies that allow all the human, information, technological, and financial resources of the organizations to work together and harmoniously in the achievement of the proposed objectives ... Management exercises its function through the alignment of critical elements such as the mission, vision, values, strategies, and tactics ... that allow the optimization of the diverse resources of the company. (Lopez Morales, 2023). In line with this definition, Management connotes the planning, directing and coordination of school activities in order to achieve the desired goal. Furthermore, Invezz (2024) opined that management refers to the process of planning, organizing, leading, and controlling resources within an organization to achieve specific goals and objectives efficiently and effectively. Nevertheless, Kaehler & Grundei, from *The Concept of Management: In Search of a New Definition* (2019) posited that management is a steering influence on market, production and/or resource operations in an organization and its units that may address both people and non-people issues and is exerted by multiple organizational actors through either anticipatory norm-setting or situational intervention with the aim of achieving the unit's objectives.

Management of Primary Education

Management of primary school entails planning, organizing, coordinating, directing, guiding, reporting and controlling primary school activities to achieve specific goals and objectives efficiently and effectively. However, Obed-Chukwuka and Atakpo (2022), defined management of primary education as a "holistic approach" that includes structuring the primary education system, setting goals, supervising and inspecting schools, planning, managing human and material resources, and ensuring adequate facilities, qualified teachers, and continuous monitoring. Furthermore, management of primary education is connected to ensuring effective student-centred learning, maintaining appropriate teacher-student ratios, and adopting relevant digital literacy skills; the definition implicitly includes supervising staff, managing learning environment,



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and adapting management practices to technological tools. (Elenwo, 2025) However, primary education management in terms of its role in achieving educational quality entails planning and implementing programmes, supervising teaching and learning, managing resources (human, material, financial), and ensuring the policies and school practices align to produce quality outcomes. (Jabborova & Pardaboyeva, 2023)

Management of Primary Education in Nigeria

The following are the ways by which a primary school is managed; Management of human resources, school records, School facilities, school financial resources and primary school curriculum. These will be explained vividly.

Management of Human Resources in Primary school

Human resources refer to personnel management, manpower management, staff management and to some administration. Management of human resources focused on the people side of management, seeking to ensure that the objectives. Human resource management is beyond effective human utilization in school rather, harnessing the total human skills, abilities, talents, attributes, attitudes to achieve educational objectives. Primary school is a goal-oriented institution that depend on its human resources to operate and function effectively. These human resources are teaching staff, non-teaching staff and pupils. It depends on how these resources are being used to determine the success or failure of the system. In relation to this, Manga (2015) The management of all the staff in a school is crucial role of the head master and school principal. Teachers in particular need to be properly administered if the goals of any school are to be realized. Furthermore, FRN, (2013) revealed that the success of any system of education is hinged on proper planning framework, efficient administration and adequate financing. However, Pupils are said to be the centre and target of the education process. The pupils are at the centre of the education process, administrative actions should aim at developing their total personality, in deriving this, the headmaster or principal observe pupils population to ensure that the school overpopulated to unmanageable proportions, the head teacher does that by conducting regular consensus to know the exact population of the pupils in terms of age, gender, religion, classes so as to know the flow of primary school pupils in and out of the school. Manga (2015).

Management of Records

There are a variety of reasons why organizations must manage and maintain their records properly irrespective of whether they are private or public. Records management practices hold keys to evidence-based governance, accountability, transparency, protection of rights, fostering social justice and preserving corporate memory. Records have to be created, classified, arranged, described, appraised, protected and made accessible if they are to serve some of these functions (Matina, & Ngulube 2019). In addition to this, Alabi (2017) stresses that effective records management is essential for the organized administration of educational institutions

School records are those records schools provided and kept for future references and decision making. Jumare (2017) In the same vein, Durosaro & Ogunsanju (2002) Defined school records as official copies or transcripts of proceedings of actions, events or other matters kept by the school manager. Furthermore, primary school records are created, protected and kept for reference. Records are the basic requirements and very important in each school. As a result of this, head teachers are charged with the roles and responsibility of regular check of records, organizing workshop for teachers within the school on it, protect and provides facilities for record keeping, ensure that only authorized person have access to records, ensures effective provision of records when needed. This will only be possible when they make provision for files, cupboards and cabinet, computer, cloud storage services (e.g., Google Drive, Dropbox) stores and notice board in their respective primary schools.

Management of facilities

Primary school facilities play a vital role in achieving the main goal of primary school. In Nigeria today, the main objective of utilizing primary school facilities is to supply a concrete basis for enhancing curricular and extra-curricular activities. However, primary school facilities include buildings such as classrooms, assembly halls, libraries, and workshops, instructional materials such as audio, visual and audio-visual learning materials, devices such as modern educational hardware and their software in the form of magnetic tapes, films and transparencies. Educational facilities therefore, are the materials that facilitate teaching and learning processes in primary school setting. It is the responsibility of primary school administrator to appoint and delegate power to teachers so as to reduce the work load and to be in charge of the



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available facilities. These officers help in maintaining, servicing, repairing, cleaning, supervise the renovation and refurbishing of primary school facilities in order to protect them (facilities) from damage and destruction.

Management of financial resources

This is another important aspect of primary school management. Primary education finance is the process of raising and spending money for the purpose of promoting teaching and learning in primary school. In line with this, Ogbannaya (2000) opined that education finance is a process by which tax revenues and other sources are derived for the establishment and operation of educational institutions, as well as the process by which these resources are allocated to the institutions for educational use. In the same vein, Jumare, (2016) described educational finance as funds generated by educational institutions through Federal, State or Local Governments grants, internally generated funds (through business, consultancy services, sales of forms and students registration fees among others) donations within and outside Nigeria and any other fund used to achieve educational goals. From this conception, Primary education finance is the process of raising funds derived from the source, in order to run the affairs of primary school. The sources raised through federal, state and local government, Non-governmental organizations such as UNESCO, USAID, UNICEF, TASSA FAO etc., PTA and SBMC, Capital Grant, Proceed from primary school activities, community effort and donations, property taxes, old boys/Alumni are to be utilized, spend judiciously by the primary school management so as to provide conducive school environment that promote teaching and learning.

Management of Primary School Curriculum

Curriculum in primary school is the bedrock and foundation of school programmes. Primary school curriculum encompasses all the curricular and extra-curricular activities that requires planning, coordination, organizing, directing, and implementing educational programmes to achieve learning objectives. However, Curriculum management is an essential component of educational institutions, incorporating the design, implementation, monitoring, and revision of educational programs. Effective curriculum management in Primary school ensures that educational goals are met, teaching methods are up-to-date, and students are equipped with the necessary skills and knowledge to succeed in their academic and professional lives. This article explores what curriculum management entails, outlines best practices, and highlights emerging trends and challenges in this field. However, in managing and planning primary school curriculum, factors such as society, learners, culture, teacher, social structure such as ethnic composition of the society as well as political organization must be considered in order to design and implement curriculum that will ease and ensure effective teaching and learning in primary school.

Problems Facing Management of Primary School

There are many problems militating against the effective management of Primary schools, for the purpose of this study, the paper considered: inadequate funding, head teachers' attitudes towards school management, lack of cooperation by teachers, inadequate facilities and politically motivated appointments (Gumbi, & Zaid, 2019)

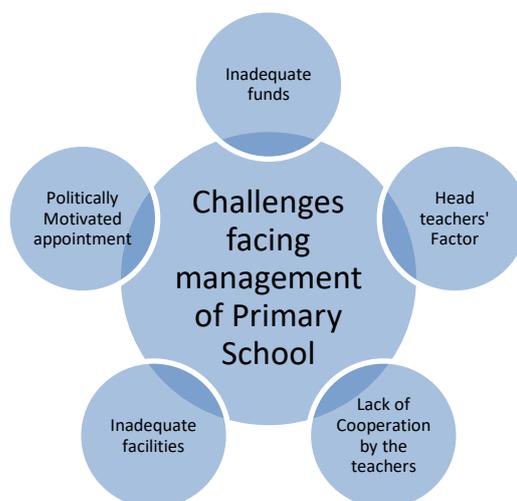


Figure 1: Challenges facing Primary School Management in Nigeria



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Inadequate Funding of Primary Schools in Nigeria

Education attracts considerable attention in public expenditure due to its position as a social service with direct economic significance. Though Teachers emoluments constitute the dominant item in the funding by the government, the school relied on other sources such as Parent teachers association levy, endowments/ donations, intervention by the foreign organizations, internal efficiency, old boys associations and community based organizations to run the affairs of school. There is need for sufficient funds that facilitates teaching and learning. Over 90% of primary schools' activities relied solely on its financial strengths without which the school will significantly be influenced by the poor infrastructure,

Head Teachers' Factor in Primary Schools

Head teachers are custodians of their respective schools. They are charged with the responsibility of overseeing the affairs and maintaining the primary school standard, However, their attitudes towards primary school management is worrisome. Majority emphasized on bestowing power and too much priority on relationship than practical know-how among their staff, which lead to assigning responsibility on the wrong person and this create chaos, misunderstanding and faction which hinder the management of primary school in several ways such as; poor communication, low morale, decreased in pupils performance, excessed workload, ineffective implementation of policies in the school.

Lack of adequate Cooperation by the Teachers

Effective primary school management requires a collective responsibility. Therefore, there is need for teachers to participate in running the affairs of their respective schools. However, many teachers show no concern in the management of primary schools. This may be as a result of Low cooperation from educational institutions and lack of commitment by teachers Furthermore, School is a system which relied on the collective efforts of teaching staff, non-teaching staff, and pupils. Head teacher alone cannot do it all he/she requires the helping hand by them.

Inadequate Facilities

Availability and adequate primary school determined the attainment of primary education goals. Effective management of Primary school facilities is among the prime responsibilities of head teachers. However, as a result of poor management, a significant number of public primary school facilities are not in good condition, some are damaged, and lead to difficulty in meeting the standard, raised safety concerns, promote inequitable access, demotivate teachers' ability to discharge his/her duties. Conversely, teachers are to be engaged in managing primary school facilities by assigning teachers with the responsibility of managing the facilities.

Politically Motivated Appointment

Nigeria adopt the democratic system of government with multiple parties and positions to contest for, therefore, every citizen primary school teacher inclusive have every right to vote and be voted for based on the right and freedom given to all. Nevertheless, the attitudes of politicians in power permeate education sector where they appoint and transfer teachers based on their selfish interest. However, politically motivated appointment across Nigerian public primary schools steered to lack of expertise, bigoted interest, nepotism and favoritism, instability and turnover lack of understanding of local contexts, needs and state of affairs, conflicting priorities such as political agenda and abuse of the system, attrition of trust.

Conclusion

In conclusion, managing primary education in Nigeria is a complex task that requires effective leadership and management skills from headteachers. As instructional leaders, headteachers play a critical role in shaping the quality of education in their schools. Their responsibilities, including instructional supervision, teacher professional development, resource management, and community engagement, are essential for creating a conducive learning environment. To improve the quality of primary education in Nigeria, head teachers must be equipped with the necessary skills, knowledge, and resources to manage their schools effectively. This can be achieved through capacity-building programmes, mentorship, and support from policymakers and stakeholders. Ultimately, the success of primary education in Nigeria depends on the ability of head teachers to lead and manage their schools effectively. By prioritizing teacher support, community engagement, and resource management, head teachers can create a positive learning environment that fosters academic achievement and social development for all students.

Recommendations

Based on the challenges raised, the following solutions were recommended



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1. Sustainable and adequate funding of primary schools should be provided by stakeholders.
2. Headteachers should discharge their duties with integrity and fairness, treating all subordinates equally.
3. Teachers should be involved in decision-making processes and the management of primary schools.
4. Relevant and adequate facilities should be provided in each primary school.
5. The government should ensure fairness and impartiality in the appointment of primary school teachers.

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Assessment of Private Costs of University Education among Final-Year Undergraduate Students in University of Benin, Edo State, Nigeria

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Abstract

This study analyzed the private costs of university education among final-year Nursing undergraduates at the University of Benin, Edo State, Nigeria. Using a descriptive survey research design, data were collected from all 310 final-year Nursing students via a validated questionnaire (PECQ-NS, $\alpha=0.84$). Data were analyzed using descriptive statistics, *t*-tests, correlation analysis, and simple linear regression at a 0.05 significance level. Findings revealed that clinical materials (Mean=3.65), off-campus accommodation (Mean=3.57), and transportation to teaching hospitals (Mean=3.48) were the most significant cost components. A moderate positive relationship existed between socio-economic background and private costs ($r=0.381$, $p<0.001$), indicating greater hardship for lower-income students. Private costs significantly affected academic experiences and completion rates, explaining 20% of the variation ($R^2=0.200$, $p<0.001$). Interestingly, male students incurred significantly higher average private costs (Mean=70.84) than female students (Mean=67.13, $p=0.006$). The study concludes that substantial private costs, influenced by socio-economic status and gender, negatively impact Nursing students' academic journey. Recommendations include subsidizing clinical materials, prioritizing support for disadvantaged students, expanding hostel spaces, and developing gender-sensitive financial policies.

Keywords: Private cost of education, Nursing students, academic engagement, gender disparities, socio-economic status,

Introduction

University education plays a vital role in shaping the intellectual and professional development of individuals, particularly in a developing nation like Nigeria. Nursing education, as a subset of university training in health sciences, is critical to the healthcare delivery system. Final-year students in medical related programs undergo intensive academic and clinical training, which prepares them to meet professional standards and contribute to public health. However, behind this essential academic pursuit lies a significant burden of private cost of education borne by students and their families. Private cost of education is a critical component for service delivery in the school system. According to Obano and Ogbeide (2021), private cost of education is an investment incurred by individual students and their family through payment of tuition fees, purchase of admission form, books, dues, among others. These costs often go beyond tuition and include expenditures on accommodation, clinical materials, transportation to health facilities, feeding, and departmental charges. As observed by Oyetakin (2018), such hidden or non-tuition expenses can sometimes outweigh official school fees, placing enormous pressure on students, particularly in professional courses like Nursing. Despite government subsidies for public university education in Nigeria, the financial reality for students remains daunting. Nursing undergraduates, especially in their final year, encounter a surge in private spending due to increased clinical responsibilities and extended hospital postings. These out-of-pocket costs can create barriers to effective academic engagement and performance. For instance, Okorie and Alabi (2021) note that the increasing financial demands of clinical materials and transportation to clinical sites affect students' focus and attendance. The burden becomes more challenging for students from low socio-economic backgrounds, who may already struggle with basic needs. This link between private cost and socio-economic status underscores the importance of analyzing financial disparities among students and their effect on academic continuity. Therefore, examining these costs is critical to understanding how they influence access, engagement, and outcomes in higher education. Further complicating the picture are gender-based and socio-cultural dimensions of private educational spending. Some empirical studies suggest that female students incur more on personal security and hygiene-related expenses, while male students often face higher costs for housing and feeding due to lifestyle and living arrangements (Eze & Ibeh, 2022). These gender variations in spending patterns can influence academic persistence differently. In the context of Nursing education—a field



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traditionally dominated by female students—it becomes essential to explore whether these differences exist and how they impact educational attainment. Additionally, as final-year Nursing students handle more complex academic and clinical responsibilities, the influence of financial burden on their ability to complete their education on time becomes a pressing concern. Understanding these dynamics can help institutions implement gender-sensitive and socio-economic inclusive support systems. Moreover, several studies have addressed private cost of education among undergraduates in Nigeria, but few have focused specifically on Nursing students or captured current data from Southern Nigeria. For instance, Nwachukwu (2019) and Nyarko and Adomako (2020) revealed a direct link between financial hardship and students' intention to drop out, with accommodation and transport costs being the most burdensome. However, their focus was primarily on general university students. There is a gap in literature focusing on professional disciplines like Nursing, which involve unique academic structures and extended fieldwork. This research therefore seeks to fill that gap by providing an in-depth analysis of the private costs of university education among final-year Nursing undergraduates at the University of Benin, Edo State, Nigeria. Several studies have explored the theme of private cost of education in Nigerian universities. Ogundele and Adegoke (2021) studied private costs among undergraduates in Delta State and found that accommodation and transport made up over 50% of total private costs, with students relying heavily on family support and side businesses. However, their study lacked focus on academic discipline or year of study. Oyetakin (2018), focusing on postgraduate students across six universities in South-West Nigeria, reported that science and engineering students had higher educational costs compared to arts, but did not explore how these costs impacted academic engagement or differed by gender.

Eze and Ibeh (2022) examined gender-specific effects of educational costs and found that females incurred higher personal costs for safety and health, which influenced class attendance. Similarly, Giwa and Sheu (2022) analyzed private costs across institutional types and concluded that while ownership and housing affected cost levels, field of study was not a major determinant. However, they did not disaggregate data for Nursing students, nor did they assess final-year student experiences. Mwangi and Githinji (2021) explored cost differences in engineering departments in Kenyan universities and highlighted that department-specific demands affect expenditure levels. Meanwhile, Nwachukwu and Etim (2019) showed that over one-third of Nigerian undergraduates considered dropping out due to unaffordable private costs. Nyarko and Adomako (2020), using Ghanaian data, confirmed similar findings, especially for students from rural areas studying in urban centers. These studies underscore the urgent need to examine financial realities among Nursing students, who often face intense practical and academic demands.

Statement of the Research Problem

Despite government efforts to subsidize tuition in public universities, students in professional courses like Nursing continue to face high private educational costs. These expenses, especially in final year, include accommodation near clinical sites, daily transportation, clinical tools, protective kits, textbooks, and data subscriptions for digital learning. Many students, particularly those from low-income families, struggle to meet these financial demands. This affects their academic engagement, attendance at clinical rotations, and, in some cases, leads to delays in graduation or dropout. Preliminary observations at the University of Benin suggest that many final-year Nursing students take on extra financial responsibilities not covered by tuition, such as purchasing medical gloves, syringes, and clinical manuals. These realities are rarely captured in institutional financial aid policies, creating gaps in support. Although some existing studies touch on educational cost burdens, few provide discipline-specific insights, especially for health-related programs like Nursing. Even fewer examine gender-based differences and the influence of socio-economic status on private educational costs in Nursing education. Therefore, this study aims to analyze the private costs of university education among final-year Nursing undergraduates at the University of Benin, considering the unique demands of their academic and clinical workload.

Objectives of the study

The primary purpose of this study is to analyze the private costs incurred by final-year Nursing undergraduate students at the University of Benin, Edo State, in the pursuit of their university education. Specifically, the study seeks to:

1. Identify the major components of private costs of education incurred by final-year Nursing undergraduate students at the University of Benin.
2. Examine the extent to which students' socio-economic backgrounds influence the level of private cost of education spending among Nursing students.



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3. Assess how private costs of education affect the academic experiences and completion prospects of final-year Nursing undergraduate students.
4. Determine whether there are significant differences in private cost of education between male and female Nursing students at the University of Benin.

Research Questions

1. What are the major components of private costs of education incurred by final-year Nursing undergraduate students at the University of Benin?
2. To what extent do socio-economic backgrounds influence the level of private costs of education spending among Nursing students?
3. How do private costs of education affect the academic experiences and completion prospects of final-year Nursing students?
4. Are there significant differences in private costs of education between male and female Nursing students at the University of Benin?

Hypotheses

- H₀₁: There is no significant relationship between students' socio-economic background and the level of private costs of education incurred in their university education.
- H₀₂: Private costs of education have no significant effect on the academic experience and completion rates of final-year Nursing students.
- H₀₃: There is no significant difference in the average private costs of university education between male and female Nursing students.

Research Methodology

This study used a descriptive survey research design to examine the private costs of university education among final-year Nursing students at the University of Benin. This method helped the researcher collect real-life data without changing or influencing anything. It was useful in understanding the types and levels of personal expenses students face, such as transportation, accommodation, and learning materials. The study focused on all 310 final-year Nursing students in the 2023/2024 academic year. Since the population was small and manageable, the researcher used all the students as the sample through a census method. This made the results more accurate and reliable because every student's experience was included. The data were collected using a questionnaire called the *Private Education Cost Questionnaire for Nursing Students (PECQ-NS)*. It included questions about students' background, personal expenses, how these costs affect their studies, how they cope, and their views on support from the school and government. Experts in education and nursing reviewed the questionnaire to make sure it was valid, and a pilot test with 30 students from another university showed it was reliable, with a Cronbach Alpha score of 0.84. Data were collected in both paper and online formats over three weeks. The collected data were analyzed using SPSS software, where averages, percentages, and standard deviations were used to answer the research questions. For testing the hypotheses, the researcher used t-tests, correlation analysis, and simple linear regression, all tested at a 0.05 significance level.

Presentation of Results

Descriptive Analysis of Research Question One

What are the major components of private costs incurred by final-year Nursing undergraduate students at the University of Benin?

Table 1: Mean and Standard Deviation of Major Private Educational Cost Components (N = 310)

Cost Components	Mean	Std. Dev.	Decision
Clinical Materials and Kits	3.65	0.59	Agreed
Accommodation (Off-Campus Housing)	3.57	0.66	Agreed
Transportation to Teaching Hospitals	3.48	0.70	Agreed
Feeding and Personal Upkeep	3.42	0.71	Agreed
Academic Levies and Charges	3.15	0.74	Agreed
Data and Internet Subscription	3.10	0.68	Agreed



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Cost Components	Mean	Std. Dev.	Decision
Nursing Council Registration Fees	3.39	0.64	Agreed
Project Printing and Binding	3.22	0.73	Agreed

Result from table 1 show that the most significant components of private cost of education among final-year Nursing students are clinical materials (Mean = 3.65), off-campus accommodation (Mean = 3.57), and transportation to teaching hospitals (Mean = 3.48). These reflect the clinical and practice-based nature of Nursing education. All listed components had means above 2.50, indicating general agreement among respondents that these costs are substantial. Financial planning and institutional support should prioritize these areas to reduce student financial stress.

Hypothesis One: There is no significant relationship between students' socio-economic background and the level of private costs incurred in their university education.

Table 2: Pearson Correlation Between Socio-Economic Background and Private Educational Costs

Variables	N	r-value	Sig. (2-tailed)	Decision
Socio-economic background	310	0.381	0.000	Reject H_{01}
Private cost of Education				Significant

Result from table 2 of the Pearson correlation value of 0.381 indicated a moderate positive relationship between students' socio-economic background and the level of private cost of education incurred. The p-value of 0.000 (less than 0.05) shows this relationship is statistically significant. This suggests that students from lower-income households bear greater hardship from private cost of education, which may affect their academic participation, especially during clinical postings that demand extra spending on transport and materials.

Hypothesis Two: Private costs of education have no significant effect on the academic experience and completion rates of final-year Nursing students.

Table 3: Simple Linear Regression – Effect of Private Educational Costs on Academic Experience and Completion

Statistic / Component	Value
R	0.447
R Square	0.200
Adjusted R Square	0.197
Std. Error of the Estimate	0.496
F-value	75.13
Sig. (p-value)	0.000
Decision	Reject H_{02}

The regression results from table 3 revealed a significant positive relationship between private educational costs and students' academic experience/completion. The R^2 value of 0.200 suggests that 20% of the variation in academic experience is explained by private costs. The p-value (0.000) confirms that this is statistically significant. This indicates that higher private costs negatively affect students' academic progress, often leading to missed classes, delayed assignments, or extended graduation due to financial hardship.

Hypothesis Three: There is no significant difference in the average private costs of university education between male and female Nursing students.



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Table 4: Independent Samples t-Test Showing Gender Differences in Private Educational Costs

Gender	N	Mean Cost	Std. Dev.	t-value	df	Sig. (2-tailed)	Decision
Male	72	70.84	11.94	2.786	308	0.006	Reject H ₀₃
Female	238	67.13	10.45				Significant

The results from table 4 showed a statistically significant difference in private educational costs between male and female Nursing students. Male students had a higher average cost (Mean = 70.84) than females (Mean = 67.13), and the p-value = 0.006 shows this difference is significant. This may be due to gendered patterns of accommodation, lifestyle, or family responsibilities. However, it is also possible that more male students live independently or take on extra financial responsibilities related to clinical rotations or transportation.

Discussion of Findings

The findings from this study provide a comprehensive view of the private cost of education borne by final-year Nursing undergraduate students at the University of Benin. The descriptive analysis showed that major cost components include clinical materials, accommodation, transportation to clinical sites, and feeding. These costs reflect the practical and field-based nature of Nursing education, where students are required to participate in hospital rotations, community postings, and laboratory activities. The high mean for clinical kits and transport expenses supports earlier findings by Okorie and Alabi (2021), who emphasized that Nursing students incur significant extra-budgetary expenses due to clinical practicum demands not covered by institutional fees. The result of the first hypothesis revealed a statistically significant relationship between students' socio-economic backgrounds and the level of private costs of education incurred. Students from low-income families reported a higher level of financial strain. This aligns with Eze & Oladele (2022), who reported that students from disadvantaged socio-economic backgrounds often struggle to keep up with financial demands in healthcare-based courses, leading to emotional stress and reduced academic performance.

The regression analysis in Hypothesis Two revealed that private cost of education significantly affects the academic experience and completion rates of Nursing students. This implies that as educational expenses increase, students are more likely to experience difficulties such as late fee payments, absenteeism from clinical postings, or even delayed graduation. This is consistent with Gyang, Ibrahim, and Okechukwu (2020), who found that financial constraints among health sciences students led to low attendance and reduced academic output during final year programs. Hypothesis Three tested for gender differences in private cost of education and found that male students incurred significantly higher costs than female students. This is a reversal of the common assumption that female students usually have higher personal upkeep expenses. A possible explanation may lie in male students' higher likelihood of independent accommodation, part-time job-related transport costs, or family responsibilities. This trend supports findings by Adebayo and Bello (2021), who noted that male Nursing students in urban universities tend to rent apartments further from campus due to accommodation shortages, leading to increased financial burdens.

Conclusion

The study concludes that private cost of education significantly impacts the academic experience and persistence of final-year Nursing students at the University of Benin. Students incur substantial personal expenses, especially in clinical-related materials, accommodation, and transportation. Socio-economic background strongly influences the level of financial stress, with students from poorer households facing greater challenges. In addition, private costs have measurable effects on students' ability to stay focused and complete their academic programs on time. Gender also plays a role, with male students experiencing higher average private costs than their female counterparts. These insights underscore the need for targeted financial interventions to support student success and equity in Nursing education.

Recommendations

Based on the findings, the following recommendations are made:

1. The University of Benin and relevant health agencies should establish dedicated support schemes to subsidize clinical materials and transportation to teaching hospitals. This would reduce the financial burden specific to practical Nursing education.



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2. Socio-economically disadvantaged students should be prioritized for bursaries and flexible payment options. These measures would improve access, retention, and completion among financially vulnerable students.
3. Since off-campus housing is a major cost driver, university management should prioritize hostel spaces for final-year students to reduce high rent and transport expenses, especially during clinical postings.
4. Given that male students were found to have higher private costs, financial support policies should not only target female students but also consider the specific financial patterns of male students, such as independent living and job-related mobility.
5. The university should regularly track and review private cost trends among students, particularly in practice-based programs like Nursing, to ensure that policy responses are timely, data-driven, and student-focused.

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Effects of Flipped Classroom Strategy on ... Yusuf, F. M. & Ibrahim, Z. I. (2025)

Effect of Flipped Classroom Strategy on Self-Efficacy in Chemistry Learning among Secondary School Students in Gumel Education Zone, Jigawa State, Nigeria

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Abstract

This study examined the effect of the flipped classroom strategy on self-efficacy among secondary school chemistry students in Nigeria, focusing on gender differences. A quasi-experimental design involved 90 Senior Secondary School II students (32 males, 58 females) from two schools in Jigawa State. The experimental group (n = 48) received flipped classroom instruction using offline video lessons on oxidation-reduction reactions, while the control group (n = 42) received conventional instruction. Data were collected using a validated 20-item Self-Efficacy Questionnaire (Cronbach's $\alpha = 0.99$) and analyzed using ANOVA. Results showed that students taught through the flipped strategy had significantly higher self-efficacy ($M = 87.71$) than those taught conventionally ($M = 32.36$), $F(1,88) = 7629.59$, $p < 0.001$, with no significant gender difference ($p = 0.209$). The study concludes that the flipped classroom significantly improves chemistry self-efficacy, offering an inclusive approach for science education in resource-limited settings.

Keywords: flipped classroom, self-efficacy, chemistry

Introduction

Education in the twenty-first century increasingly emphasizes learner-centered teaching strategies that not only transmit knowledge but also foster confidence, autonomy, and higher-order thinking skills among students. In science education, particularly chemistry, learners are often confronted with abstract concepts, symbolic representations, and complex problem-solving tasks that challenge their cognitive and affective capacities. As a result, many students develop anxiety and low confidence when engaging with chemical concepts (Özgür, 2021). To address these challenges, scholars and educators have turned attention toward approaches that actively engage learners and strengthen their belief in their capabilities. Self-efficacy, as conceptualized by Bandura (1977), refers to individuals' beliefs in their abilities to organize and execute actions required to attain specific goals. It represents a central construct in social cognitive theory, influencing motivation, persistence, and academic success. In the context of chemistry learning, students with high self-efficacy are more likely to participate actively, persevere in difficult tasks, and achieve higher learning outcomes than their low-efficacy counterparts (Gibbons & Raker, 2018). Conversely, those with diminished self-efficacy tend to disengage or avoid cognitively demanding activities, which contributes to persistent underachievement in science subjects (Badriah, 2025). Empirical studies in developed contexts have consistently demonstrated that student-centered strategies, including flipped classroom instruction, enhance learners' self-efficacy and achievement by providing greater opportunities for mastery experiences, social interaction, and self-paced learning (Sun et al., 2023; Han & Hamzah, 2024). The flipped classroom model reverses the traditional instructional sequence by introducing content outside class often through videos, readings, or multimedia while dedicating class time to active learning, collaboration, and teacher-guided practice. This design enables learners to construct knowledge at their own pace and fosters autonomy and self-reflection (Na et al., 2024). However, in Nigeria and other developing countries, chemistry instruction remains predominantly teacher-centered, characterized by rote memorization, limited practical activities, and minimal student participation (Odedokun et al., 2023). The consequences of this approach are evident in students' poor performance and negative attitudes toward chemistry. Data from the National Examination Council (2024) in Jigawa State indicated a failure rate of approximately 69.8% in chemistry, suggesting that traditional pedagogical models are insufficient for developing conceptual understanding and affective skills such as self-efficacy. Additionally, existing research in Nigeria has focused primarily on the relationship between self-efficacy and achievement rather than investigating pedagogical interventions that can systematically enhance students' confidence in learning chemistry.



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Theoretically, this study draws from Bandura's (1977) Self-Efficacy Theory, which posits that individuals' performance and motivation are influenced by their belief in their ability to succeed. The flipped classroom provides mastery experiences, vicarious learning, and positive feedback all critical sources of self-efficacy development. Conceptually, this study assumes that when learners are exposed to pre-class video content and in-class interactive activities, their sense of competence and confidence in handling chemistry tasks increases. Empirically, previous findings support this assertion, demonstrating significant gains in students' self-efficacy following the adoption of flipped classroom strategies (Sun et al., 2023; Bardach et al., 2024). Nevertheless, there is limited evidence within the Nigerian secondary school context, particularly in Jigawa State, to validate these outcomes. In summary, the review of literature reveals a consistent pattern that while the flipped classroom model has been associated with improved self-efficacy in diverse educational settings, its application and impact in Nigerian secondary chemistry classrooms remain underexplored. Furthermore, the lack of context-specific studies examining gender-based differences in chemistry self-efficacy under flipped classroom instruction underscores the need for empirical investigation.

Statement of the Research Problem

Despite the global evidence supporting flipped classroom instruction as a means of enhancing students' confidence and learning outcomes, Nigerian secondary school chemistry classes remain dominated by teacher-centered practices that limit active engagement and self-belief. Many students perceive chemistry as difficult, leading to low self-efficacy, poor motivation, and persistently low achievement levels. While studies have established correlations between self-efficacy and academic achievement, few have examined how flipped classroom strategies influence students' self-efficacy in chemistry learning within the Nigerian context, especially in Gumel Education Zone of Jigawa State. This study therefore seeks to fill this gap by empirically investigating the effect of flipped classroom strategy on students' self-efficacy in chemistry learning, with particular attention to gender differences in outcomes.

Objectives of the Study

The objectives of the study were to determine:

1. The difference in self-efficacy scores between students taught chemistry using the flipped classroom strategy and those taught using conventional methods.
2. The difference in self-efficacy scores between male and female students taught chemistry using the flipped classroom strategy.

Research Questions

1. What is the effect of flipped classroom strategy on students' self-efficacy in chemistry learning in Gumel Education Zone?
2. What is the difference in self-efficacy scores between male and female students taught chemistry using flipped classroom strategy?

Hypothesis

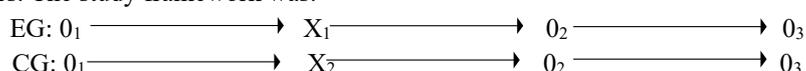
H₀₁: There is no significant difference in self-efficacy scores between students taught chemistry using flipped classroom and conventional strategies.

H₀₂: There is no significant difference in self-efficacy scores between male and female students taught chemistry using flipped classroom strategy.

Methodology

Research Design

This study employed a quasi-experimental, non-randomized control group design. The choice of design was appropriate because it allowed systematic comparison between two instructional strategies that is the flipped classroom and conventional lecture while maintaining the natural classroom structure without random reassignment of participants. The design enabled the researcher to determine the effect of flipped classroom strategy on students' self-efficacy in chemistry learning and to examine possible gender differences. The study framework was:



Where O_1 represents pre-intervention measures, X_1 represents flipped classroom treatment, X_2 represents conventional instruction, and O_2 represents post-intervention measures.



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Population, Sample and Sampling Technique

The population of the study comprised all Senior Secondary School II (SS II) chemistry students in public secondary schools within Gumel Education Zone of Jigawa State, Nigeria. Two mixed-gender public secondary schools with similar student demographics, resources, and academic backgrounds were purposively selected to ensure comparability and minimize bias. A total of 90 students participated in the study, consisting of 32 males and 58 females. The experimental group (n = 48) received flipped classroom instruction, while the control group (n = 42) was taught using the conventional lecture method.

Self-Efficacy Questionnaire (Se-Q):

The Self-Efficacy Questionnaire (Se-Q) was subjected to both face and content validation by a panel of experts to ensure its relevance and alignment with the study objectives. Feedback from these experts was incorporated to refine the items for clarity, construct coverage, and suitability before administration. It was a modified 20-item instrument based on Bulfone et al. (2020), adapted for chemistry learning contexts. Items assessed students' confidence in various chemistry learning activities using a 5-point Likert scale (1 = Not confident, 5 = Very confident). The instrument demonstrated high internal consistency (Cronbach's $\alpha = 0.99$).

Data Collection and Analysis

Approval was obtained from the participating schools, and consent letters were given to students for permission of use of gadget at home to which they were briefed on the instructional procedures before implementation. The study lasted for six weeks during which the experimental group was taught using the flipped classroom approach. This involved students watching short offline video lessons of 5–15 minutes before class and participating in collaborative problem-solving, group discussions, and guided inquiry activities during class. The control group, on the other hand, was taught the same chemistry content using the conventional lecture method, which focused mainly on teacher explanations, note-taking, and limited student interaction. At the end of the instructional period, the Self-Efficacy Questionnaire (Se-Q) was administered to both groups to collect post-intervention data on students' chemistry self-efficacy. Self-efficacy data were collected post-intervention using the Se-Q instrument. Data were analyzed using SPSS, employing descriptive statistics (means, standard deviations) and inferential statistics (ANOVA) to test hypotheses at $\alpha = 0.05$ significance level.

Presentation of Results

Self-Efficacy Differences

1. What is the effect of flipped classroom strategy on students' self-efficacy in chemistry learning in Gumel Education Zone?

Table 1: Mean and Standard Deviation of Self-Efficacy Scores by Group

Group	N	M	SD	Mean Difference
Experimental	48	87.71	2.63	55.35
Control	42	32.36	3.37	

Source: Field work 2025, *Note:* M = Mean; SD = Standard Deviation.

The descriptive results revealed a substantial difference in self-efficacy scores between the experimental and control groups, with students in the flipped classroom group (M = 87.71, SD = 2.63) outperforming those in the conventional group (M = 32.36, SD = 3.37).

H₀₁: There is no significant difference in self-efficacy scores between students taught chemistry using flipped classroom and conventional strategies

Table 2: ANOVA Summary for the Effect of Flipped Classroom on Self-Efficacy



Source	Type III Sum of Squares	df	Mean Square	F	Sig. (p)
Corrected Model	68,628.096 ^a	1	68,628.096	7,629.59	.000
Intercept	322,912.096	1	322,912.096	35,899.087	.000
Group	68,628.096	1	68,628.096	7,629.587	.000
Error	791.560	88	8.995		
Total	414,017.000	90			
Corrected Total	69,419.656	89			

Source: Field work 2025

ANOVA results above further indicated a highly significant difference between groups, $F(1, 88) = 7,629.59, p < .001$, with an exceptionally large effect size ($\eta^2 = .989$). This finding shows that the flipped classroom strategy had a profound positive impact on students' chemistry self-efficacy compared to traditional instruction.

Gender Differences

What is the difference in self-efficacy scores between male and female students taught chemistry using flipped classroom strategy?

Table 3 : Mean and Standard Deviation of Self-Efficacy Scores by Gender (Experimental Group)

Gender	N	M	SD	Mean Difference
Male	17	87.06	3.19	-1.01
Female	31	88.06	2.25	

Source: Field work 2025

Although female students ($M = 88.06, SD = 2.25$) recorded slightly higher self-efficacy scores than their male counterparts ($M = 87.06, SD = 3.19$).

H₀₂: There is no significant difference in self-efficacy scores between male and female students taught chemistry using flipped classroom strategy.

Table 4 ANOVA Summary for Gender Differences in Self-Efficacy (Experimental Group)

Source	Type III Sum of Squares	df	Mean Square	F	Sig. (p)
Corrected Model	2.698 ^a	1	2.698	1.623	.209
Intercept	350,222.344	1	350,222.344	210,788.5	.000
Gender	2.698	1	2.698	1.623	.209
Error	76.478	46	1.663		
Total	354,214.000	48			
Corrected Total	79.176	47			



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Source: Field work 2025

ANOVA results shows that the difference between gender was not statistically significant, $F(1, 46) = 1.623, p = 0.209$. This result suggests that the flipped classroom strategy was equally effective for both genders in improving self-efficacy in chemistry learning.

Discussion of Findings

Impact of Flipped Classroom on Self-Efficacy

This finding strongly supports the hypothesis that flipped classroom instruction significantly enhances students' self-efficacy in their chemistry learning abilities. Students taught through the flipped classroom strategy achieved higher self-efficacy scores than those taught through conventional methods. Several mechanisms likely contributed to this enhancement. Mastery experiences were provided through the pre-class video component, which allowed students to learn at their own pace, reducing anxiety and enabling early success before class. Vicarious learning occurred during in-class collaborative activities, where students observed and learned from peers' problem-solving strategies. The flipped format also reduced performance anxiety, as students could pause, replay, and reflect on video lessons without fear of public mistakes. Active engagement during class through problem-solving and discussions created opportunities for students to demonstrate competence and build confidence. These findings align with Bandura's self-efficacy theory and support previous research that shows flipped classrooms improve affective learning outcomes (Sun et al., 2023; Han & Hamzah, 2024).

Gender Equity in Self-Efficacy Development

The lack of significant gender differences in self-efficacy development within the experimental group suggests that flipped classroom instruction may offer an equitable approach to chemistry education. This finding is important in the Nigerian context, where gender disparities in science achievement often disadvantage female students. The slightly higher, though non-significant, self-efficacy scores among females may reflect the collaborative and discussion-based nature of flipped classroom activities, which some research suggests may align with female learning preferences. However, the minimal difference indicates that both male and female students benefited from the intervention. This result agrees with Bardach et al. (2024) and Na et al. (2024), who found that flipped classroom instruction provides inclusive learning environments that reduce gender gaps in learning outcomes. Therefore, flipped classroom instruction supports gender equity and promotes equal participation and confidence among learners.

Educational and Theoretical Implications

The findings of this study have several implications for teaching, learning, and educational theory. Chemistry teachers should adopt flipped classroom methods to build students' confidence and improve achievement. The high increase in self-efficacy shows that flipped learning supports affective needs that traditional teaching often ignores. Teacher professional development programs should train educators to prepare video lessons and lead active class discussions. The success of offline video lessons also shows that flipped classrooms can be effective even in schools with limited resources. The exceptionally large effect size observed in this study demonstrates the strong link between instructional design and students' self-belief, supporting Bandura's (1977) view that learning environments influence self-efficacy development. This study also extends flipped classroom research by emphasizing affective outcomes, showing that this approach not only improves achievement but also promotes confidence, motivation, and equity in science education.

Conclusion

This study provides compelling evidence that flipped classroom instruction significantly enhances chemistry self-efficacy among secondary school students. The gender-neutral effects suggest that flipped classroom instruction offers an equitable approach to chemistry education, potentially addressing some of the motivational barriers that traditionally disadvantage students in science learning. For educational systems seeking to improve both academic and affective outcomes in chemistry education, these findings strongly support investment in flipped classroom implementation and teacher professional development. The success of offline video distribution in this resource-constrained environment demonstrates that innovative pedagogical approaches need not require extensive technological infrastructure. This accessibility makes flipped classroom instruction a viable strategy for improving chemistry education across diverse educational contexts. As chemistry education continues to grapple with low



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achievement and negative student attitudes, the profound self-efficacy benefits demonstrated in this study suggest that flipped classroom instruction deserves serious consideration as a transformative pedagogical approach.

Recommendations

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

1. Chemistry teachers should integrate flipped classroom strategies into their instructional practices to enhance students' self-efficacy and achievement in chemistry learning.
2. Teacher education institutions and ministries of education should organize workshops and professional development programs to train teachers on developing and delivering flipped classroom lessons effectively.
3. Educational authorities should provide schools with basic resources for offline video production and sharing to ensure equitable access and sustainability of the flipped classroom approach.

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Comparative Relationships Between Personality Traits and Self-Efficacy on Social Adjustment among Secondary School Students in Delta State, Nigeria

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Abstract

This study examined the relationship between personality traits (extraversion, neuroticism, conscientiousness) and social adjustment among secondary school students in Delta Central Senatorial District of Delta State. The study was necessitated by the increasing concern among parents, teachers, counsellors, and psychologists about how students adapt socially in school environments. The population comprised all Senior Secondary School One (SS1) and Senior Secondary School Two (SS2) students in the Senatorial District, and data were collected using three instruments: the Personality Traits Assessment Questionnaire (PTAQ), the General Self-Efficacy Scale (GSES), and the Social Adjustment Questionnaire (SAQ). The findings revealed that extraversion personality trait had a significant positive relationship with students' social adjustment, showing that students who were more outgoing and sociable adjusted better socially. Similarly, self-efficacy demonstrated a strong positive relationship with social adjustment, particularly through mastery experiences and vicarious experiences, which were found to be more influential than verbal persuasion. Finally, the combined analysis showed that personality traits and self-efficacy jointly had a strong and significant relationship with students' social adjustment, accounting for over 70% of the variation in adjustment levels. Based on these findings, the study concluded that both personality traits and self-efficacy are critical factors in shaping how students relate with peers and adapt to school life. It was recommended that schools should implement structured social engagement programs, such as leadership training, debate clubs, and peer mentorship, to strengthen students' social adjustment. Counsellors and teachers should also design interventions that build students' self-efficacy through mastery and vicarious experiences. Furthermore, educational policymakers should integrate personality development and self-efficacy enhancement strategies into school curricula to promote holistic student adjustment.

Keywords: Personality Traits, Self-efficacy and Social Adjustment

Introduction

Social adjustment is defined by Sanja et al (2020) as the ability of students to navigate social relationships, adapt to peer norms, and cope with environmental demands. It plays a crucial role in both their academic success and overall well-being. Social adjustment of students is an issue of great concern to many, especially parents, teachers, counsellors and psychologists. Hence, the students, especially those in the secondary school system of education are faced with social problems with attendant academic problems that seem to have become part and parcel of the schools. The condition where students are unable to adjust socially in the school has become a worrisome phenomenon because of its tendency to affect their academic outputs and the likelihood that they may resort to anti-social behaviours like drug use and abuse, robbery, alcoholism, rape among others as a coping mechanism. Research on personality traits indicates that certain characteristics can facilitate or hinder social adjustment. Self-efficacy, or the confidence in one's own abilities, also significantly impacts on social adjustment. Adolescents with high self-efficacy tend to approach social situations with a positive outlook, actively engaging with peers and managing challenges effectively, which strengthens their social skills and adaptability (Zhang & Goodson, 2021). Conversely, those with low self-efficacy may avoid social interactions and experience heightened social anxiety, leading to poorer social adjustment outcomes.

From the foregoing, it could be understood that traits are characteristic behaviours that consistently differentiates one individual from another. They are stable predisposition to act or behave in a consistent manner (Nairae et al., 2014). So, personality characteristics and self-efficacy of students that are socially adjusted are likely different from those found among individuals that are not socially adjusted. Studies from Christensen (2022); Maurice, et al., (2016); Sanja, et al.,



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(2020) and Thomas, et al., (2017), have investigated the contribution of personality traits and self-efficacy to social adjustment, academic achievement and life satisfaction. This study, in response to these needs, therefore investigates personality traits and self-efficacy as predictors of social adjustment among secondary school students in Delta Central Senatorial District of Delta State, Nigeria.

Statement of the Problem

A growing body of evidence indicates that many students struggle with social adjustment, often leading to challenges such as social isolation, anxiety, and reduced self-confidence. The difficulties faced by students can adversely affect their academic performance and contribute to a decline in their overall mental health. Socially maladjusted students find it challenging to collaborate with peers, get involve in group activities, or obtaining support from teachers. Recognizing the importance of social adjustment, various stakeholders have taken steps to support students in the area. Schools have introduced social emotional learning programs to enhance students' social skills, emotional regulation, and peer relationships. This research aims to provide a deeper understanding of these individual factors, offering insight that could inform targeted interventions for enhancing social adjustment based on personality traits and self-efficacy.

Aim and Objectives of the Study

The aim of this study is to investigate personality traits and self-efficacy as predictors of social adjustment among secondary school students in Delta Central Senatorial District of Delta State. The specific objectives are to:

1. Determine the level of influence of personality trait on social adjustment among secondary school students in Delta Central Senatorial District of Delta State.
2. Determine the level of influence self-efficacy on social adjustment among secondary school students in Delta Central Senatorial District of Delta State.
3. Ascertain the relationship between personality trait, self-efficacy and social adjustment among secondary school students in Delta Central Senatorial District of Delta State.

Research Questions

The following research questions will guide the study:

1. What is the relationship between personality trait and social adjustment among secondary school students in Delta Central Senatorial District of Delta State?
2. What is the relationship between self-efficacy and social adjustment among secondary school students in Delta Central Senatorial District of Delta State?
3. What is the relationship between personality trait, self-efficacy and social adjustment among secondary school students in Delta Central Senatorial District of Delta State?

Research Hypotheses

The following null hypotheses will be testable at 0.05 level of significance and will guide the study:

- H₀₁:** There is no significant relationship between personality traits and social adjustment among secondary school students in Delta Central Senatorial District of Delta State.
- H₀₂:** There is no significant relationship between self-efficacy and social adjustment among secondary school students in Delta Central Senatorial District of Delta State.
- H₀₃:** There is no significant relationship between personality traits, self-efficacy and social adjustment among secondary school students in Delta Central Senatorial District of Delta State.

Review of Related Literature

Conceptual Framework

The conceptual framework in this study illustrates the relationship between personality traits, self-efficacy, and social adjustment among secondary school students. The framework is structured with personality traits and self-efficacy as the predictor variables, while social adjustment serves as the criterion variable. These variables interact to influence social



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adjustment, which refers to a student's ability to integrate effectively into social environments, adapt to peer relationships, and manage interpersonal interactions. The framework is grounded in the idea that students' personality traits play a significant role in shaping their social behaviours and emotional responses. For instance, extraverted students are generally more socially active and may find it easier to build relationships, while neurotic students might struggle with anxiety and social withdrawal, affecting their ability to adjust socially and conscientious students are associated with higher productivity in their various occupational areas and with greater longevity. Similarly, self-efficacy contributes to social adjustment by reinforcing confidence in one's ability to interact with others. By positioning personality traits and self-efficacy as key predictors of social adjustment, the framework provides a foundation for understanding how individual differences contribute to students' capacity to integrate into school environments.

Concept of Personality Traits

Phares and Chaplin (2019) define personality as that pattern of characteristic thoughts, feelings and behaviours that distinguishes one person from another and persists overtime and situations. Personality has to do with individual differences among people in behaviour patterns, cognition and emotion. Personality also refers to the patterns of thoughts, feelings, social adjustments and behaviours consistently exhibited overtime that strongly influence one's expectations, perception, values and attitudes. It is perhaps in this perspective that Weiten et al. (2019), view personality traits as an individual's unique constellation of consistent behavioural traits. Personality traits are attributes or qualities that account for the way individuals react to stimuli in their environment. Traits are obvious consistencies in behaviour. They cannot be seen with the individuals' eyes but could be identified from ones conducts and as a result of one's behaviour. Cattell (2019) developed a 16-item personality questionnaire to appear in an opposing pole axis which he used in rating individual personality, for instance, reserved-outgoing, reactive-emotional stability, submissive-dominant, timid-socially bold, tough-minded shrewd, self-assured apprehensive, relaxed-tensed, and so on. Eysenck (2019) also found that an individual's personality is determined to a large extent by the person's genes. This accounts for inherited differences in their physiological functioning.

Concept of Self-Efficacy

The words "Self" and "Efficacy" are concerned mainly with the question of "Who am I?" and "What am I good at?". Understanding this important aspect of self and people's beliefs about their personal capabilities and how these beliefs influence what they try to accomplish, and how they react to successes and hindrances along the way gives vivid description of what self-efficacy is all about. Dogan (2015) views self-efficacy as the belief in one's ability to succeed especially within specific situations or accomplishment of certain tasks. Self-efficacy is therefore another factor that is likely to be considered as a variable defining and determining academic performance. Burgoon, et al., (2022) view self-efficacy as a construct linked to motivational aspects, aspects of persistence and aspects of how much effort individuals put in their actions. Self-efficacy also refers to an individual's perceived capability to perform in a way that creates control over events affecting his/her life. Self-efficacy in the context of this study refers to the students' beliefs about their ability that become instrumental to the goals they pursue and to the control they are able to exercise over their environments.

Social Adjustment

Social adjustment according to Rienties, et al., (2021), is how an individual maintains a congruent relationship with other people. Social adjustment is therefore an innate psychological disposition of an individual to cope with standards, values and needs of a society in order to be acceptable. Thus, social adjustment entails accepting social activities or participation in social activities. Zhang and Goodson (2021), declare that social adjustment involves simply understanding others. Social adjustment entails an individual maintaining a congruent relationship with other people. For instance, students who are able to maintain a congruent relationship with people around are said to be socially adjusted, while those who could not may find it hard getting adjusted. The ability for one to cope with standards, values and need of a society, and people in the environment hinges on social adjustment but the lack of it could spell doom in the achievement of success in life generally. For instance, students in secondary schools tend to have fluctuating social adjustment which could make them unable to adapt to a given social environment. Consequently, in the context of this study, social adjustment refers to the ability of students to function in their immediate environment and participate in social activities, become adjusted to the school, in such a way that they can build and maintain reasonable relationships, and accommodate people around oneself irrespective of the situation that one finds oneself.



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Personality Traits as Predictors of Social Adjustment

Personality traits influence and predict social relationships, as well as social adjustment. According to Asendorpf and Wilpers (2018), personality traits of extraversion, agreeableness and conscientiousness influenced the number and quality of participants' social relationships. For instance, Bardi and Ryff (2017), declare that neuroticism is linked to poorer social adjustment and extraversion is related to positive social adjustment. Similarly, Berry et al. (2020) found that extraversion scores predicted the extent to which participants felt close to their friends, and individuals with high neuroticism scores always had conflicts in their social relationships. Additionally, researchers such as Lounsbury et al. (2014), have found that the agreeableness, conscientiousness and extraversion were significantly negatively correlated with expressed intention to withdraw from college. While the majority of previous life-events research has proposed a direct causal link between life-events and an individual's adjustment, recent research has begun to look at personality factors whose influence on the prevalence of life-events may contribute to an individual's wellbeing. Because personality development theoretically precedes negative outcomes that may occur later in life, it is important to look at the possibility that an external force such as the interaction between negative life events and personality may influence the adjustment outcomes.

Self-Efficacy as Predictor of Social Adjustment

In the educational context, the importance of students' self-efficacy beliefs has often been investigated and used as a predictor of their social adjustment. According to Bandura (1977), self-efficacy is the confidence a person has in his/her own ability to solve problems and accomplish tasks. Bandura argues that self-efficacy is concerned with judgments of how well one can execute courses of action required to deal with prospective situations. Ogoemeka (2021) opines that student with high level of self-efficacy are socially adjusted in the school. This is because self-confident students are more persistent, even in the face of difficulties. Self-efficacy is influenced by five key sources: mastery experiences, vicarious experiences, verbal persuasion, emotional/physiological states and self-reflective process. Each of these sources contributes to an individual's belief in their ability to handle social situations, which in turn affects their social adjustment. Taken together, these five sources of self-efficacy contribute to an individual's overall belief in their social capabilities, which strongly predicts their ability to adjust socially. High self-efficacy enables individuals to approach social situations with confidence, resilience, and effective coping strategies. This results in better social integration, more positive relationships, and greater emotional well-being. Conversely, individuals with low social self-efficacy may struggle with social withdrawal, poor relationship-building, and heightened anxiety in social situations, which impede their social adjustment.

Students' Social Adjustment in Schools

Students' social adjustment in the school environment involves making a successful transition to a new learning and social environment that can be characterized as taking advantage of available resources and may require letting go of past attitudes, values, and behaviours and learning new ones in their place. School education is filled with social, academic, and emotional stressors. In spite of that, few students find ways to cope with adversity and achieve their academic goals. At the same time, a large portion of students seem to be significantly less successful at attaining their educational goals because they are not socially adjusted (Gajdzik, 2015). The behaviour of young people in school is a crucial element in their overall social adjustment. Not only is school the context in which many youths spend most of their day, it also is where they engage in the important activities of gaining academic knowledge and developing formative relationships with peers and adults. Furthermore, when students are socially adjusted, they would exhibit socially acceptable behaviours but when the reverse is the case, students' inappropriate behaviour at school can distract both the students themselves and those around them from their learning tasks. The latter situation has many negative implications such as dropping out of school among others thereby putting them in an inferior position on the job market. Although self-efficacy has been widely studied in academic performance and career development, there is insufficient research on its role in social adjustment within the secondary school context, particularly in the Nigerian educational system. Most studies have either treated personality traits and self-efficacy as independent constructs or focused on their influence in professional and academic settings, neglecting their combined effect on social integration and peer relationships among adolescents. This study aims to provide context-specific insights that reflect the unique socio-cultural and educational dynamics of secondary school students in Delta Central Senatorial District.

Research Methodology

Research Design



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The research design for this study was descriptive research design and correlational design. The correlation design tries to gather data concerning the degree and direction of relationship between independent and dependent variables. According to Nwankwo (2023), correlational research design was used in making prediction in research works. The design normally indicates the direction and magnitude of the relationship. Thus, the use of this correlation research design is justified on the basis that this study sought to investigate personality traits and self-efficacy predictors of social adjustment of secondary school students in Delta State. The study population comprises all SSI and SS2 senior secondary school students from the eight local Government Areas in the Delta Central Senatorial District of Delta State. From the eight local government areas, simple random sampling technique will be employed to pick 4 local government areas using balloting system. The sample size for the study will consist of 325 SS1 and SS2 students from randomly selected 4 schools from each of the 4 Local Government Areas to make up a sample size of 16 secondary schools for the study. The sample size was determined using the Taro-Yamene formula. Three research instruments were used in collecting data from the students for the study, namely; Personality Traits Assessment Questionnaire (PTAQ), developed from International Personality Item Pool (IPIP), General Self-Efficacy Scale (GSES) developed by Schwarzer and Jerusalem, and Social Adjustment Questionnaire (SAQ), developed by Weisman and Paykel (Schwarzer & Jerusalem, 2015). The research instrument were face and content validated by experts in the relevant fields. The research instrument was subjected to internal consistency reliability test using Cronbach Alpha, The reliability coefficient of Personality Trait Questionnaire (PTQ), Self-Efficacy Questionnaire (SQ) and Social Adjustment Questionnaire (SAQ). This researcher however established the internal consistency reliability of the instruments among secondary school students using Cronbach Alpha statistics. Copies of the questionnaire were distributed to 20 SS1 and 2 students from schools outside the study area. The administration of the instruments was done through direct delivery approach. By this method, copies of the questionnaires were distributed personally to the respondents by the researcher with the help of 6 research assistants. Copies of the instruments were collated, scored and then sent for analysis. Research questions were answered using Pearson Product Moment Correlation Coefficient (PPMCC). The null hypotheses were tested using multiple regression analysis. The decision criteria for research questions where: $r\text{-calculated} > \text{than } r\text{-critical}$, reject null hypothesis and where $r\text{-calculated} < \text{than } r\text{-critical}$ do not reject the null hypothesis. Also, for the hypotheses, where significant value (P) is less than 0.05, reject null hypothesis, however, when the value (P) is greater than 0.05, accept the null hypotheses.

Presentation of Result

The data collected from the respondents in the study were presented and analyzed in the following tables below.

Research Question 1

What is the relationship between personality trait and social adjustment among secondary school students in Delta Central Senatorial District of Delta State?

Table 1: PPMC Analysis of the Relationship between Personality Trait and Social Adjustment among Secondary School Students in Delta Central Senatorial District ($n = 325$)

Variables	Mean	Std. Deviation	r	R ²	Adjusted R ²	Std. Error of Estimate	Decision
Extraversion Personality Trait	30.37	5.58	.614	.377	.375	3.63	Significant
Social Adjustment	36.28	4.59					

a. Predictor: Personality Trait; **b. Dependent Variable:** Social Adjustment

The table above reveals the relationship between personality trait and social adjustment among secondary school students in Delta Central Senatorial District of Delta State. The result of the Pearson Product Moment Correlation (PPMC) analysis revealed that there was a moderate positive relationship between extraversion personality trait and social adjustment among the students ($r = .614, n = 325, p < .05$). The coefficient of determination ($R^2 = .377$) indicates that 37.7% of the variance observed in students' social adjustment can be explained by their extraversion personality trait, while the adjusted R^2 (.375) confirms the stability of the model. The mean score of students on personality trait was 30.37 with a standard deviation of 5.58, which is indicative of a moderate level, while their mean score on social adjustment was 36.28 with a standard deviation of 4.59, suggesting a high level of adjustment. This implies that students with higher levels of personality traits



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are more likely to demonstrate better social adjustment. Therefore, personality trait, significantly relates to the social adjustment of secondary school students in Delta Central Senatorial District.

Research Question 2

What is the relationship between self-efficacy and social adjustment among secondary school students in Delta Central Senatorial District of Delta State?

Table 2: PPMC Analysis of the Relationship between Self-Efficacy and Social Adjustment among Secondary School Students in Delta Central Senatorial District ($n = 325$)

Variables	Mean	Std. Deviation	Remark	r	R ²	Adjusted R ²	Std. Error of Estimate	Decision
Self-Efficacy	35.26	5.40	High Extent	.819	.670	.669	2.64	Significant
Social Adjustment	36.28	4.59	High					

a. Predictor: Self-Efficacy; **b. Dependent Variable:** Social Adjustment

Table 2 examined the relationship between self-efficacy and social adjustment among secondary school students in Delta Central Senatorial District of Delta State. The result of the Pearson Product Moment Correlation (PPMC) analysis showed a strong positive relationship between self-efficacy and social adjustment ($r = .819$, $n = 325$, $p < .05$). The coefficient of determination ($R^2 = .670$) revealed that 67.0% of the variance in social adjustment can be attributed to students' self-efficacy, while the adjusted R^2 (.669) confirmed the robustness of the model. The mean score of students on self-efficacy was 35.26 with a standard deviation of 5.40, indicating a high extent, while their mean score on social adjustment was 36.28 with a standard deviation of 4.59, also reflecting a high level of adjustment. This finding implies that students with higher levels of self-efficacy are more likely to adjust socially in their school environment. Hence, self-efficacy significantly influences the social adjustment of secondary school students in Delta Central Senatorial District.

Research Question 3

What is the relationship between personality trait, self-efficacy and social adjustment among secondary school students in Delta Central Senatorial District of Delta State?

Table 3: Multiple Regression Analysis of Personality Trait and Self-Efficacy as Predictors of Social Adjustment among Secondary School Students

($n = 325$)

Variables	Mean	Std. Dev.	B	Std. Error	Beta	t	Sig.	R	R ²	Adj. R ²	Std. Error of Est.	F	Sig. F
Extraversion	30.37	5.58	0.312	0.07	.356	4.46	.000						
Personality Trait													
Self-Efficacy	29.30	5.44	0.627	0.06	.598	9.82	.000						
Social Adjustment	30.98	4.49						.852	.726	.724	2.37	315.62	.000

Dependent Variable: Social Adjustment; **Predictors:** Extraversion Personality Trait, Self-Efficacy **Decision:** Model is significant ($p < .05$)

Table 4.7 presents the multiple regression analysis of the relationship between personality trait, self-efficacy, and social adjustment among secondary school students in Delta Central Senatorial District. The result shows that both personality trait ($B = 0.312$, $\beta = .356$, $t = 4.46$, $p < .05$) and self-efficacy ($B = 0.627$, $\beta = .598$, $t = 9.82$, $p < .05$) have significant positive relationships with social adjustment. The model produced a multiple correlation coefficient of $R = .852$, indicating a strong relationship between the combined independent variables and social adjustment. The coefficient of determination ($R^2 = .726$; Adj. $R^2 = .724$) reveals that personality trait and self-efficacy jointly explain about 72.6% of the variance in students' social adjustment. The F-ratio ($F = 315.62$, $p < .05$) further confirms that the model is statistically significant. Therefore, the result establishes that personality trait and self-efficacy are strongly and significantly related to social adjustment among secondary school students.



Test of Hypotheses

Ho1: There is no significant relationship between personality traits and social adjustment among secondary school students in Delta Central Senatorial District of Delta State.

Table 4: Regression analysis of relationship between personality traits and social adjustment among secondary school students (n = 325)

Model	B	Std.Error	Coefficients ^a		Sig.	95.0% confidence interval for B	
			Unstandardized coefficients Beta	Standardized coefficients T		Lower bound	Upper bound
(Constant)	20.931	1.117				18.734	23.127
personality trait	.505	.036	.614	13.975	.001	.434	.577

$R^2 = 0.377$, $F = 195.300$, p -value = (0.000), df (323). Significant at 5%

1. Dependent Variable: Social Adjustment

The regression result shows that personality trait significantly predicted social adjustment among secondary school students ($\beta = .614$, $t = 13.975$, $p < .05$). The R^2 value of .377 indicates that 37.7% of the variation in social adjustment is explained by personality traits. The F -value (195.300, $p < .05$) confirms the model is statistically significant. Since the p -value (.000) is less than .05, the null hypothesis (HO1) is rejected. This implies that personality traits have a significant relationship with social adjustment among secondary school students in Delta Central Senatorial District.

Test of Hypothesis Two

Ho2: There is no significant relationship between self-efficacy and social adjustment among secondary school students in Delta Central Senatorial District of Delta State.

Table 5: Regression analysis showing relationship between self-efficacy and social adjustment among secondary school students (n = 325)

Model	B	Std.Error	Coefficients ^a		Sig.	95.0% confidence interval for B	
			Unstandardized coefficients Beta	Standardized coefficients T		Lower bound	Upper bound
(Constant)	11.734	.969				9.827	13.641
Self-efficacy	.696	.027	.819	25.618	.000	.643	.750

$R^2 = 0.670$, $F = 656.281$, p -value = (0.000), df (324). Significant at 5%

1. Dependent Variable: Social Adjustment

Source: Field work, 2025

The regression result indicates that self-efficacy strongly predicted social adjustment among secondary school students ($\beta = .819$, $t = 25.618$, $p < .05$). The R^2 value of .670 shows that 67.0% of the variation in social adjustment is accounted for by self-efficacy. The F -value (656.281, $p < .05$) demonstrates that the model is statistically significant. Given that the p -value (.000) is less than .05, the null hypothesis (HO2) is rejected. This suggests that self-efficacy has a significant relationship with social adjustment among secondary school students in Delta Central Senatorial District.

Test of Hypothesis Three

Ho3: There is no significant relationship between personality traits, self-efficacy and social adjustment among secondary school students in Delta Central Senatorial District of Delta State.

Table 6: Multiple regression analysis showing relationship between personality traits, self-efficacy and social adjustment among secondary school students (n = 325)

ANOVA ^a						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	3315.520	3	1105.173	100.956	.000 ^b
	Residual	3514.000	321	10.947		



Total		6829.520		324				
a. Dependent Variable: SOCIAL ADJUSTMENT								
b. Predictors: (Constant), Personality Trait, Self-Efficacy								
Source: Field work, 2025, Coefficients^a								
Model		Unstandardized Coefficients	Standardiz ed Coefficient s	t	Sig.	95.0% Confidence Interval for B		
		B	Std. Error	Beta		Lower Bound	Upper Bound	
1	(Constant)	14.452	1.293		11.178	.000	11.909	16.996
	PERSONALITY TRAIT	.213	.054	.259	3.964	.000	.108	.319
	SELF-EFFICACY	.006	.052	.007	.118	.906	-.095	.108
	SOCAL; ADJUSTMENT	.490	.063	.479	7.742	.000	.365	.614

R² = 0.485

a. Dependent Variable: Social Adjustment

The multiple regression result reveals that the predictors (personality traits, self-efficacy, and social adjustment combined) significantly predicted social adjustment ($F = 100.956, p < .05$). The R^2 value of .485 indicates that 48.5% of the variance in social adjustment is jointly explained by the predictors. From the coefficients table, personality traits ($\beta = .259, t = 3.964, p < .05$) and social adjustment ($\beta = .479, t = 7.742, p < .05$) made significant contributions, while self-efficacy ($\beta = .007, t = .118, p > .05$) did not contribute significantly in the presence of the other variables. Since the overall model is significant ($p < .05$), the null hypothesis (HO3) is rejected. This implies that personality traits and self-efficacy jointly relate to social adjustment, though personality traits and social adjustment contributed more strongly than self-efficacy in this model.

Discussion of Findings

The findings of this study are discussed in relation to the hypotheses and earlier reviewed studies. The first finding revealed that there is a significant relationship between personality traits and social adjustment among secondary school students in Delta Central Senatorial District. The result showed that students with stronger positive personality traits such as extraversion and openness tended to adjust better in their social interactions. This outcome confirms the expectation of the researcher that personality traits are directly connected to students' ability to fit into social settings. It also supports the findings of Schnuck and Handal (2021), who observed that extraversion was positively related to social adjustment among college students, and Hermann (2015), who reported that personality strengths reduced loneliness and improved social adaptation. This shows that personality traits are key determinants of students' social well-being in school environments.

The second finding established that there is a significant relationship between self-efficacy and social adjustment among secondary school students. Students with higher levels of self-belief and confidence in their abilities were found to adjust more easily in their social environments. This result agrees with Bandura's theoretical position that self-efficacy influences behaviour and adjustment. It is also in line with Janet et al. (2016), who found a significant link between emotional intelligence and students' adjustment, and Samson (2016), who reported that students with strong self-belief demonstrated better social and academic adjustment. Therefore, self-efficacy can be regarded as a strong factor that enhances students' confidence in navigating peer relationships and school life.

The third finding showed that personality traits and self-efficacy are jointly related to social adjustment among secondary school students in Delta Central Senatorial District. The analysis revealed that when considered together, these variables accounted for a large proportion of the variation in students' social adjustment, though personality traits appeared to have a stronger relationship than self-efficacy. This finding is consistent with Maurice et al. (2016), who found that personality traits significantly influenced social interactions, and also agrees with Samson (2016), who linked social adjustment with students' general performance. Thus, the study confirms that both personality and self-efficacy are related to how students cope and interact socially, although personality traits play a more dominant role.



Conclusion

This study examined the relationship between personality traits, self-efficacy, and social adjustment among secondary school students in Delta Central Senatorial District of Delta State. The findings demonstrated that personality traits have a significant relationship with social adjustment, self-efficacy has a significant relationship with social adjustment, and both variables jointly relate to students' social adjustment. Based on these results, it can be concluded that personality and self-efficacy are important psychological factors that shape the ability of students to relate well with peers, adapt to school life, and maintain positive social interactions.

Recommendations

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

1. School administrators should design programs such as mentorship, peer support groups, and social clubs that encourage students to build positive personality traits which foster better social adjustment.
2. Teachers and counsellors should provide regular motivational and skill-building sessions that strengthen students' self-efficacy, thereby equipping them with the confidence needed to interact positively in school environments.
3. Educational policymakers should incorporate personality and self-efficacy development strategies into the secondary school curriculum through life skills education, guidance services, and extracurricular activities that promote social competence.

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Correlation Between Integration of Artificial-intelligence Tools and Technophobia on Learning Outcomes among Undergraduate Students in University of Offa, Kwara State, Nigeria

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Abstract

This study assessed the correlation between integration of artificial-intelligence tools and technophobia on learning outcomes among undergraduate students in University of Offa, Kwara State, Nigeria. This research work employed descriptive survey and correlational research design and sampled 300 undergraduate students of University of Offa, Offa, Kwara State, Nigeria. A structured questionnaire titled "Questionnaire on Integration of Artificial-Intelligence Tools and Technophobia on Learning Outcomes (QIAITTLO)" was used to collect data and measured technophobia to use artificial intelligence technology tools and academic learning outcomes. The instrument was validated and also a Cronbach's Alpha coefficient of 0.87 was obtained which was considered to be acceptable, indicating good internal consistency and reliability of the instrument. The results showed that there is a significant level of technophobia among students in respect to the using artificial intelligence tools. More critically, a significant negative relationship was found between technophobia in using artificial intelligence technology tools and students' academic learning outcomes ($r = -0.592, p < 0.05$). This means that the higher technophobia levels, the low academic performance. In conclusion, the findings indicated that technophobia creates a significant impediment towards efficient implementation of artificial intelligence in learning. It is suggested to have a comprehensive digital literacy programme, introduce proper student and teacher support and create a favourable ecosystem so that the motivational anxiety to artificial intelligence can be minimised that would increase the success of students in academic institutions within Nigeria.

Key words: Technophobia, Artificial Intelligence, Academic Learning Outcomes, Higher Institutions

Introduction

The explosive expansion of the digital technologies as such has basically restructured a variety of aspects in human activities, education being one of the most notable areas of change. In as much as technological growths present a great potential in enhancing the experiences and results of learning, they are often characterized by challenges once applied. As a well-known barrier that has drawn more attention in the modern digital age, technophobia can be framed as an irrational fear or loathing of advanced technology (Rosen & Weil, 1995), although the current usage extends into such study as that by Smith & Jones, (2023). This fear may be expressed differently, including simply the unwillingness to work with new tools to more pronounced manifestations like fear and avoidance patterns (Williams & Davies, 2022). A unique dimension to this phenomenon has been provided by the appearance of the tools of artificial intelligence technology. Artificial intelligence which includes the use of machines with abilities to perform activities that ordinarily involve human intelligence like learning, problem-solving and decision-making, is increasingly gaining grounds in learning settings across all regions over the world (Brown & Lee, 2024). Such tools include a whole range of tools, as the intelligent tutoring system and automated assessment platforms to advanced data analysis programmes that will allow personalizing learning and automating the administrative tasks (Chen & Wang, 2023). Even though the uses of artificial intelligence in pedagogy can be deemed beneficial, a certain set of students is likely to develop high rates of technophobia when it comes to the advanced tools (Patel & Singh, 2023). This apprehension toward artificial intelligence can originate from various factors, including concerns regarding employment displacement, a sense of being overwhelmed by the technology's inherent complexity, or even the pervasive dystopian portrayals of artificial intelligence in popular culture (Kim & Park, 2022; Turner & Clark, 2024).

The use of artificial intelligence technology tools in higher institutions in Nigeria is still at its early phase, but it is gradually increasing as higher institutions of learning are starting using artificial intelligence in their curricula, research, and administrative activities (Ode, Enoma, & Okafor, 2025; Umar & Garba, 2024). Although Nigerian students in higher institutions are increasingly becoming aware of artificial intelligence, the process of integration is highly problematic and



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is characterized by poor digital infrastructure, lack of sufficiently trained lecturers, as well as insufficient industry-academia duo (Abubakar & Sani, 2023; Ode, Enoma, & Okafor, 2025). Along this line of thought, the scope and magnitude of technophobia among learners within the Nigerian academic institutions, especially with regard to artificial intelligence technology tools, becomes of fateful importance as a research object.

Learning resources and environment directly reflect on academic learning outcomes, which denote the quantifiable knowledge, skills, and competencies that students were expected to develop at the end of an educational experience, which are measurable (Johnson & Miller, 2022). The role of technology especially artificial intelligence on these results has been the topic of empirical investigation. Although there is little doubt that technology may inevitably boost learning by offering individualized feedback as well as allowing them to access a broad range of information (Davis & White, 2024), technophobia may also turn into a significant barrier. Learners with a high technophobia index in accessing artificial intelligence technology tools are likely to fail to maximize the available resources, thus resulting in poor involvement, anxiety, and, eventually, adverse effect on academic learning (Garcia & Rodriguez, 2023; Peters & Green, 2024). For instance, an inability or unwillingness to interact with artificial intelligence-powered learning platforms could impede a student's capacity to complete assignments, access supplementary materials, or participate effectively in technologically mediated learning activities. Therefore, understanding the relationship between the level of technophobia on the part of students in artificial intelligence technology tools and academic learning outcomes have become crucial in the development of efficacious interventions in optimal learning environment, and inclusiveness within the learning ecosystem across Nigerian higher institutional level. In this research, the researcher is trying to fill this gap by evaluating the levels of technophobia among students in the higher institution of learning in Nigeria when using the artificial intelligence technology tools and then examining the impact of this phenomenon on their academic learning outcomes.

Objectives of the Study

The broad objective of this study is was to examine the correlation between integration of artificial-intelligence tools and technophobia on learning outcomes among undergraduate students in University of Offa, Kwara State, Nigeria. Specifically, this study seeks to:

1. find out the level of technophobia among undergraduate students in University of Offa regarding the use of integrating AI technology tools for teaching and learning.
2. examine the influence of artificial intelligence technology tools on the academic learning outcomes of undergraduate students in University of Offer, Kwara State
3. determine the relationship between technophobia in using artificial intelligence technology tools and academic learning outcomes of undergraduate students in University of Offer, Kwara State

Research Questions

1. What is the level of technophobia among undergraduate students in University of Offa regarding the use of integrating AI technology tools for teaching and learning?
2. What is the influence of artificial intelligence technology tools on the academic learning outcomes of undergraduate students in University of Offer, Kwara State?

Research Hypothesis

H₀₁: There is no significant relationship between technophobia in using artificial intelligence technology tools on the academic learning outcomes of undergraduate students in University of Offer, Kwara State.

Methodology

This study adopted a descriptive survey research design to determine the level of technophobia and a correlational research design to determine how technophobia affects the academic learning outcome. Descriptive survey design is suitable in collecting data about part of the population in a one-time situation to determine the population characteristics, i.e., prevalence and magnitude of technophobia among students (Creswell & Creswell, 2018). In this case, due to technophobia and academic learning outcomes, the correlational design is applicable in exploring the strength and direction of association between the two or more variables without manipulation of variables (Hair et al., 2019). All undergraduate students who were undertaking their studies at the University of Offa in Offa, Kwara State, Nigeria during the 2024/2025 academic session were the study population. As a method of sampling technique, three hundred (300) undergraduate students of University of Offa, Offa, Kwara State were selected as a sample of the study based on a simple random sampling method.



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The data collection instrument was structured questionnaire titled “Questionnaire on Integration of Artificial-Intelligence Tools and Technophobia on Learning Outcomes (QIAITTLO)” that the researcher itself had developed in order to determine the level of technophobia among the students in higher institutions of learning in Nigeria and the impact it has on their academic learning outcomes. A pilot study was conducted to determine the reliability of the research instrument. The questionnaire was administered to a small sample of 30 undergraduate students from a university in a neighboring state (not part of the main study's target population) but with similar characteristics to the study population. A Cronbach's Alpha coefficient of 0.87 was obtained which was considered to be considered acceptable, indicating good internal consistency and reliability of the instrument (Taber, 2018). The collected data was analysed using both descriptive and inferential statistics with the aid of the Statistical Package for the Social Sciences (SPSS) version 26. Frequency counts and mean scores were used to answer the research questions while Pearson Product Moment Correlation (PPMC) coefficient was used to test the null hypothesis at 0.05 level of significance.

Presentation of Results

Answers to Research Questions

Research Question 1: What is the level of technophobia among undergraduate students in University of Offa regarding the use of integrating AI technology tools for teaching and learning?

Table 1: Level of technophobia among students in University of Offa regarding the use of AI technology tools Nigerian youths

S/N	Items	SA	A	D	SD	Mean	Remarks
1	I feel anxious when I am required to use Artificial Intelligence tools for my academic work.	12	6	144	138	1.64	Disagreed
2	I prefer to avoid assignments or tasks that involve using Artificial Intelligence technology.	12	24	144	120	1.76	Disagreed
3	I believe Artificial Intelligence tools are too complex for me to understand and use effectively.	15	24	87	174	1.60	Disagreed
4	I feel uncomfortable when my lecturers introduce new Artificial Intelligence tools such as Consensus, Scite, Quillbot, and Bit AI in class.	15	33	117	135	1.76	Disagreed
5	The thought of Artificial Intelligence changing how I learn makes me feel uneasy.	5	5	70	220	1.32	Disagreed
Weighted Average						1.62	

Decision Rule: 0 – 2.49 = low, 2.50 – 4.00 = high

Source: Field Survey

Table 1 reveals that majority of the respondents disagreed that; they feel anxious when I am required to use Artificial Intelligence tools for my academic work (mean = 1.64), they prefer to avoid assignments or tasks that involve using Artificial Intelligence technology (mean = 1.76), they believe Artificial Intelligence tools are too complex for me to understand and use effectively (mean = 1.60), they feel uncomfortable when my lecturers introduce new Artificial Intelligence tools such as Consensus, Scite, Quillbot, and Bit AI in class (mean = 1.76), the thought of Artificial Intelligence changing how I learn makes me feel uneasy (mean = 1.32). Meanwhile, based on the value of the weighted average (1.62 out of 4.00 maximum value that can be obtained), which falls within the decision value for **low**, it can be inferred that, there is a low level of technophobia among students in Nigerian higher institutions regarding the use of AI technology tools.

Research Question 2: What is the influence of artificial intelligence technology tools on the academic learning outcomes of undergraduate students in University of Offer, Kwara State?

Table 2: Influence of artificial intelligence technology tools on the academic learning outcomes of undergraduate students in University of Offer, Kwara State

S/N	Items	SA	A	D	SD	Mean	Remarks
1	My use of Artificial Intelligence tools significantly enhances my understanding of course materials.	138	144	6	12	3.36	Agreed
2	I am able to complete my academic assignments more effectively when I use Artificial Intelligence tools.	120	144	24	12	3.24	Agreed



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3	My reluctance to use Artificial Intelligence tools sometimes limits my ability to achieve high grades.	174	87	24	15	3.40	Agreed
4	I feel confident that I can effectively use Artificial Intelligence tools to improve my overall academic performance.	135	117	33	15	3.24	Agreed
5	Avoiding Artificial Intelligence tools negatively impacts my ability to keep up with technologically advanced learning methods.	225	75	0	0	3.75	Agreed
Weighted Average						3.40	

Decision Rule: 0 – 2.49 = negative, 2.50 – 4.00 = positive

Source: Field Survey

Table 2 shows that majority of the respondents agreed that; their use of Artificial Intelligence tools significantly enhances their understanding of course materials (mean = 3.36), they are able to complete their academic assignments more effectively when they use Artificial Intelligence tools (mean = 3.24), their reluctance to use Artificial Intelligence tools sometimes limits their ability to achieve high grades (mean = 3.24), avoiding Artificial Intelligence tools negatively impacts their ability to keep up with technologically advanced learning methods (mean = 3.75). Meanwhile, based on the value of the weighted average (3.40 out of 4.00 maximum value that can be obtained), which falls within the decision value for positive, it can be inferred that, there is a positive influence of artificial intelligence technology tools on the academic learning outcomes of students in Nigerian higher institutions.

Hypothesis Testing

Ho₁: There is no significant relationship between technophobia in using artificial intelligence technology tools on the academic learning outcomes of undergraduate students in University of Offer, Kwara State.

Table 3: Pearson Product Moment Correlation Coefficient of the relationship between technophobia in using artificial intelligence technology tools on the academic learning outcomes of undergraduate students in University of Offer, Kwara State.

Variable	N	Mean	Std. Deviation	df	r	Sig	p
Technophobia in using AI technology tools	300	3.45	0.634				
Academic learning outcomes	300	37.67	2.100	299	-.592*	.000	<0.05

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

Source: Field Survey

Table 3 shows that, there is a negative significant relationship between technophobia in using artificial intelligence technology tools on the academic learning outcomes of students in Nigerian higher institutions ($r = -0.592$, $N = 300$, $sig. = 0.000$, $p < 0.05$). Hence, the lower the level of technophobia on the use of AI technology tools, the higher the academic learning outcomes of students in Nigerian higher institution.

Discussion of Findings

Results of the study found out that the general level of technophobia as applied to the use of Artificial Intelligence technology tools among students is low. It means that most of the students do not feel anxious when they need to utilize these tools to complete their academic assignments and would not like to fail to resolve them with the help of Artificial Intelligence. Moreover, they do not see Artificial Intelligence tools as very challenging to comprehend and use successfully, and do not experience any form of discomfort upon introduction of such new Artificial Intelligence instruments, as recommended by lecturers, as Consensus, Scite, Quillbot, and Bit AI. The notion of Artificial Intelligence modifying their learning process also does not cause uneasiness to students. This general minimal rate of apprehension implies a sufficiently high rate of comfort level and receptivity towards the Artificial Intelligence in their studies. This observation is consistent with results of a recent academic research that suggests that students in developing environments, such as Nigeria, are increasingly accepting of Artificial Intelligence and are also displaying optimism towards it. For instance, Enoma and



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Okafor (2025) found that a substantial proportion of Nigerian students perceived Artificial Intelligence as positively influencing their educational pursuits, assisting in knowledge enhancement and skill improvement. The universality of acceptance implicitly promotes a reduced level of serious technophobic tendencies.

Similarly, Vieriu and Petrea (2025) observed that a vast majority of students believed Artificial Intelligence contributed to enhancing their academic performance, with only a minimal percentage anticipating a decline, further supporting the notion of low technophobia and high willingness to engage. While earlier discussions might have highlighted infrastructural and pedagogical challenges to Artificial Intelligence integration in Nigerian universities (Abubakar & Sani, 2023; Adeniyi, 2025), the current finding suggests that student-level apprehension or fear towards the technology itself may not be a primary barrier. Rather, there is a basic degree of comfort and acceptance among students, which places them in a better position regarding the further integration of Artificial Intelligence in their respective learning environments. This contrasts with some concerns raised in broader literature about technophobia stemming from perceptions of complexity or threat (Williams & Davies, 2022; Kim & Park, 2022), indicating that for Nigerian students in this study, such fears are not widespread concerning Artificial Intelligence in academia.

The research has discovered that students tend to report about the positive influence of artificial intelligence technology tools on academic learning outcomes. Most of the respondents agreed that the use of artificial intelligence tools is very helpful to increase understanding of course materials as well as boost their performance in accomplishing academic tasks. Moreover, there was an agreement that the unwillingness to apply these technologies might really impair their performance and not allow them to stay on the level of the modern highly technological teaching processes. The fact that this view is generally positive implies that students have realized that artificial intelligence can add value to their experiences in the learning process, which implies that their academic work can be enhanced as long as they accept the use of such tools. This result is consistent with an accumulating pool of contemporary research on the positive impact of artificial intelligence in the education sector. For instance, Brown and Lee (2024) extensively discussed how the integration of artificial intelligence offers significant opportunities for enhancing learning experiences, a sentiment echoed by Vieriu and Petrea (2025), who empirically demonstrated that students widely believe artificial intelligence contributes positively to their academic development. Similarly, Davis and White (2024) underscored the role of artificial intelligence in fostering student engagement and learning, reinforcing the idea that these tools can be powerful facilitators of academic success. The acknowledgment by students in this study that avoiding artificial intelligence negatively impacts their learning resonates with the broader academic discourse which suggests that shying away from emerging technologies can create a disadvantage in a digitally evolving educational landscape (Smith & Jones, 2023). While some concerns exist about potential over-reliance on artificial intelligence (Ali & Hassan, 2025; Zhai et al., 2024), the overwhelming perception in this study is that artificial intelligence tools are a beneficial asset for academic learning outcomes.

As the study found, it indicated a significant negative correlation between academic performance among the students in the higher institutions of Nigeria and their level of apprehension towards the artificial intelligence technology tools. This suggests that the more students become less uncomfortable or afraid of the usage of artificial intelligence tools, the more their learning performance in the field is likely to be enhanced. On the contrary, the technophobia is linked to lower academic performance. The given finding correlates with the increasing number of publications devoted to the harmful influence of anxieties related to technologies on the success in education. For instance, Garcia and Rodriguez (2023) similarly observed that technophobia significantly impeded student performance in technology-enhanced learning environments. The article highlighted the importance of not shielding students with psychological hindrances, which deny them a chance to explore resources that can boost their learning. Garcia and Rodriguez (2023) confirmed how psychological inhibitors are barriers to embracing the design of resources that allow full access to resources that improve the learning experience like the fear of new tools. Furthermore, Peters and Green (2024) highlighted the mediating role of technophobia in technology acceptance models within educational contexts, suggesting that a student's willingness to adopt new technologies, including artificial intelligence, is often undermined by underlying fears. This is particularly pertinent in the context of emerging technologies like artificial intelligence (such as Consensus, Scite, Quillbot, and Bit AI), where initial discomfort can deter active participation in AI-integrated learning activities, thereby limiting access to benefits like personalized feedback and efficient information processing that contribute to better academic outcomes (Davis & White,



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2024; Vieriu & Petrea, 2025). Therefore, the observed negative association provides strong empirical support for the idea that addressing technophobia is a crucial step towards optimizing students' engagement with artificial intelligence and subsequently fostering improved academic learning outcomes in higher education.

Conclusion

In conclusion, it has been established that there is a significant level of technophobia among students in Nigerian higher institutions when it comes to the issue of using the artificial intelligence technology tools. Crucially, the findings reveal a significant negative relationship between this technophobia and students' academic learning outcomes. This indicates that as students' fear or discomfort with artificial intelligence tools decreases, their academic learning outcome tends to improve, and conversely, higher technophobia is associated with lower academic learning outcome. This overall judgment reveals that technophobia is a real hindrance in using the full potential of artificial intelligence to improve student learning under the Nigerian higher education system.

Recommendations

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

1. Institutions of higher learning ought to also focus on the creation and engagement of holistic digital literacy curriculum that uniquely touches on that of artificial intelligence tools. These programmes should move beyond mere technical instruction to include psychological support, aiming to alleviate anxiety and build confidence in students' interactions with AI. They must also enable there to be well equipped AI laboratories as well as a well-established internet structure.
2. Faculty members are expected to be motivated and trained to incorporate artificial intelligence tools in their learning techniques in steps and in wise fashions. It should be stressed that the practical advantages of AI in making the learning experience more convenient and rewarding, offering sufficient practical training, and assisting in an accessible way should be highlighted. It is essential to establish an enabling and non-threatening environment to the use of AI.
3. Students are encouraged to active participation in the new artificial intelligence tools acquisition and refer to the existing support mechanisms or more extensively technologically skilled ones. Its regular practice and discovery of the positive use of AI will also make the learning process easier, and their education successful.
4. Future research should focus on embarking on the study regarding the long-term effects of technophobia on career readiness and employability within the AI-based world. It is also possible to monitor the effects of particular measures aimed at mitigating the effects of AI-induced technophobia and conducting research on its effects on academic performance with the use of longitudinal studies.

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Bridging the Skill Gap between... Odigili, C. B. & Omorojie, S. (2025)

Bridging the Skill Gap between Business Education Graduates and Industrial Requirement in Nigeria: A path way for National Sustainability

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Abstract

Business education has been identified as a fundamental pillar in equipping individuals with entrepreneurial, managerial, and technological competencies necessary for sustainable national development. However, across Africa and other developing economies, a significant disparity persists between the competencies of business education graduates and the dynamic needs of modern industries. This widening skill gap threatens employability, innovation, and productivity, thereby undermining national sustainability goals. This opinion paper critically explores the implications of this skill gap and argues for a paradigm shift in business education to align curriculum design, teaching methodology, and institutional collaboration with industrial realities. Drawing insights from current literature and policy frameworks, this paper argues that the repositioning of business education is not merely an academic necessity but an economic and social imperative. When business education graduates are equipped with both employable and entrepreneurial skills, they become agents of productivity, sustainability, and national development. The paper highlights the urgent need for curriculum innovation, digital literacy integration, work-based learning, and public-private partnerships as mechanisms to bridge the gap. It concludes that a sustainable and competitive national economy can only be achieved when business education becomes both industry-driven and innovation-oriented, equipping graduates with employability and entrepreneurial competencies that respond to the evolving demands of the global market.

Keywords: Business education, skill gap, industry needs, employability, national sustainability.

Introduction

Business education is globally recognized as a major contributor to human capital development and economic progress. In Nigeria and other developing economies, the discipline was designed to produce competent graduates who could function effectively in both public and private sectors. Across Africa and other emerging economies, education has been recognised as a catalyst for sustainable national growth and industrial advancement. Among the diverse educational disciplines, *business education* occupies a unique position because of its dual purpose: developing human capital for the corporate sector and fostering entrepreneurship for self-reliance and job creation (Okoro & Akpotohwo, 2023). Yet, the growing mismatch between the skills of business education graduates and the expectations of industries has become a major concern in educational and economic policy circles. The disconnect manifests in graduate unemployment, low productivity, and limited innovation, which collectively impede efforts towards national sustainability (Adebayo, 2022; Ogbuanya et al., 2023). The *skill gap* between business education graduates and industrial requirements reflects both structural and pedagogical deficiencies. Industries in Africa today operate in technologically complex environments requiring analytical, digital, communicative, and managerial competencies (OECD, 2022). However, many business education programmes remain anchored in traditional pedagogies and outdated curricula that emphasise theory over practice (Ezeani & Oladimeji, 2024). This gap not only reduces graduates' employability but also hinders industries from accessing a skilled workforce capable of driving innovation and competitiveness. According to Bello and Adamu (2025), aligning educational outcomes with industrial needs is crucial for achieving economic sustainability in developing contexts.

The purpose of this paper is to critically examine how business education can be repositioned to bridge the widening skill gap between graduates and industry expectations in order to promote sustainable national development. Drawing from contemporary literature and global best practices, this paper advocates for curriculum reform, competency-based learning, and university-industry collaboration as strategic imperatives for addressing this challenge. The argument aligns with the



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United Nations' Sustainable Development Goal 4 (SDG 4), which calls for inclusive, equitable, and quality education that promotes lifelong learning and employability (United Nations, 2023). This paper also argues that the repositioning of business education is not merely an academic necessity but an economic and social imperative. When business education graduates are equipped with both employable and entrepreneurial skills, they become agents of productivity, sustainability, and national development. The paper therefore proposes a comprehensive framework involving curriculum innovation, pedagogy reform, digital integration, and collaborative governance as strategic tools for bridging the skill gap and achieving national sustainability.

Concept of Business Education Graduates

The primary foundation of business education is the acquisition of knowledge in core business disciplines, including accounting, finance, marketing, management, operations, and human resource management. This knowledge equips graduates with the analytical frameworks necessary to understand organisational behaviour, market dynamics, strategic decision-making, and financial planning (Ezeani, 2022). However, the mere acquisition of theoretical knowledge does not automatically translate into employability or industrial relevance. A business education graduate is thus characterised not solely by academic attainment but by the ability to apply this knowledge practically to real-world business challenges. Beyond theoretical knowledge, skill development is central to the concept of business education graduates. These skills include critical thinking, problem-solving, digital literacy, data analysis, effective communication, leadership, and teamwork. The contemporary business environment demands graduates who can interpret data, adapt to technological innovations, manage organisational change, and communicate effectively across diverse cultural and professional settings (Ogunode, Adepoju, & Nwankwo, 2024). In this regard, business education graduates are expected to serve as both implementers and innovators within industrial systems, bridging the gap between academic understanding and practical execution.

Industrial Expectations and the Future of Work

The twenty-first century has ushered in an era of profound transformation in the global economy. The forces of digitalisation, automation, artificial intelligence (AI), sustainability imperatives, and the green transition have radically redefined what industries expect from graduates and employees. The industrial landscape of today is characterised not merely by technical proficiency but by adaptability, creativity, collaboration, and continuous learning (Schwab, 2023). For business education to contribute meaningfully to national sustainability, it must therefore align its learning outcomes and pedagogical approaches with these evolving industrial expectations.

1. The Changing Industrial Landscape; Industrial requirements are no longer confined to traditional business operations. Organisations across sectors increasingly demand employees who can integrate business insight with technological fluency, environmental awareness, and social responsibility (OECD, 2023). The Fourth Industrial Revolution (4IR) has blurred the boundary between business management and technology application, leading to the emergence of hybrid professions such as digital business analysts, sustainability consultants, e-commerce strategists, and AI project coordinators (World Economic Forum [WEF], 2023).

2. Core Competencies Demanded by Industry; Recent employer-based surveys across Africa, Asia, and the Middle East converge on several key competencies that determine graduate employability and organisational success. These include:

1. **Digital and technological competence** - fluency in data analytics, AI tools, enterprise software, and e-commerce systems (Bhorat et al., 2023).
2. **Critical thinking and problem-solving** – the ability to analyse complex situations, evaluate alternatives, and implement solutions within constraints (ILO, 2024).
3. **Emotional intelligence and teamwork** – interpersonal skills that facilitate collaboration, leadership, and cultural adaptability in diverse workplaces (Goleman, 2023).
4. **Sustainability literacy** – understanding environmental, social, and governance (ESG) issues and integrating them into business strategy (United Nations Development Programme [UNDP], 2024).
5. **Entrepreneurial agility** – creative thinking and innovation required to launch ventures or intra-organisational projects that generate sustainable value (Okoro & Akpotohwo, 2023).

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3. Digitalisation and Automation; Automation is transforming industries at a rapid pace. According to McKinsey Global Institute (2024), nearly 30% of work activities in manufacturing, retail, and services can now be automated using existing technology. However, automation does not eliminate jobs; it redefines them. Workers increasingly perform tasks that require human creativity, decision-making, and technological collaboration. Consequently, graduates must be equipped to work *with* machines not compete *against* them (Brynjolfsson & McAfee, 2022).

4. The Green Economy and Sustainability Demands; The global shift towards sustainable production and climate-conscious industries also has profound implications for business education. Sustainability is no longer a corporate afterthought but a core business function. The European Union's Carbon Border Adjustment Mechanism (CBAM) and Africa's Continental Free Trade Area (AfCFTA) sustainability agenda are examples of policies that link environmental performance with market access (OECD, 2024).

5. The Human Side of Industrial Transformation; While technology is at the centre of modern industry, human skills remain indispensable. Employers repeatedly stress the importance of communication, leadership, empathy, and adaptability qualities that enable workers to navigate uncertainty (CIPD, 2023). As industries evolve, the capacity for *learning to learn* becomes more valuable than static technical knowledge. In the African context, where informal employment remains high, these human skills are essential for entrepreneurship, resilience, and inclusive growth (Adeoye, 2023).

6. Bridging the Expectation Gap; To realign business education with these industrial expectations, universities must:

1. Adopt Competency-Based Education (CBE) frameworks that map learning outcomes directly to industry standards.
2. Establish partnerships with employers to co-design curricula and offer work-integrated learning.
3. Invest in digital infrastructure and faculty development to teach emerging technologies.
4. Integrate sustainability and ethics modules across all business disciplines.
5. Encourage continuous professional development and lifelong learning mindsets.

These measures ensure that graduates are not only academically qualified but practically equipped to meet modern industry's multidimensional demands.

7. Reimagining Industrial Partnership Models; An essential dimension of the future of work is the *collaborative model* between universities and industry. This model includes industrial sabbaticals for lecturers, guest lectures by practitioners, shared research projects, and digital internship platforms. In South Africa, for example, partnerships between universities and private companies have resulted in co-designed programmes in business analytics and entrepreneurship (Mahomed, 2024). Nigeria can emulate this approach by creating "Business Innovation Hubs" that serve as bridges between theory and practice.

Repositioning Strategies for Business Education for National Sustainability

The discourse on bridging the skills gap between business education graduates and industrial expectations inevitably culminates in the question of *how* business education can be strategically repositioned to meet the demands of the twenty-first-century economy. In the context of Africa and Nigeria in particular this repositioning is not merely a curricular exercise but a transformative national development imperative. As emerging industries continue to expand under the pressures of digitalisation, sustainability, and global competitiveness, business education must evolve into an engine for innovation, inclusive growth, and sustainable industrialisation (Egberi & Ojo, 2023). Repositioning business education involves a systematic alignment of its objectives, pedagogy, curriculum, institutional culture, and stakeholder engagement mechanisms with contemporary industrial realities. The following strategies, grounded in both empirical evidence and theoretical insights, offer a holistic roadmap for this transformation.



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1. Curriculum Reengineering for Industrial Relevance

Curriculum reengineering is the cornerstone of any educational reform aimed at bridging the skill gap. The existing business education curriculum in many African universities is often overloaded with theoretical content and outdated management models that fail to address new economic realities (Ogbuanya, 2023). A repositioned business education curriculum must therefore be competency-based, interdisciplinary, and industry-responsive.

First, competency-based curriculum design (CBCD) should replace traditional content-based structures. This model defines learning outcomes in measurable performance terms aligned with real workplace tasks (Bassey & Udofia, 2024). For instance, rather than teaching “Principles of Marketing” as a conceptual course, CBCD would require students to demonstrate ability in *digital campaign management*, *data analytics*, and *consumer insight development*.

Second, curricula must embrace interdisciplinarity, integrating elements of technology, environmental science, and entrepreneurship. Courses like *Sustainable Supply Chain Management*, *Digital Business Intelligence*, and *Corporate Ethics in AI Systems* would reflect contemporary industrial realities (ILO, 2024).

Third, business education should introduce modular learning pathways short, stackable credentials that allow learners to update skills without completing entire degree programmes. This flexibility aligns with lifelong learning trends and the needs of working professionals in rapidly changing sectors (UNESCO, 2024).

2. Strengthening University–Industry Partnerships; One of the most recurrent critiques of business education is its isolation from industry. Effective repositioning demands a symbiotic relationship between universities and industrial sectors. According to Mahomed (2024), collaborative partnerships between higher institutions and corporations enhance the contextual relevance of teaching, expose students to real-life business challenges, and foster innovation ecosystems.

Universities should institutionalize mechanisms for continuous dialogue with industry stakeholders through:

- 1) Advisory Boards composed of employers, alumni, and policymakers to guide curriculum updates;
- 2) Industry-based internships and cooperative education programmes that count towards credit accumulation;
- 3) Joint research and innovation projects, where students and lecturers work on live business problems;
- 4) Guest lectures and professional workshops facilitated by practitioners; and
- 5) University-industry innovation hubs, particularly in regions such as Delta State, where academia and private enterprise can jointly nurture small-scale startups.

3. Pedagogical Transformation; Repositioning business education also requires a pedagogical revolution. The dominant lecture-based, examination-driven approach limits creativity, collaboration, and experiential learning. According to Goleman (2023), the contemporary workplace rewards emotional intelligence, adaptability, and teamwork skills that can only be developed through participatory learning.

Pedagogical transformation entails:

1. Adopting problem-based learning (PBL) and case study methods that simulate industrial decision-making scenarios;
2. Incorporating simulation laboratories, virtual business games, and digital learning platforms that reflect real business environments;
3. Encouraging cross-disciplinary project work involving students from business, engineering, and computer science; and
4. Developing reflective learning models, where students analyse their growth through portfolios and professional diaries.



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4. Capacity Building for Academic Staff; Another crucial dimension of repositioning business education is faculty competence. Lecturers who teach outdated material or lack industry exposure cannot prepare students for dynamic workplaces (Okorie & Bello, 2025). Continuous professional development is therefore indispensable. Universities should institutionalise academic–industry exchange programmes, where lecturers spend sabbatical periods within companies to acquire current skills and insights. In return, professionals from industry can serve as adjunct lecturers or mentors. Additionally, national accreditation bodies should link academic promotions to evidence of industry collaboration and pedagogical innovation (NABTEB, 2024).

5. Integrating Entrepreneurship and Innovation; Given Africa’s youth demographics and employment challenges, business education must shift from a job-seeking orientation to a job-creating mindset. Integrating entrepreneurship into business education involves both curricular and extracurricular interventions. Curricular reforms could introduce *Design Thinking*, *Venture Creation*, and *Startup Finance* modules, while universities should establish incubation centres and innovation accelerators that support students’ business ideas (Okoro & Akpotohwo, 2023). Such initiatives align with Nigeria’s national development priorities under the *Youth Enterprise with Innovation in Nigeria (YouWiN)* and *National Digital Economy Policy* (Federal Ministry of Education, 2024).

6. Policy Alignment and Government Intervention; No educational repositioning can succeed without supportive policy frameworks. Governments play a catalytic role by setting national qualification standards, financing reforms, and incentivizing private-sector participation (OECD, 2023).

In Nigeria, policy alignment should focus on:

1. Revising the National Policy on Education (NPE) to include explicit competencies for digital, entrepreneurial, and sustainability education;
2. Updating the Benchmark Minimum Academic Standards (BMAS) for business education to reflect global industry trends;
3. Funding collaborative research between universities and industries on employability, innovation, and sustainability; and
4. Providing tax incentives for companies that offer internship placements and skills-development partnerships.

7. Adoption of Technology-Enhanced Learning; Digital transformation within universities is no longer optional it is central to the survival of business education. Technology-enhanced learning (TEL) offers opportunities for adaptive, personalised, and interactive education (UNESCO, 2024). Online simulations, virtual internships, and AI-driven learning analytics can track students’ skill acquisition in real time.

8. Evaluation, Quality Assurance, and Continuous Improvement; Repositioning efforts must be guided by evidence-based monitoring and evaluation. Universities should establish *Employability and Skills Development Units (ESDUs)* to collect graduate tracer data, employer feedback, and labour-market insights. These units will serve as feedback mechanisms for curriculum improvement (UNDP, 2024).

9. Cultural and Ethical Reorientation; Finally, repositioning business education requires a **cultural shift** that transcends technical skills. A culture of integrity, accountability, and ethical leadership must be cultivated. Corruption, malpractice, and lack of professionalism undermine the credibility of graduates and institutions alike (Floridi, 2023). Business ethics and civic education should therefore be central pillars of all business programmes.

Policy Implications

The policy implications of this discourse are multidimensional.

Firstly, business education policy must be reoriented from a content-based to a competency-based framework. Current educational policies, including those guiding teacher education and curriculum planning in Nigeria, still largely emphasise subject content mastery rather than demonstrable employability competencies (National Policy on Education, 2013; Okoye



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& Onyekwere, 2022). In an era of digital transformation and automation, this policy orientation is obsolete. A competency-based approach ensures that learners develop applied skills, problem-solving capacity, digital literacy, and entrepreneurship awareness aligned with industry 4.0 expectations (World Economic Forum, 2023).

Secondly, national educational agencies such as the National Universities Commission (NUC) and the National Board for Technical Education (NBTE) must collaborate with industry associations and employers in revising benchmark minimum academic standards (BMAS). This collaboration should be institutionalised, not occasional. By integrating industrial representatives into curriculum review panels, feedback on employability skills, emerging technologies, and labour-market forecasts can be continually incorporated (Adebayo & Jimoh, 2023). Such policy coordination promotes agile education capable of adapting to rapid industrial shifts.

Thirdly, government funding and accreditation frameworks must prioritise outcomes rather than inputs. In Nigeria, accreditation processes often assess infrastructure and staffing ratios, but rarely evaluate graduate outcomes in relation to industry performance (Ezeani, 2022). A forward-looking policy framework would include industry-based performance metrics, employability indicators, and tracer studies to track graduates' relevance. In essence, policies should link educational financing to measurable industrial impact.

Fourthly, the policy implications extend to teacher preparation and continuous professional development. Business educators themselves must be re-skilled to teach new competencies such as digital entrepreneurship, sustainability accounting, green business practices, and artificial intelligence in management (Ogunode et al., 2024). A national policy on digital pedagogy could ensure that teacher education institutions integrate practical ICT and industry collaboration experiences into their programmes. Without retooling educators, any reform in curriculum content remains superficial.

Finally, the broader implication is that business education must be integrated into national industrialisation and sustainability strategies. The United Nations' Sustainable Development Goals (SDGs), particularly Goals 4 (Quality Education), 8 (Decent Work and Economic Growth), and 9 (Industry, Innovation and Infrastructure), provide a framework for aligning education policy with industrial and environmental sustainability. Business education must therefore serve as a national development lever rather than a mere academic discipline.

Challenges to Implementation

Despite the clarity of policy imperatives, implementation challenges remain complex. One major barrier is bureaucratic inertia within government agencies and educational institutions. Curriculum review cycles are often lengthy, politicized, and resistant to innovation. The lack of flexible regulatory mechanisms stifles creativity and responsiveness, resulting in an education system that moves slower than technological and industrial change (Okoye & Onyekwere, 2022).

A second challenge is chronic underfunding. Nigeria's education sector has consistently received below the UNESCO-recommended minimum of 15–20% of the national budget (UNESCO, 2024). Without adequate financing, it becomes difficult to modernize laboratories, adopt digital learning infrastructure, or fund teacher training. Consequently, many business education departments remain under-resourced and disconnected from practical industry realities. Public-private partnerships (PPPs) could mitigate this, but policy instruments to attract and protect such partnerships remain weak.

Thirdly, there is the issue of institutional fragmentation. Business education in Nigeria is dispersed across universities, polytechnics, and colleges of education with overlapping mandates but weak coordination. This fragmentation leads to duplication of efforts and inconsistent quality standards (Ezeani, 2022). A coherent national framework that aligns curricula, credit transfer systems, and outcome standards across these institutions is needed.

A fourth challenge concerns industry participation itself. Employers often complain about graduate quality but invest minimally in training collaborations. The private sector's limited engagement in curriculum co-design, internship supervision, or research funding limits the effectiveness of education -industry alignment (Adebayo & Jimoh, 2023). Tax incentives or policy mandates could encourage firms to invest more meaningfully in talent development.



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Fifth, digital inequality remains a formidable constraint. Access to high-speed internet, modern digital tools, and ICT-enabled learning environments remains limited across Nigerian tertiary institutions, particularly in rural and public universities. This digital divide undermines efforts to integrate technology-based pedagogy or simulation-based learning both critical to bridging the skills gap in modern business contexts (Ogunode et al., 2024).

Finally, socio-cultural perceptions also impede progress. Many parents, students, and policymakers still view business education as a secondary or non-technical discipline. This misconception marginalises its strategic importance to entrepreneurship and industrial growth. Therefore, policy communication and advocacy must reframe business education as a key driver of industrial competitiveness and national sustainability.

The Path Forward

Addressing these challenges requires an integrated and multi-stakeholder approach. The path forward must be framed around five interrelated strategies.

1. Curriculum–Industry Synergy Framework; A dynamic curriculum-industry synergy model should be institutionalised across higher education. This model would involve periodic industry–academia roundtables, sectoral needs analyses, and joint development of competency matrices. For instance, Delta State University could partner with chambers of commerce, SMEs, and multinational firms in the Niger Delta region to identify local industrial needs and integrate them into business education modules.

2. National Digital Skills and Entrepreneurship Agenda; Nigeria’s industrial sustainability depends on building a digitally literate workforce. Business education must be repositioned to function as the national hub for digital entrepreneurship training. Government and universities should establish “innovation hubs” and business incubators within faculties of business education to support experiential learning. Policies should also mandate compulsory short courses in digital marketing, data analytics, and financial technology for all business students (World Economic Forum, 2023).

3. Strengthening Teacher Competence and Industry Exposure; No reform succeeds without competent educators. Policies should make it mandatory for business educators to undergo periodic industry internships and certification in emerging technologies. This exposure will not only refresh their practical skills but also enhance the relevance of classroom instruction (Ogunode et al., 2024). Institutions should also collaborate internationally to attract guest lecturers from industry and organise continuous professional learning communities.

4. Institutionalising Research–Policy–Practice Linkages; Research in business education should directly inform policy decisions and industrial practices. Government funding agencies should prioritise applied research that explores how business graduates contribute to innovation, productivity, and sustainability. Establishing policy research centres within universities can strengthen this link, ensuring that policy is evidence-based and locally relevant (Ezeani, 2022).

5. Promoting Sustainable Partnerships and International Benchmarking; Finally, Nigeria must benchmark its business education policies and standards against global best practices. Successful models such as the German dual system of vocational training, Finland’s competency-based learning, and the UK’s employer-led apprenticeship schemes can provide valuable templates. Strategic alliances with international universities and development partners can facilitate staff exchange, joint research, and quality assurance processes (UNESCO, 2024).

Conclusion

The persistent skill gap between business education graduates and industrial needs remains one of the most pressing challenges facing developing economies such as Nigeria. The argument developed in this paper has consistently shown that while the quantity of graduates continues to rise, the quality and relevance of their skills lag behind the demands of an increasingly digital, innovation-driven, and sustainability-conscious industrial sector. This mismatch threatens not only employability but also broader goals of national sustainability and economic transformation. Business education, when properly designed, is an indispensable engine for developing managerial, entrepreneurial, and adaptive capacities within a nation’s workforce. However, as demonstrated in the preceding sections, many institutions remain constrained by outdated curricula, theoretical teaching methods, and insufficient industry collaboration (Adebayo & Jimoh, 2023; Ezeani, 2022). The industrial revolution underway driven by artificial intelligence, data analytics, automation, and green innovation



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requires a redefinition of what it means to be “business-educated.” Graduates must not only understand accounting and management theories but also possess competencies in digital tools, sustainable business models, and innovation management (World Economic Forum, 2023). The transformation of business education is not only a question of employability but a moral imperative for national sustainability. A country’s future productivity, inclusivity, and environmental responsibility are inseparable from the skills and values embedded in its educational systems. Hence, repositioning business education to close the skill gap represents both an economic necessity and a developmental opportunity.

Suggestions

Building on the preceding analysis, this paper offers the following Suggestions targeted at policymakers, academia, industry, and development partners:

- 1. Policy Reorientation and Curriculum Redesign;** The Federal Ministry of Education, in collaboration with the NUC and NBTE, should overhaul business education curricula using a competency-based and outcome-oriented framework. Curricula must integrate digital literacy, sustainability management, entrepreneurial innovation, and industry exposure as core components (Okoye & Onyekwere, 2022). Periodic curriculum reviews every three to five years should be mandated to reflect industrial dynamics.
- 2. Establishment of Business–Industry Collaboration Councils;** Each university should institutionalise Business–Industry Collaboration Councils (BICCs) to strengthen the feedback mechanism between educators and employers. These councils can coordinate internships, case study development, and curriculum evaluation. Partnerships with industrial clusters, SMEs, and multinational corporations should be formalised through Memoranda of Understanding (Adebayo & Jimoh, 2023).
- 3. Digital Infrastructure and Experiential Learning;** Government and private sector investments should prioritise digital transformation within faculties of business education. Modern laboratories, simulation centres, and innovation hubs must be established to facilitate experiential learning. Students should be required to complete industry-based digital projects, not just written dissertations. Development partners such as UNESCO and the World Bank can support this through grants and technical assistance (World Bank, 2025; UNESCO, 2024).
- 4. Teacher Capacity Development;** Continuous professional development for business educators is essential. Lecturers should undergo industry internships and digital skill certification to remain current with technological and industrial trends (Ogunode et al., 2024). Incentives such as research grants, international fellowships, and industry secondments should be embedded in higher education policy.
- 5. Entrepreneurship and Employability Integration;** Universities should embed entrepreneurship and employability modules across all business courses. Such modules should focus on innovation, business start-up processes, sustainability leadership, and ethical entrepreneurship. A functional entrepreneurship incubation centre should exist within every business education faculty to provide mentoring and access to funding networks (Ezeani, 2022).
- 6. Monitoring, Evaluation, and Graduate Tracer Studies;** A comprehensive national framework should be developed for tracking graduate employability, employer satisfaction, and skills utilisation. The National Bureau of Statistics (NBS) can collaborate with educational institutions to generate annual Graduate Employability Reports. The findings should inform future curriculum reforms and funding allocations.
- 7. Incentivising Private Sector Investment;** Government policy should introduce **tax rebates and recognition awards** for industries that invest in training, curriculum development, or research collaboration with universities. This will foster a mutually beneficial ecosystem where private firms view educational investment as strategic rather than philanthropic (World Economic Forum, 2023).
- 8. Embracing Sustainability-Oriented Education;** Business education must embed sustainability consciousness as a transversal skill across all courses. Students should be equipped to manage sustainable supply chains, evaluate ESG (Environmental, Social, and Governance) impacts, and develop green innovations. Integrating the United Nations’ SDGs into business education ensures alignment with global sustainability imperatives (UNESCO, 2024).

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Assessment on Errors and Misconceptions in Solving Algebraic Word Problems among Senior Secondary Schools Students in Sokoto State, Nigeria

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Abstract

This study assessed the errors and misconceptions in solving algebraic word problems among senior secondary schools students in sokoto state, Nigeria. The purpose of the research was to identify the categories of errors and explore the misconceptions made by senior secondary school students in solving algebraic word problems in Sokoto State, Nigeria. A descriptive survey research design was adopted using mixed method which is characterized by the collection and analysis of quantitative data followed by the collection and analysis of qualitative data. Data were collected from a sample of 378 Students which selected based on the total number of 32,298 SSII students in the 142 public senior secondary schools across the six education zones in the State using stratified random sampling. Two research instruments, Students Algebraic Word Problem Errors Test (SAWPET) was administered for quantitative data collection and Students Algebraic Word Problem Interview Protocol (SAWPIP) for qualitative data collection were used to gather data. The reliability coefficients of SAWPET and SAWPIP were 0.82 and 0.86 respectively. Data collected were analyzed using descriptive statistics and thematic content analysis. The major findings of this study includes: Most of the students had difficulties in understanding algebraic word problems and Most of the errors committed by students are not ordinary errors rather are misconceptions. Based on these findings it was recommended that Mathematics teachers should involved their students in activities that will aid their learning and thinking process. These will make students to be conscious of the various Algebraic word problems and improve to overcome their errors and misconceptions.

Keywords: Algebraic Word Problems, Errors, Misconceptions, Algebra.

Introduction

Algebra is a fundamental branch of Mathematics that plays a crucial role in developing students' logical thinking and problem-solving skills. Algebra as a Mathematics content domain has been recognized as a key for successful functioning of all aspects of human endeavor and that no country can achieve any development of scientific and technological advancement without it. Algebraic word problems are verbal descriptions of problem situations in which the questions can be answered by the application of mathematical operations to numerical data contained in the description of the problem (Iilonga & ogbonnaya, 2023). Algebra is found in many areas of life and one of the most important areas of senior secondary school Mathematics. But, despite of its importance, students find it difficult to understand simple algebraic concepts such as variables, expressions, and equivalence. Although, basic algebraic concepts are introduced at the elementary and high school levels, some students have difficulties in understanding algebra because they find it more abstract than any other field of Mathematics (Few, 2010). It is argued that word problems have traditionally been difficult to many Algebra students. The primary source of difficulty for students in solving algebraic word problems is translating the story in to appropriate algebraic expressions (Rojano and Puig, 2007). However, Bishop (2008), further claimed that students' difficulties in translating from natural language to Algebra and vice versa is one of the situations that generally for the students.

An error is the deviation from a correct solution of a problem as contextualized in Mathematics. Errors could be found as a wrongly answered problems which have flaws in the process that generated answers (Stemele & Jina Asvat, 2024). Mathematics teachers can directly teach the correct procedure for solving and doing Mathematics correctly. While, there are common errors that students made with performing algebraic processes, students may demonstrate errors that are individual specific (Akissani, Kajuru, Falalu & Aliyu, 2025). Error for inability in understanding the word problem is that



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students simply understand the problem but do not actually capture the information contained in the question (Haerani, Novianingsih & Turmudi, 2021; Wijaya et, al., 2014) so that the student cannot process further solution from the problem. Thus, Abdullah, Abidin, and Ali (2015) stated errors of understanding or comprehension errors occurs when students can read questions but fail to understand what is asked and needed. Whereas, some other students comprehend algebraic word problems as a substitute for something whose value is unknown (Haerani, Novianingsih & Turmudi, 2021). Students who fail to master the necessary skills and ideas at any level of learning, can influence their achievement at the next level. Hence, it is vital for a teacher to make an assessment of teaching and learning in the classroom and try to identify the difficulties and errors that are often experienced by students.

Misconception on the other hand, is a view or opinion that is incorrect based on faulty thinking or understanding of mathematical concepts. The word misconceptions is an idea that is wrong because it is based on a failure to understand a concepts. (Obunge & Adolphus, 2024; Pramesti & Retnawati, 2019; Tekin-Sitrava, 2017). Similarly, misconception indicates a person's wrong understanding, and it occurs repeatedly because it is resistant and can produce wrong results (Tooher & Johnson, 2020). In view of this, the present study deemed it necessary to investigate students' errors and misconceptions which need to provide clear a explanation about the state of situation in Sokoto state, for better selection of an appropriate approach to minimize the problem for better learning outcomes and improve algebraic thinking ability of the learners.

Statement of the Problem

Algebra is found in many areas of solving certain types of everyday life problems and one of the most important component of senior secondary school mathematics. But, despite of the importance of mathematics to nation building, scientific and technological development, it is still notable that students performance in mathematics at internal and external examinations has remained considerably poor and some of the reasons for students' poor performance of Mathematics in secondary schools are lack of understanding of some difficult Algebraic topics in mathematics Curriculum. Over the years, the West African Examinations Council (WAEC) Chief Examiners' reports on Mathematics in Nigeria observed that candidates continue to perform poorly in questions involving algebraic word problems. Consequently, students' errors and misconceptions made by students in solving algebraic word problems are the major identified problems in Sokoto State (Inweregubuh, 2018). Due to the above problems of Students poor performance in Algebra and limited research-based evidence in Sokoto State make the researcher of this study to investigate the Errors and Misconceptions Students' committed in solving algebraic word problems.

Objectives of the Study

This study have the following objectives:

1. To identify the categories of Errors made by Senior Secondary School Students in solving Algebraic word problems in Sokoto State, Nigeria.
2. To explore the Misconceptions made by Senior Secondary School Students in solving Algebraic word problems in Sokoto State, Nigeria.

Research Questions

The following research questions guided this study:

1. What are the categories of errors made by senior secondary school students in solving Algebraic word problems in Sokoto State, Nigeria?
2. What are the misconceptions made by senior secondary school students in solving Algebraic word problems in Sokoto State, Nigeria?

Methodology

This study employed a descriptive survey research design using mixed method which is characterized by the collection and analysis of quantitative data followed by the collection and analysis of qualitative data. The population of this study comprised all the 32,239 students from the 142 public senior secondary schools II in Sokoto State. However, the samples size of 378 Students were selected using the table for determining sample size from given population. The instrument for data collection used in this study consists of two different types of instruments. namely, Students Algebraic Errors Test (SAET) were used to collected quantitative data. The qualitative instrument, algebraic misconceptions interview

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questionnaire (AMIQ) was used to explore students' misconception based on their answers obtained from the quantitative part. The purpose of interviewing is to enable the respondents to spell out their understanding of the concept (Best and Kahn, 2012). The interview was conducted two weeks after the test, and two (2) students were interviewed from selected school to identify their Misconceptions on the concept. The interview lasted between 20 to 30 minutes. Voice-recorder via the smart phone were use and later transcribed. The instrument was validated by experts and the reliability coefficients of SAET and AMID were obtained as 0.82 and 0.86 respectively. Data collected were analyzed using descriptive statistics and thematic content analysis.

Presentation of Results

The results were presented based on the research questions as follows:

Research Question One:

What are the categories of Errors made by Senior Secondary School Students in solving Algebraic Word Problems?

Based on the analysis of the students' worksheet, the category of errors identified are presented in Table 1 below.

Table 1 Categories of Errors in solving Algebraic Word Problems.

S/N	Type of Errors	Number of Participants	Number of Incorrect Answers	Percentage (%)
1	Inability in understanding the problem	378	132	35
2	Incomplete Solution.	378	55	14
3	Mistake made in solution by calculation or notation.	378	72	19
4	Inability to Formulate Equation.	378	32	8
5	Guessing Without Reasoning	378	203	54
6	Difficulty in Checking the Solution.	378	12	3

Table 1 shows that the most high incorrect answer of errors in solving algebraic word problems is guessing without reasoning 203(54%) which indicated that students may not fully understand the concept of algebraic word problems by just guessing the answers without making any process or calculations. The second most common error 132(35%) is inability in understanding the problem; mistake made in solution by calculation or notation 72(19%). These errors indicated that students struggles with difficulties in solving algebraic word problems which is also fundamental concept in Algebra. Other errors included the incomplete solution 55(14%), inability to formulate equation 32(8%) and difficulty in checking the solution 12(3%). These identified errors reveals that students might not have a solid foundation in algebraic concepts and might struggle with applying them to solve problems related to word problems. As such, the types of categories of errors were shown in the Figure 1 below that provides a sample of students' scripts and their errors in understanding of algebraic word problems.

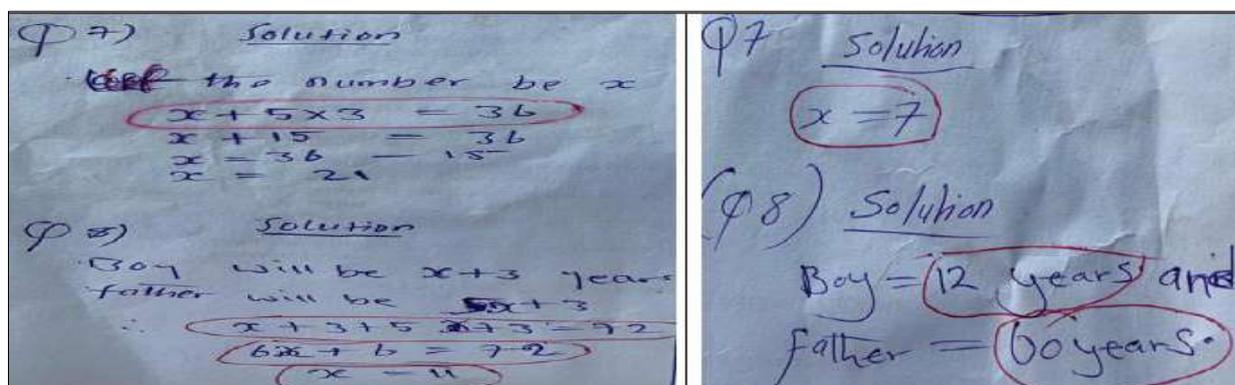


Figure 1: Sample of Students Scripts based on question 7 and 8.

Figure 1 above, provide a sample of students scripts and their errors in solving algebraic word problems. it can be observed that students guessed without reasoning in solving questions of algebraic word problems. Many of the students solved the question by guessing the answer as $x=7$ as well as guessing that the Boy=12ys and father=60ys which was categorised as guessing without reasoning. However, another error which students committed on this question was inability in



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understanding the problem, where some students found it difficult to comprehend the problems in question 7 and 8. Incomplete solution was one of the identified errors in algebraic word problems where some students found it difficult to complete their solution process in solving questions related to word problem.

Below in the Table 2 shows the percentages and mean percentage of incorrect responses for algebraic word problems.

Table 2 Percentages and Average percentage of incorrect responses on Algebraic word problems

Question Number	Number of respondents	Number of Incorrect Responses	Percentage (%)	Average percentage
7	378	254	67	76
8	378	323	85	

Table 2 presented the percentages and average percentage of incorrect responses for algebraic word problems. The Table revealed that 76% of the respondents out of 378, answered the questions incorrect in solving questions related to algebraic word problems.

Research Question Two

What are the Misconceptions made by Senior Secondary School Students in Solving Algebraic Word Problems?

To answer the research question 2. The data was obtained in two ways such as students' answers to the test, and interviews with the two students (S_1 and S_2) were R stands for researcher while S stands for the student who was the interviewee. The sub-section below analysed the interview transcript of S_1

Interview transcript with the S_1 .

S_1 had some misconceptions in solving algebraic word problems by answering question 7 which given as: Think of a number, add 5 to it and multiply the result by 3, the answer is 36. What is the number?. S_1 responded to this question as: $X+5 \times 3 = 36$, $X+15=36$, $x=21$. as seen in figure 2 below.

Figure 2: Extract of S_1 Question 7.

Figure 2 extracted from S_1 . The answer given in the transcripts was by far contrary to the expected answer. The interview was carried out in order to find out about the S_1 understanding about the algebraic word problems. The following shows the interview questions and responses with the S_1 and the researcher: R: Can you work out Question 7?; S_1 : Yes sir.; R: Okey, go ahead.; S_1 : Let the number be X, add 5 to it is $X + 5$, multiply the result by 3 will be $x + 5 \times 3$ the answer is 36 will be $x + 5 \times 3 = 36$, then, multiply 5 by 3 gives 15 ie $x + 15 = 36$.; R: Yes you try but the question says multiply the result by 3 while you multiply 5 by 3, Do you mean 5 is the result?; S_1 : No sir, the result is $x + 5$ but the multiplication affected only 5; R: Okey, which notation do you think, when use it, the multiplication will affect all the result?; S_1 : I don't know sir.; R: Is it not bracket?; S_1 : I am not sure.; R: Okey, try it and see.; S_1 : $(x + 5)3 = 3x + 15$. Yes sir it worked.; R: Could your answer still be $x = 21$?; S_1 : No sir.; R: Okey, work it again.; S_1 : $3x + 15 = 36$, $3x = 36 - 15$, $3x = 21$, $x = \frac{21}{3}$, $x = 7$.; R: Good, which answer is the best for you? $x = 7$ or $x = 21$?; S_1 : $x = 7$.; The S_1 answer shows that there is lack of understanding the concepts of bracket and other operations (multiplication and addition) by not perceiving the correct affectation of bracket and multiplication.

Interview transcript with S_2

The S_2 had some misconceptions in solving algebraic word problems by answering question 7 which given as: Think of a number, add 5 to it and multiply the result by 3, the answer is 36. What is the number?. S_2 responded to this question as: $X = 3$, $X = 7$ and in question 8 answered boy = 12 and father = 60 without any calculation. as seen in figure 3 below.

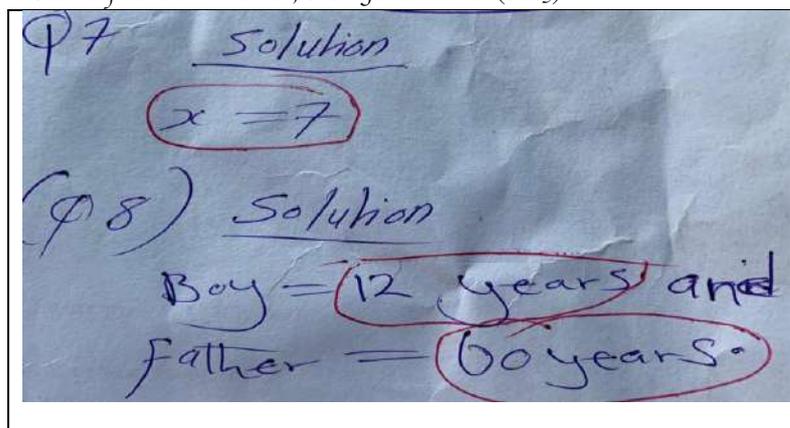


Figure 2: Extract of S₂ Question 7 & 8.

The researcher decided to interview S₂ in order to find out more from the misconceptions. The following shows the interview questions and responses with the S₂ and the researcher: R: Can you work out Question 7 & 8?; S₂: Yes sir.; R: Okey, go ahead.; S₂: Q7. X=7, Q8. Boy is 12 years and his father is 60 years.; R: How did you get the answer?; S₂: I just guest answer; R: I you sure the answer is correct?.; S₂: No but I expect it to be correct.; The S₂ answer shows that there is lack of understanding the concepts and procedure of solving algebraic word problems by just posting and guessing the answer without any calculations.

Discussion of Findings

The findings of this were discussed based on the identified categories of errors related to understanding of algebraic word problems. The inability in understanding the problem was observed when 67% in Q7 and 85% in Q8 of the students found it difficult to comprehend the problems as their answers was 'I don't know and I don't understand'. In the past, many empirical studies indicated that students face difficulties in translating algebra word Problems that found that the error made by students were including the aspects of comprehension error for the inability to understand the algebraic word problems. This finding emphasized previous researches (Haerani, Novianingsih & Turmudi, 2021; Ogbu, 2025; Wijaya et al., 2014) that comprehension errors and guessing, difficulty in checking the solutions are the most dominant errors made by students in solving word problems. This is supported by the statements of Abdullah, Abidin, and Ali (2015) that errors of understanding occur when students can read questions but fail to understand what is asked and needed that lead to incomplete solution of the questions.

Lastly, students' difficulty to checked their solution process to actualized the correct answer in solving questions related to word problem as some of their final answers were wrong or committed a small mistake at the middle of the process which is very easy to identify and corrected if proper checked. To address this, Bishop, Filloy and Puig (2008) claimed that students' misconceptions in translating from natural language to algebra and vice versa. He further said that students found it difficult to complete their solution process in solving question related to word problem as their answers was incomplete when some students terminated the process somewhere in the middle without reaching the final answer and probably they may not know how to proceed further.

Conclusion

It appears from the discussion of the students' responses found comprehension error for the inability to understand the algebraic word problems and their difficulties to complete their solution process in solving question related to word problem as their answers was incomplete when some students terminated the process somewhere about reaching the final answer and probably they may not know how to proceed further. Also, it has been observed that the students' inability to do word problems is affected by their inability to comprehend the problem at the first place, this discourages them from further attempting to solve the problem.

Recommendations

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



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1. It is recommended that teachers should involve their students in activities that will aid their learning and thinking process. These will make students to be conscious of the various Algebraic concepts and improve to overcome their errors and misconceptions.
2. It is recommended that the curriculum implementers who Prepare teachers for pre-service and in-service training should lay emphasis on best teaching method so as for the students to overcome all these Errors and Misconceptions.

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Assessment of Online Information Service Delivery among Postgraduate Students in Ahmadu Bello University, Zaria, Kaduna State, Nigeria

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Abstract

This study investigated the information needs of postgraduate students and challenges faced in using online databases at Ahmadu Bello University, Zaria. The study has two objectives which are; to identify the information need of postgraduate students in Ahmadu Bello University, Zaria, and to find out the challenges faced by postgraduate students in using online databases. Quantitative research methodology and survey research design were used for the study. The population of the study comprised of two faculties of Ahmadu Bello University Zaria which are Faculty of Education and Social Science, the Postgraduate students in the faculties were two thousand six hundred and seventy (2,670). The sample size of the study is 134 which is 5% of 2670 as opined by Yount (2006). Questionnaire was used as the instrument for data collection. The data collected was analyzed and interpreted using frequency tables and simple percentage. The study revealed that academic information (93.9%) represents significant secondary needs. The analysis identified skill-related challenges as the most significant barriers to effective database usage, with lack of skills (92.9%), and search confusion (91.8%), dominating the obstacles faced by students. The study concludes that postgraduate students require diverse information sources beyond academic materials, and their ability to utilize electronic resources is constrained by skill deficits rather than technological limitations. The research recommends implementing comprehensive information literacy programs and adopting diversified resource management strategies to bridge identified gaps and enhance research productivity among postgraduate students.

Keywords: Ahmadu Bello University, Database, Information Demands, Postgraduate, Obstacles, Usage

Introduction

The digital transformation of higher education has fundamentally altered how postgraduate students access, process, and utilize information resources in their academic endeavors. As universities increasingly adopt electronic databases and digital libraries as primary information sources, postgraduate students face unprecedented challenges in navigating these sophisticated information systems while simultaneously experiencing heightened information demands for their research activities (Majid & Eisenschitz, 2010). The complexity of postgraduate research requires students to access diverse, high-quality, and current information sources that can only be effectively obtained through comprehensive database systems and digital repositories. Ahmadu Bello University (ABU), Zaria, as one of Nigeria's premier institutions of higher learning, has invested substantially in electronic database subscriptions and digital information infrastructure to support advanced academic research. However, the mere availability of these resources does not guarantee effective utilization by postgraduate students, who often encounter multifaceted obstacles ranging from technical challenges to inadequate information literacy skills (Adeleke & Nwalo, 2017). The gap between information provision and effective utilization represents a critical challenge that can significantly impact the quality of postgraduate research outcomes and academic



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productivity. Understanding postgraduate information needs is crucial for developing targeted interventions that can bridge existing knowledge gaps and enhance research effectiveness. Information needs of postgraduate students are typically characterized by their complexity, specificity, and interdisciplinary nature, requiring sophisticated search strategies and access to multiple database platforms (Catalano, 2013). These needs evolve continuously throughout the research process, from initial literature exploration to detailed analysis and synthesis, demanding adaptive information-seeking behaviors and advanced database navigation skills. The significance of addressing database usage obstacles extends beyond individual student success to institutional research productivity and knowledge creation capacity. When postgraduate students cannot effectively access and utilize available information resources, the quality of their research suffers, potentially leading to inadequate literature reviews, methodological limitations, and reduced contribution to knowledge advancement (Bhatti, 2010). Furthermore, underutilization of expensive database subscriptions represents a significant waste of institutional resources and missed opportunities for research excellence.

Statement of the Problem

In an optimal academic environment, postgraduate students should possess comprehensive information literacy skills and have seamless access to relevant databases that fully support their research endeavors. Ideally, these students would demonstrate proficiency in identifying appropriate information sources, formulating effective search strategies, and efficiently navigating multiple database platforms to retrieve high-quality, current, and relevant information for their research projects (Association of College and Research Libraries, 2016). The ideal situation would feature well-trained students who can independently assess information quality, synthesize findings from diverse sources, and effectively manage their information resources throughout the research process. Additionally, institutions should provide robust technical infrastructure, comprehensive training programs, and ongoing support systems that enable students to maximize their utilization of available information resources (Ukachi, 2015). Despite significant investments in electronic database subscriptions and digital information infrastructure, there remains a substantial gap in understanding the specific information needs of postgraduate students at Ahmadu Bello University and the particular challenges they encounter when attempting to utilize available database resources. Existing literature on information needs and database usage has predominantly focused on undergraduate populations or has been conducted in different geographical and institutional contexts, limiting the applicability of findings to the specific circumstances of Nigerian postgraduate students. Furthermore, there is insufficient empirical evidence regarding the correlation between information needs identification and database usage challenges, particularly in the context of developing countries where technological infrastructure and information literacy levels may differ significantly from those in developed nations. Failure to address the information needs and database usage challenges of postgraduate students at Ahmadu Bello University will result in several detrimental consequences for both individual students and the institution as a whole. Students will continue to produce research of suboptimal quality due to inadequate access to relevant information sources, potentially leading to flawed literature reviews, inappropriate methodological choices, and limited contribution to knowledge advancement in their respective fields. The institution will experience reduced research productivity, decreased international visibility, and poor return on investment for expensive database subscriptions, ultimately compromising its reputation as a leading center for postgraduate education and research in Nigeria and beyond.

Objectives of the Study

The study focused on the following objectives

1. To identify the information need of postgraduate students in Ahmadu Bello University, Zaria.
2. To find out the challenges faced by postgraduate students in using online databases.

Literature Review

Information Needs of Postgraduate Students

The information needs of postgraduate students have been extensively studied across various academic disciplines and institutional contexts, revealing consistent patterns of complexity and specificity that distinguish them from undergraduate information requirements. Wilson's (2000) seminal work on information behavior established that postgraduate student exhibit sophisticated information needs characterized by their depth, interdisciplinary nature, and evolution throughout the research process. These students typically require access to current research findings, theoretical frameworks, methodological guidance, and empirical data that can support their original research contributions. The dynamic nature of



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postgraduate information needs reflects the iterative process of research development, where initial broad exploratory needs gradually narrow to highly specific requirements as research questions become more focused and methodologies are refined. Research conducted by Catalano (2013) demonstrated that postgraduate students' information needs are significantly influenced by their research methodology, disciplinary background, and stage of study. Students in the early stages of their programs tend to have broad, exploratory information needs focused on understanding their research domain and identifying potential research gaps. As they progress through their studies, their information needs become increasingly specific, requiring access to highly specialized resources, recent publications, and detailed methodological guidance. The study also revealed that postgraduate students require not only access to information but also guidance on information evaluation, synthesis, and integration into their research frameworks. The cultural and contextual factors influencing postgraduate information needs have been highlighted in studies conducted in developing countries. Onwuegbzie and Jiao (2004) found that postgraduate students in resource-constrained environments often develop adaptive information-seeking behaviors that compensate for limited access to comprehensive information resources. These students may rely more heavily on interpersonal sources, local publications, and alternative information channels when traditional academic databases are unavailable or difficult to access. However, this adaptation can potentially limit the scope and quality of their research if not properly supported by institutional interventions. Contemporary research has emphasized the increasing importance of digital literacy and technological competence in meeting postgraduate information needs. Madhusudhan (2010) argued that modern postgraduate students require not only traditional information literacy skills but also advanced digital competencies that enable them to navigate complex database interfaces, utilize sophisticated search features, and manage large volumes of electronic information effectively. The integration of emerging technologies such as artificial intelligence, machine learning, and automated research tools has further complicated the information landscape, requiring students to develop new skills and adapt their information-seeking strategies accordingly. The interdisciplinary nature of many postgraduate research projects has created additional complexity in information needs assessment and fulfillment. Students working on interdisciplinary topics often require access to information sources across multiple domains, necessitating familiarity with diverse database platforms, terminologies, and research methodologies (Zhang & Salaba, 2012). This complexity is particularly pronounced in emerging research areas where traditional disciplinary boundaries are blurred, requiring students to develop sophisticated information synthesis skills and access to comprehensive, multidisciplinary information resources.

Challenges in Online Database Usage

The challenges faced by postgraduate students in utilizing online databases represent a multifaceted problem that encompasses technical, cognitive, and institutional dimensions. Tenopir et al. (2009) identified several categories of database usage challenges, including interface complexity, search strategy formulation difficulties, information overload, and inadequate training support. Technical challenges often stem from poorly designed user interfaces that fail to accommodate diverse user needs and varying levels of technical expertise. Many database platforms prioritize comprehensive functionality over user-friendly design, resulting in complex navigation systems that can overwhelm users and impede efficient information retrieval. Cognitive challenges in database usage are particularly pronounced among postgraduate students who must develop sophisticated search strategies while simultaneously managing complex research projects. Research by Jiao and Onwuegbuzie (2001) revealed that many postgraduate students experience significant anxiety when confronting unfamiliar database interfaces, leading to suboptimal search behaviors and incomplete information retrieval. The cognitive load associated with learning multiple database systems, each with unique search syntaxes and organizational structures, can overwhelm students and result in superficial or ineffective use of available resources. Furthermore, the lack of immediate feedback and guidance within database systems can perpetuate ineffective search strategies and reinforce poor information-seeking habits.

Institutional challenges play a crucial role in determining the effectiveness of database usage among postgraduate students. Okello-Obura and Magara (2008) highlighted how inadequate training programs, limited technical support, and insufficient access to computing facilities can significantly impede database utilization. Many institutions provide minimal orientation to database resources, assuming that students will independently develop necessary skills through trial and error. This approach often results in persistent knowledge gaps and suboptimal utilization of expensive database subscriptions. Additionally, technical infrastructure limitations, including unreliable internet connectivity and outdated computer



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systems, can create significant barriers to effective database usage, particularly in developing country contexts. The specific challenges faced by postgraduate students in African universities have been documented in several studies that highlight unique contextual factors. Nhlapo (2015) found that students in South African universities frequently encountered challenges related to limited off-campus access to databases, inadequate training in advanced search techniques, and insufficient integration of database usage into curriculum design. Similar patterns have been observed in other African contexts, where postgraduate students often rely on basic search strategies and fail to utilize advanced database features that could significantly enhance their research efficiency and effectiveness. Recent studies have identified emerging challenges related to the proliferation of database platforms and the increasing complexity of academic information landscapes. Gul et al. (2019) argued that the multiplication of database options, while increasing access to information, has also created new challenges for students who must navigate multiple platforms with varying interfaces, search syntaxes, and organizational structures. The lack of standardization across database platforms means that students must invest significant time and effort in learning system-specific procedures, often without adequate institutional support or training resources. This complexity is compounded by the rapid evolution of database technologies, which requires continuous learning and adaptation by both students and support staff.

Methodology

Quantitative research methodology was adopted and survey research design was used for the study. The population of this study comprised of two (2) faculties of Ahmadu Bello University Zaria which include Faculty of Education and Social Science, and the PG students in the faculties were two thousand six hundred and seventy (2,670). These two faculties were selected because of the large population of the university as a whole and time will not permit. The total sample size for the two faculties is 134 which 5% of 2670 as opined by Yount (2006). Questionnaire was used as the instrument for data collection. The data collected was analyzed and interpreted using frequency tables and simple percentage.

Presentation of Result

Table 1: What are the Information Needs of Postgraduate Students in Ahmadu Bello University, Zaria?

S/N	Information Need	Frequency	Percentage (%)
1.	Academic Information	92	93.9
2.	Research material	72	73.5
3.	Information on Entertainment and Jokes	68	69.4
4.	Health Information	48	49.0
5.	Fashion Information	45	45.9
6.	Job related and Vacancy information	13	13.3
7.	Cultural Information	17	17.3
8.	Multi-Lingual Information resources	7	7.1
9.	Current News	62	63.3
10.	Useful Library instructions	23	23.5
11.	Political Information	51	52.0
12.	Financial Information	40	40.8
13.	Environmental Information	14	14.3

Source: *Field work (2024)*

The analysis of postgraduate information needs at Ahmadu Bello University reveals that academic information constitutes the most critical requirement among students, with 92 respondents (93.9%) identifying this as their primary information need. This was followed by research material with 72 respondents (73.5%), indicating the fundamental role of scholarly resources in postgraduate studies. Surprisingly, information on entertainment and jokes ranked third with 68 respondents (69.4%), suggesting that postgraduate students seek recreational content alongside academic resources. Current news followed with 62 respondents (63.3%), while political information was sought by 51 respondents (52.0%). Health information needs were identified by 48 respondents (49.0%), and fashion information by 45 respondents (45.9%). Financial information was required by 40 respondents (40.8%), while useful library instructions were needed by only 23 respondents (23.5%). Cultural information was sought by 17 respondents (17.3%), environmental information by 14 respondents (14.3%), job-related and vacancy information by 13 respondents (13.3%), and multi-lingual information resources by the least number of respondents at 7 (7.1%).



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The findings reveal that academic information and research materials dominate postgraduate information needs, which aligns with the primary purpose of postgraduate education. However, the high percentage of students seeking entertainment content suggests that postgraduate students require diverse information sources beyond academic materials for holistic development and stress relief. The relatively low demand for job-related information and multi-lingual resources may indicate that students are primarily focused on completing their studies rather than immediate career transitions, while the linguistic homogeneity of the student population reduces the need for multi-lingual resources. This finding has significant implications for library resource allocation and service planning, suggesting that while academic resources should remain the priority, libraries should also consider providing diverse information sources to meet the varied needs of postgraduate students.

Table 2: What are the Challenges being faced by Postgraduate Students in Using Online Databases in Ahmadu Bello University, Zaria.

S/N	Challenges	Frequency	Percentage (%)
1.	Lack of skills	91	92.9
2.	Limited space in the library	46	46.9
3.	Poor internet connection on campus	50	51.0
4.	Unreliable power supply when accessing these resources	45	45.9
5.	Lack of time among students	56	57.1
6.	Inadequate and irrelevant library materials	21	21.4
7.	Lack of awareness of existing resources in the library	87	88.8
8.	Confusion over how to begin the search for resources and how to locate materials	90	91.8
9.	Lack of indigenous Nigerian material available online	15	15.3
10.	Library Staff negative attitudes towards their patrons	84	85.7
11.	Lacking training in and knowledge of using e-resources	88	89.8
12.	Information is scattered in too many sources	20	20.4
13.	Library contains outdated information	26	26.5
14.	Unavailability of full-text articles	14	14.3
15.	Lack of full-text access to older journal articles	12	12.2
16.	Difficulties in accessing electronic information from home	23	23.5

Source: *Field work (2024)*

Table 2 presented the analysis of challenges faced by postgraduate students in using electronic information resources reveals that lack of skills represents the most significant barrier, with 91 respondents (92.9%) identifying this as a major challenge. This was closely followed by confusion over how to begin the search for resources and how to locate materials, affecting 90 respondents (91.8%). Lacking training in and knowledge of using e-resources was identified by 88 respondents (89.8%), while lack of awareness of existing resources in the library affected 87 respondents (88.8%). Library staff negative attitudes towards their patrons was reported by 84 respondents (85.7%). Lack of time among students was identified by 56 respondents (57.1%), while poor internet connection on campus affected 50 respondents (51.0%). Limited space in the library was a challenge for 46 respondents (46.9%), and unreliable power supply when accessing these resources affected 45 respondents (45.9%). Library contains outdated information was reported by 26 respondents (26.5%), while difficulties in accessing electronic information from home affected 23 respondents (23.5%). Information scattered in too many sources was identified by 20 respondents (20.4%), inadequate and irrelevant library materials by 21 respondents (21.4%), lack of indigenous Nigerian material available online by 15 respondents (15.3%), unavailability of full-text articles by 14 respondents (14.3%), and lack of full-text access to older journal articles by the least number at 12 respondents (12.2%). The findings indicate that skill-related challenges dominate the obstacles faced by postgraduate students, with lack of skills, search confusion, inadequate training, and lack of awareness representing the four most significant barriers. This pattern suggests that the primary challenge is not infrastructure or resource availability but rather human capacity and competency development. The high percentage of students experiencing these skill-related challenges indicates a systemic failure in information literacy education and user orientation programs. The relatively lower frequency of infrastructure-related



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challenges such as power supply and internet connectivity, while still significant, suggests that technological barriers, though present, are secondary to capacity-building needs. This finding has profound implications for institutional policy and resource allocation, emphasizing the need for comprehensive information literacy programs and user education initiatives rather than solely focusing on technological infrastructure improvements.

Summary of the Findings

The following are the findings of the study:

1. Academic information (93.9%) and research materials (73.5%) constitute the primary information needs of postgraduate students, confirming the scholarly focus of advanced academic programs.
2. The most significant obstacles to effective database usage are skill-related challenges, with lack of skills (92.9%) and search confusion (91.8%) representing the two most prevalent barriers.

Conclusion

The study reveals a complex information landscape at Ahmadu Bello University where postgraduate students exhibit diverse information needs dominated by academic and research requirements but extending to entertainment and current affairs. The research demonstrates that while students have access to electronic databases and information resources, their ability to effectively utilize these resources is severely constrained by skill deficits rather than technological limitations. The predominance of capacity-related challenges over infrastructure barriers suggests that the university's investment in electronic resources will only yield optimal returns when accompanied by comprehensive information literacy programs and sustained user education initiatives.

Recommendations

1. The university administration should establish a mandatory information literacy program coordinated by the library services department in collaboration with academic departments to address the identified skill deficits among postgraduate students, through hands-on training sessions on database navigation, advanced search techniques, and resource evaluation strategies, delivered through a combination of face-to-face workshops, online tutorials, and embedded course instruction throughout the academic year.
2. The library management should implement a balanced collection development policy that recognizes the diverse information needs of postgraduate students by allocating resources not only to academic databases but also to current news platforms, health information resources, and recreational content within appropriate limits. Through regular user needs assessment surveys, collaboration with student representatives in resource selection, and the development of subject-specific resource guides that highlight both academic and supplementary information sources relevant to different disciplines.

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Qualitative Study on Rethinking Liability for Artificial Intelligence Systems Under the Nigerian Jurisprudence and Islamic Legal Ethics View

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Abstract

The rapid integration of Artificial Intelligence (AI) into decision-making processes, from financial services to law enforcement, presents complex challenges regarding accountability and liability. As AI systems increasingly operate with a degree of autonomy, determining who should bear responsibility for harm or error becomes a pressing legal and ethical concern. This paper explores these challenges within the context of Nigerian jurisprudence and Islamic legal ethics, guided by the principles of Maqasid al-Shariah. It examines how conventional legal concepts of human intent and negligence interact with the unique characteristics of algorithmic decision-making, where outcomes may arise from opaque or self-learning processes beyond direct human control. Nigerian law, traditionally rooted in human-centric liability, faces significant gaps in addressing the accountability of autonomous systems. Within this gap, Islamic ethical principles such as Amanah (trust) and Maslahah (public interest) provide a moral framework emphasizing justice, transparency, and societal welfare. The paper proposes a hybrid accountability model that combines statutory responsibility with ethical stewardship, ensuring that innovation aligns with human values and divine justice. However, integrating these legal and ethical perspectives, Nigeria can develop a contextually grounded framework for algorithmic justice one that maintains technological progress while preserving moral integrity and public trust. Ultimately, AI should serve humanity as a tool for equitable development, not as an unregulated force detached from human conscience or accountability.

Keywords: Artificial Intelligence, Liability, Nigerian Law, Maqasid al-Shariah, Accountability,

Introduction

Artificial Intelligence (AI) is a new technology that is created by human effort through creative thinking and innovative idea to enhance the functionality beyond human capacity. The proliferation of Artificial Intelligence (AI) technologies has significantly reshaped governance, business, and social systems in Nigeria and across the world. From automated financial assessments to algorithmic law enforcement, AI systems are redefining how institutions make decisions. However, these advancements also create tension with existing legal doctrines, which are traditionally grounded in human intent and foreseeability (Abiola & Shittu-Adenuga, 2024). The opacity of AI systems particularly those based on deep learning makes it difficult to assign responsibility when harm occurs, creating what scholars refer to as the “accountability gap.” In Nigeria, AI adoption has accelerated across sectors such as fintech, healthcare, education, and public administration. While the Nigeria Data Protection Act (2023) and the National AI Strategy Draft (2024) provide preliminary frameworks, they do not yet define liability for damages caused by autonomous systems. Thus, legal actors still grapple with fundamental questions: Can an algorithm be a subject of law? Who should be responsible when AI malfunctions the programmer, operator, or end user? (Shajobi-Ibikunle & Oseghale, 2025). These uncertainties underscore the need for a legal framework that can reconcile automation with accountability.

The Nigerian legal system largely depends on doctrines of mens rea (guilty mind) and actus reus (guilty act), which assume intentional human behavior. Yet AI lacks consciousness and cannot form intent. Therefore, direct liability cannot be easily established under current jurisprudence. Some scholars suggest applying the principle of vicarious liability holding human actors accountable for harms committed by their algorithms (Richard, 2024). However, this approach raises fairness concerns, especially in cases where the AI evolves beyond the developer’s initial parameters. Ethically, Islamic legal



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philosophy offers valuable insights that complement Nigeria's plural legal system. The Maqasid al-Shariah (higher objectives of Islamic law) provides a framework for aligning technological innovation with moral accountability (Kannike & Fahm, 2023). These objectives protection of faith (din), life (nafs), intellect (aql), lineage (nasl), and property (mal) serve as ethical safeguards ensuring that AI serves human welfare rather than undermining it. Hence, Islamic ethics reject technological determinism and emphasize that moral responsibility always remains human. The concept of Amanah (trust) in Islamic jurisprudence further deepens the accountability discourse. Developers, regulators, and policymakers are entrusted as amin stewards responsible for ensuring transparency, fairness, and justice in technological development. Violations of this trust, such as deploying biased or exploitative algorithms, are not merely regulatory infractions but moral breaches. Thus, Amanah transforms accountability from a procedural obligation into a moral covenant between humans and God. Similarly, Maslahah (public interest) reinforces the principle that AI must contribute positively to human welfare and social justice. An AI system that perpetuates discrimination, violates privacy, or causes economic exclusion contradicts Maslahah and therefore lacks moral legitimacy under Islamic ethics (Ehirim, 2025).

Integrating this principle into Nigerian digital policy could ensure that AI technologies serve societal needs without undermining human dignity. From a jurisprudential perspective, Nigeria can draw from comparative frameworks such as the EU AI Act (2024) and OECD guidelines (2024), which classify AI systems by risk level and assign proportionate liability. Locally, Nigeria's hybrid system of common law and Shariah law provides a unique opportunity to embed ethical oversight into statutory provisions (The Guardian, 2025). By combining legal precision with ethical stewardship, Nigeria could pioneer a "moralized" model of algorithmic regulation. A hybrid accountability model should include three pillars: (a) Legal Liability, defining who bears responsibility for AI-related harm; (b) Ethical Oversight, ensuring human-centric AI development aligned with Maqasid al-Shariah; and (c) Institutional Governance, establishing independent bodies for auditing and certifying AI systems. Together, these measures would strengthen public trust and operational transparency, creating harmony between legal enforceability and moral responsibility. Moreover, education and awareness among developers, judges, and policymakers are crucial. Without understanding AI's technical complexity, legal interpretations will remain reactive rather than proactive. Islamic ethics encourages ijthad reasoned interpretation to respond to emerging challenges. Applying ijthad to AI governance promotes adaptive ethics that remain faithful to divine intent while responsive to technological realities (What Makes Work "Good" in the Age of AI," 2023) Ultimately, Nigeria's approach to AI governance must balance innovation with accountability. By integrating the principles of Amanah, Maslahah, and Maqasid al-Shariah into statutory frameworks, the nation can ensure that AI development promotes justice and human flourishing. Such a model not only addresses the liability void but also embodies a distinctly Nigerian contribution to the global conversation on algorithmic justice—anchoring technology in law, ethics, and divine stewardship.

Statement of algorithmic justice

Algorithmic justice refers to fairness, transparency, and accountability in systems where Artificial Intelligence (AI) significantly influences or determines social, economic, and legal outcomes (Rawlings, 2022). It demands that algorithmic processes respect fundamental human rights, ensure equitable treatment, and provide avenues for explanation when harm or bias occurs. However, the complexity of AI architectures, particularly machine learning and deep learning systems, introduces what is often called the "black box" dilemma models whose inner workings are so opaque that even their creators struggle to fully understand or explain their decisions (Goodman & Flaxman, 2023). This opacity challenges the foundational principles of legal responsibility, which rely on foreseeability and intent.

Internationally, several jurisdictions are advancing toward a structured framework for algorithmic governance. The European Union's AI Act (2024) classifies AI applications based on their potential risk to human rights and public safety, establishing strict obligations for high-risk systems. Similarly, the U.S. Algorithmic Accountability Act (2023) requires transparency audits and impact assessments to ensure fairness and prevent discrimination in automated decision-making (Johnson & Lee, 2024). These legislative measures embody a growing recognition that accountability must evolve in tandem with technological sophistication. In contrast, Nigeria remains in the embryonic stage of AI governance. The National Artificial Intelligence Policy Framework (NITDA, 2024) emphasizes innovation, capacity building, and economic competitiveness but provides limited guidance on ethical responsibility or liability for algorithmic harm. This regulatory gap leaves individuals vulnerable when decisions affecting their rights such as loan approvals, job recruitment, or predictive



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policing are made by unexplainable AI systems. Moreover, without clear mechanisms for redress, such opacity can undermine trust in technology and institutions alike. Islamic jurisprudence offers a valuable complementary framework to address these ethical deficits. The Maqasid al-Shariah emphasizes justice (adl), trust (amanah), and public welfare (maslahah), all of which are essential for ensuring algorithmic accountability. Embedding these principles within Nigeria's emerging AI governance could ensure that technological advancement aligns with moral and social responsibility. In this sense, the pursuit of algorithmic justice becomes both a legal imperative and a spiritual duty, reflecting a commitment to fairness, transparency, and divine trust in the age of automation.

Challenges militating the establishing liability under Nigerian law

Under Nigerian law, liability traditionally rests upon two foundational pillars: actus reus (the wrongful act) and mens rea (the guilty mind). These concepts, inherited from English common law, are predicated on the assumption of human consciousness, volition, and intent (Okonkwo, 2023). The legal system presumes that a person must have both committed an unlawful act and possessed the requisite guilty intent to be held responsible. However, this anthropocentric framework faces profound difficulty when applied to Artificial Intelligence (AI) systems, which can act autonomously, learn independently, and make decisions beyond the direct foresight or control of their human operators. The central question thus emerges: can a machine “intend” or “foresee” the consequences of its actions in the legal sense? The issue becomes more complex when AI operates within self-learning or adaptive environments where its outputs evolve over time. In such scenarios, the causal chain between the programmer's input and the system's eventual decision may be attenuated or completely transformed by algorithmic learning. This raises uncertainty as to who, if anyone, bears legal culpability when harm arises. Nigerian law has not yet articulated a doctrine of algorithmic liability, leaving courts and policymakers without a clear roadmap for adjudicating disputes involving autonomous systems (Ojo & Adediran, 2024). Without legislative intervention, such cases risk being forced into ill-fitting traditional categories such as product liability or negligence.

Moreover, the element of mens rea central to criminal liability cannot easily be transposed onto non-sentient entities. AI lacks consciousness, intention, and moral reasoning. Consequently, while a human actor may be prosecuted for negligent design or reckless deployment of an AI system, the machine itself cannot bear responsibility in law (Adewumi, 2025). Some scholars propose a doctrine of vicarious algorithmic liability, whereby the responsibility is shared among designers, deployers, and data custodians, depending on their proximity to the harmful outcome. Others argue for the creation of a sui generis category of “electronic legal personhood,” analogous to corporate liability, though this remains highly controversial and ethically fraught (Rawlings, 2022). From an ethical standpoint, Islamic legal theory offers an alternative lens through the concept of taklif moral and legal responsibility tied to human agency and accountability before God. Since AI lacks ‘aql (rational consciousness) and niyyah (intent), it cannot bear taklif under Shariah principles. Responsibility thus reverts to human actors the creators, owners, and regulators who are entrusted with amanah (trust) to ensure the ethical use of knowledge and technology (Fahm & Kannike, 2023). Hence, both Nigerian jurisprudence and Islamic ethics converge on the premise that ultimate accountability must remain human-centered, even in an age of autonomous machines. Therefore, the challenge for Nigeria's legal system is not to redefine personhood but to recalibrate accountability frameworks. This includes creating statutory presumptions of responsibility for those who design, train, or deploy AI systems, while also embedding ethical safeguards consistent with Maqasid al-Shariah. Such reforms would ensure that liability mechanisms reflect both the realities of emerging technologies and the moral imperatives of justice and trust.

Product liability and negligence

In the absence of comprehensive AI-specific legislation, harm arising from the use or malfunction of Artificial Intelligence (AI) systems in Nigeria must currently be addressed through existing legal doctrines such as product liability and negligence. The Sale of Goods Act of 1893, still influential in Nigerian contract law, establishes an implied warranty that goods sold must be of merchantable quality and fit for their intended purpose. When AI systems are commercialized as products whether embedded in autonomous vehicles, medical diagnostic tools, or financial software the manufacturer or developer may bear responsibility if defects, faulty programming, or inadequate quality control result in harm to users (Ogunleye, 2022). This creates a legal presumption that those who place AI products on the market owe a duty of care to end users. Under tort law, particularly the doctrine of negligence, liability arises when a party fails to exercise reasonable care, resulting in foreseeable harm. In the AI context, negligence could stem from poor design, insufficient testing, lack of algorithmic transparency, or failure to monitor the system's evolving behavior after deployment (Olawale & Adedayo,



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2023). For instance, a fintech company deploying an AI loan assessment tool that discriminates against certain groups could be found negligent if it failed to conduct fairness audits or implement bias mitigation protocols. The duty of care thus extends beyond the physical integrity of products to include algorithmic integrity ensuring that the decision-making process is free from discriminatory or unsafe outputs. However, these traditional legal routes have limitations when applied to autonomous or self-learning systems. The principle of foreseeability, which underpins negligence claims, is strained when an AI's actions cannot be fully predicted by its developers. Similarly, the causal chain required to establish liability becomes diffuse when harm results from machine learning outputs generated without direct human input. Nigerian courts have yet to adjudicate a case involving algorithmic harm, but scholars warn that reliance on outdated doctrines may lead to judicial inconsistency and uncertainty (Ehirim, 2025).

A further complication arises from the intangible nature of AI software, which blurs the distinction between “goods” and “services.” The Sale of Goods Act was never designed to accommodate intangible digital systems capable of independent reasoning. As such, victims of AI-induced harm may find it difficult to claim compensation under the Act unless the courts adopt a purposive interpretation extending its provisions to digital technologies. Some jurisdictions, such as the European Union, have already begun reforming product liability laws to explicitly include software and AI systems as “digital goods” (European Commission, 2024). From an ethical and jurisprudential standpoint, Maqasid al-Shariah and Amanah (trust) reinforce the moral obligation of developers and corporations to prevent harm (darar). Islamic legal theory mandates that creators bear responsibility for the foreseeable consequences of their inventions, even in complex systems. Thus, ethical accountability should accompany legal liability requiring developers to exercise due diligence not only as a matter of compliance but as a moral duty toward justice (adl) and public welfare (maslahah).

Emerging legal recognition of algorithmic accountability in Nigeria

The Nigeria Data Protection Act (NDPA) 2023 represents a landmark in the country's digital governance landscape, introducing explicit principles of accountability, transparency, and data subject rights in automated processing. Although primarily aimed at protecting personal data, the Act implicitly acknowledges the ethical and legal implications of algorithmic decision-making. It grants individuals the right to object to decisions that are made solely through automated means particularly where such decisions significantly affect their rights, freedoms, or legitimate interests (Federal Republic of Nigeria, 2023). This provision marks the first statutory recognition of algorithmic accountability in Nigerian law, signaling an emerging awareness of the challenges posed by Artificial Intelligence (AI) and automated systems. While the NDPA does not directly establish a framework for AI-specific liability, its accountability provisions reflect a gradual evolution toward protecting individuals from opaque and potentially discriminatory algorithmic processes (Adegoke, 2024). The Act mandates data controllers and processors to ensure that automated systems are explainable, fair, and auditable. This aligns with global trends emphasizing algorithmic transparency and the “right to explanation,” as seen in the European Union's General Data Protection Regulation (GDPR) and the EU AI Act (2024). In essence, the Nigerian law acknowledges that algorithmic decisions if left unchecked can reproduce or amplify bias, thus threatening justice and equality before the law.

However, despite its significance, the NDPA's scope remains limited. The right to object applies mainly within data protection contexts and does not extend to broader AI systems that operate outside personal data processing, such as predictive policing or automated judicial tools. Moreover, the Act lacks clear enforcement mechanisms for challenging algorithmic decisions, leaving affected individuals with limited avenues for redress. Legal scholars argue that a comprehensive AI Accountability Act is needed to supplement the NDPA by addressing issues of algorithmic liability, bias mitigation, and ethical oversight (Adewumi, 2025). From an ethical standpoint, the NDPA's principles resonate with Maqasid al-Shariah's commitment to justice (adl), preservation of intellect (hifz al-'aql), and protection of human dignity (karamah). In Islamic jurisprudence, decision-making must always be grounded in fairness, transparency, and accountability values that parallel the NDPA's aim to prevent harm and uphold human rights in the digital sphere. The intersection of these two traditions statutory accountability and divine ethics offers Nigeria a unique pathway for developing a morally informed digital governance framework.



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Ethical foundations of AI accountability in Islamic jurisprudence

Islamic jurisprudence situates moral accountability (taklif) within the realm of human consciousness and free will. Taklif denotes a divine obligation placed only upon beings capable of rational reflection, moral discernment, and volitional action (Kamali, 2023). It assumes an actor's ability to distinguish right from wrong and to act with intention (niyyah). Artificial Intelligence (AI), however, lacks both rational consciousness ('aql) and moral agency (irada), and therefore cannot be the bearer of moral responsibility in Islamic ethics. Responsibility, consequently, rests with the human developers, operators, and regulators who design, deploy, and control AI systems. The Qur'an underscores this principle of informed moral action in Surah Al-Isra (17:36): "And do not pursue that of which you have no knowledge; indeed, the hearing, the sight, and the heart about all those [one] will be questioned." This verse highlights the duty of knowledge-based accountability. Applied to AI, it implies that developers and policymakers must exercise 'ilm (knowledge) and hikmah (wisdom) in ensuring that algorithmic systems operate transparently, justly, and without harm. Failing to ensure informed, ethical design or use of AI systems may constitute a breach of amanah (trust), a grave moral and legal transgression in Islam (Fahm & Kannike, 2023).

Within this ethical framework, the doctrine of Maqasid al-Shariah the higher objectives of Islamic law offers a comprehensive guide for evaluating the moral permissibility of emerging technologies. It identifies five universal values: preservation of faith (din), life (nafs), intellect (aql), lineage (nasl), and property (mal). Any technological development or policy that threatens these objectives undermines the ethical foundation of Shariah. Thus, an AI system that endangers human life through autonomous error, manipulates intellect through misinformation, invades privacy, or disrupts family integrity violates the maqasid and must be regulated or prohibited (Kamali, 2023; AbuSulayman, 2024). This perspective situates AI governance within a framework of ethical stewardship, not merely regulatory compliance. Human actors become khalifah (trustees) on earth responsible for ensuring that technological progress serves maslahah (public welfare) rather than mafsadah (harm or corruption). The principles of adl (justice) and amanah (trust) compel developers to prioritize transparency, fairness, and inclusivity in algorithmic design. In practical terms, this means instituting ethical review boards, ensuring bias-free datasets, and aligning AI applications with humanitarian objectives consistent with maqasid. Consequently, Islamic jurisprudence not only offers a moral compass but also complements secular regulatory models by grounding them in divine accountability. In the Nigerian context where Shariah and statutory law coexist embedding maqasid-based ethics in AI governance could provide a unique normative framework that upholds both constitutional justice and spiritual responsibility. This integration would ensure that technological innovation remains faithful to the dual pursuit of legal certainty and moral virtue.

View of Amanah, Maslahah, and ethical stewardship in AI development

In Islamic jurisprudence, developers, engineers, and policymakers function as amin trustees entrusted by God and society with the responsibility of ensuring that technological innovation promotes justice and prevent harm. The Qur'anic concept of Amanah (trust) denotes a moral and legal obligation to act with transparency, fairness, and integrity in all affairs, particularly when exercising authority or managing public resources (Qur'an 33:72). In the context of Artificial Intelligence (AI), Amanah translates into an ethical imperative to ensure that algorithms are designed, tested, and implemented in ways that uphold human dignity, equity, and accountability. This stewardship requires vigilance against bias, exploitation, or manipulation within algorithmic systems (Fahm, 2023).

The ethical weight of Amanah is intensified by the Islamic legal maxim la darar wa la dirar "there should be neither harm nor reciprocation of harm." Hence, any AI deployment that perpetuates inequality, violates privacy, or endangers lives breaches this foundational principle. As technology mediates governance, finance, and social interaction in Nigeria, policymakers must recognize their dual responsibility as both legal regulators and moral agents. The Amanah entrusted to them is not merely administrative but spiritual, rooted in accountability before God (hisab). Complementing Amanah is the doctrine of Maslahah (public interest), a central tenet of Maqasid al-Shariah. It mandates that all human action especially in governance and innovation must aim to maximize benefit (jalb al-maslahah) and minimize harm (dar' al-mafsadah) to society. According to Al-Qaradawi (2021), technological advancement must be evaluated not solely on efficiency or profit but on its contribution to justice, welfare, and moral order. Thus, deploying opaque, biased, or exploitative AI systems violates the ethical objectives of Shariah, as such technologies undermine social justice (adl) and erode public trust (thiqa).



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Under this ethical model, transparency becomes a religious and moral duty, not just a regulatory requirement. AI systems must be auditable, explainable, and accessible to scrutiny by both experts and the public to prevent injustice and uphold Maslahah. Nigerian policymakers can draw from this principle to strengthen algorithmic oversight frameworks, mandating disclosure of AI decision processes in sensitive domains such as credit scoring, law enforcement, and healthcare. Embedding Amanah and Maslahah into Nigeria's AI governance can transform technology regulation into an ethically informed practice that harmonizes divine accountability with legal responsibility.

Human accountability and the moral limits towards of AI autonomy

From an Islamic ethical standpoint, human beings retain ultimate accountability for the technologies they create and deploy, regardless of the autonomy such systems appear to possess. The Qur'an unequivocally affirms human responsibility for all actions, declaring that "whoever does an atom's weight of good will see it, and whoever does an atom's weight of evil will see it" (Qur'an 99:7-8). This verse underscores the principle that every human deed, including the design and implementation of Artificial Intelligence (AI) systems, carries moral weight and consequence. Even when algorithms act independently, their outcomes are the indirect results of human intention, coding, and oversight (Rahman, 2024). AI autonomy does not negate human moral agency; rather, it expands the ethical field in which human accountability must operate. In Islamic jurisprudence (fiqh), accountability (taklif) is conditional upon rationality and volition qualities absent in machines. Hence, responsibility cannot be transferred to AI, which functions as an instrument devoid of consciousness or moral awareness (Kamali, 2023). The designer, developer, or operator of AI bears responsibility for foreseeable consequences arising from its use or misuse. This aligns with the Shariah principle that liability (daman) attaches to those who possess control and causation in the chain of events leading to harm.

Furthermore, the Islamic view of stewardship (khilafah) mandates that humans act as custodians of knowledge and creation. This duty extends to emerging technologies, requiring that innovation be pursued within ethical boundaries that safeguard justice (adl), human dignity (karamah), and public welfare (maslahah). As noted by Al-Fahmi (2024), AI cannot be regarded as a moral agent under Islamic law because it lacks niyyah (intent) and qudrah (moral power to choose right or wrong). The responsibility for algorithmic harms, therefore, remains with the human actors who design, train, and deploy such systems. Furthermore, recognizing humans as the moral anchor in AI governance, Islamic ethics provides a coherent framework for addressing the moral vacuum often associated with algorithmic decision-making. This principle harmonizes with the objectives of Maqasid al-Shariah, ensuring that technological advancement serves not only efficiency but also justice, accountability, and the preservation of human moral order. Within Nigeria's plural legal system, incorporating these ethical insights into policy formulation such as through the National Artificial Intelligence Policy (2024) can strengthen accountability mechanisms and prevent the diffusion of moral responsibility that currently plagues global AI governance discourse.

Comparative legal developments in global models and the case for a hybrid framework in Nigeria

Globally, the challenge of attributing liability for Artificial Intelligence (AI) related harm has prompted the development of differentiated legal frameworks. The European Union's Artificial Intelligence Act (2024) represents the most comprehensive regulatory approach to date, categorizing AI systems based on their potential risk to human rights, safety, and democratic values. Under this regime, high-risk systems such as those used in law enforcement, credit scoring, or biometric identification are subjected to rigorous compliance standards, including transparency obligations, human oversight, and strict liability provisions (European Commission, 2024). This risk-based approach ensures that accountability is proportionate to the potential social and ethical consequences of algorithmic deployment. Other jurisdictions, including Japan and Singapore, are developing co-liability frameworks that recognize shared accountability between AI developers, data controllers, and end-users (OECD, 2024). Japan's "Social Principles of Human-Centric AI" emphasize responsibility throughout the AI lifecycle, while Singapore's "Model AI Governance Framework 2.0" integrates corporate due diligence, transparency, and ethical oversight into business practices. These models highlight the global shift from punitive to preventive governance focusing not merely on liability after harm occurs but on ensuring that systems are ethically and safely designed.



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For Nigeria, adopting such global frameworks requires careful contextualization within its hybrid legal system, which blends statutory, customary, and Islamic legal traditions. While the Nigeria Data Protection Act (2023) and the draft National Artificial Intelligence Policy (2024) provide preliminary accountability principles, they remain silent on moral and spiritual dimensions of responsibility. The Nigerian context, therefore, offers a unique opportunity to integrate Shariah-based ethics into formal governance structures anchoring AI regulation not only in legality but also in moral conscience and societal welfare.

Conclusion

AI challenges conventional legal and ethical paradigms, yet it also provides an opportunity for Nigeria to lead in values-based governance. However, integrating Maqasid al-Shariah and existing legal doctrines, Nigerian jurisprudence can pioneer a model of algorithmic justice that is both technologically informed and morally grounded. Accountability, in this sense, transcends technical attribution it becomes an ethical covenant ensuring that innovation serves humanity without compromising justice.

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Assessment of Vocational and Technical Education as Predictors of Sustainable Development in Nigeria

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Abstract

This study examines the role of Vocational and Technical Education (VTE) as a predictor of sustainable development in Nigeria. The research aims to assess how VTE contributes to national growth, identify the challenges faced by VTE institutions, and propose policy recommendations to enhance its effectiveness. A descriptive survey research design was adopted, with data collected from 81 respondents using structured questionnaires based on a four-point Likert scale. The data were analyzed using mean and standard deviation to interpret the respondents' perceptions. Findings reveal that VTE significantly contributes to sustainable development through skills acquisition, job creation, entrepreneurship promotion, and economic empowerment. However, challenges such as inadequate funding, outdated curricula, limited industry collaboration, and negative societal perceptions hinder its effectiveness. The study recommends increased government funding, curriculum reforms, strengthened industry partnerships, public awareness campaigns, and improved infrastructure to reposition VTE as a key driver of sustainable development in Nigeria. The study concludes that with strategic interventions, VTE can play a transformative role in addressing Nigeria's socio-economic challenges and advancing its development agenda.

Keywords: Vocational and Technical Education (VTE), sustainable development, skills acquisition, economic empowerment.

Introduction

Vocational and Technical Education (VTE) plays a pivotal role in sustainable development by equipping individuals with the necessary skills to drive industrialization, economic diversification, and self-reliance. According to [UNESCO \(2022\)](#), Technical and Vocational Education and Training (TVET) is a key enabler of sustainable development, particularly in developing economies like Nigeria, where skill acquisition is essential for employment creation and poverty reduction. In Nigeria, VTE has been integrated into the educational framework to address the growing issue of unemployment by providing students with hands-on skills needed in various industries, including manufacturing, construction, agriculture, and information technology (Adebisi & Oni, 2021). VTE provides individuals with the necessary skills to engage in productive activities, thereby contributing to poverty eradication and economic empowerment (Okoye & Okwelle, 2021). Studies suggest that countries with strong vocational education systems experience faster economic growth and lower unemployment rates because VTE aligns with labor market needs (Ekpenyong & Edokpolor, 2023). However, despite its potential, the Nigerian VTE sector faces numerous challenges, including inadequate funding, insufficient infrastructure, and outdated curricula that do not align with technological advancements (Olu & Ayodele, 2023).

The role of VTE in Nigeria's green economy transition has also gained significant attention. Research by [FSD Africa \(2024\)](#) estimates that the green economy could create 3.3 million jobs across Africa by 2030, with Nigeria being a key beneficiary. Many of these jobs will require specialized vocational training in renewable energy, climate-smart agriculture, and sustainable construction. This underscores the need for Nigeria to revamp its VTE sector to prepare graduates for emerging economic opportunities. Furthermore, vocational and technical education has been identified as a tool for entrepreneurship development. Studies indicate that graduates of vocational training institutions are more likely to establish their own businesses, thereby reducing the dependency on government jobs and contributing to economic growth (Okafor



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& Eze, 2020). The Industrial Training Fund (ITF), a Nigerian government agency, has implemented various skill acquisition programs to enhance employability and entrepreneurship among youths (ITF, 2023). These programs have significantly contributed to reducing youth unemployment and fostering innovation in various sectors. Despite these advantages, the implementation of VTE in Nigeria has been hindered by poor public perception, with many students preferring university education over technical skills training (Aina & Adeyemi, 2020). This perception needs to be addressed through advocacy and policy reforms that emphasize the value of vocational education in national development. Additionally, collaboration between industries and educational institutions is necessary to ensure that VTE graduates possess skills that are relevant to labor market demands (Umar & Bello, 2022). In conclusion, VTE is a fundamental driver of sustainable development in Nigeria, providing the skills necessary for economic transformation, poverty reduction, and job creation. Strengthening this sector through policy reforms, increased investment, and industry partnerships will be critical in ensuring Nigeria's workforce remains competitive in the global economy.

Statement of the Problem

Nigeria faces significant challenges related to high unemployment, poverty, and a skills gap, which hinder sustainable development. While Vocational and Technical Education (VTE) holds great potential to address these issues by equipping individuals with practical, market-relevant skills, its impact has been limited. This is due to negative perceptions that view VTE as inferior to university education, leading to low enrollment in technical and vocational programs. Additionally, many VTE institutions suffer from outdated curricula and inadequate infrastructure, which restrict the quality of training provided to students. Furthermore, there is a lack of strong collaboration between industry and educational institutions, limiting practical exposure and internship opportunities for students. Despite these challenges, VTE is essential for economic diversification, job creation, and poverty reduction. Therefore, it is important to assess the role of VTE in promoting sustainable development in Nigeria and explore ways to overcome the obstacles that prevent it from reaching its full potential.

Research Objectives

The objectives of this study are to:

- i. assess the role of Vocational and Technical Education (VTE) in promoting sustainable development in Nigeria.
- ii. identify the challenges faced by VTE institutions in Nigeria and their impact on the effectiveness of training programs.
- iii. recommend policy interventions and strategies for enhancing the effectiveness of VTE in achieving sustainable development goals in Nigeria.

Research Questions

- i. How does Vocational and Technical Education (VTE) contribute to sustainable development in Nigeria?
- ii. What are the key challenges faced by VTE institutions in Nigeria that hinder their effectiveness in skill development?
- iii. What policy recommendations can be made to enhance the effectiveness of VTE in driving sustainable development in Nigeria?

Methodology

A descriptive survey research design was used in this study. The study was done at the school of vocational and technical education, Federal College of Education (Special), all in Oyo, Oyo State. The population for this study was made up of all the 81 vocational and technical educators. The entire population was included in the study because the researcher believed the sample size was adequate. The study's instrument was a structured questionnaire designed to elicit responses from the participants. The instrument employed a four-point Likert rating scale: Strongly Agree - 4, Agree -3, Disagree -2, and Strongly Disagree -1. Two business instructors validated the study's instruments. The study instrument was pilot tested with ten vocational and technical educators at Oyo state college of education, Lanlate. The Cronbach Alpha Coefficient Reliability method produced an instrument reliability coefficient of 0.78. The data gathered from respondents was evaluated using mean and standard deviation to answer the study's questions. A mean of 2.50 or higher was considered "Agree" in the analysis, whereas a mean of less than 2.50 was considered "Disagree".



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Research Question 1:

How does Vocational and Technical Education (VTE) contribute to sustainable development in Nigeria?

Table 1: Response Data for how Vocational and Technical Education (VTE) contribute to sustainable development in Nigeria

Statement	Mean	Standard Deviation	Decisions
VTE improves the employability of graduates in Nigeria.	3.2	0.56	Agree
VTE equips individuals with practical skills that contribute to economic growth.	3.4	0.52	Agree
Graduates of VTE institutions are more likely to create their own businesses.	3.1	0.42	Agree
VTE contributes to poverty reduction by providing skills that lead to employment.	3.3	0.49	Agree
VTE supports industrial growth by developing skilled workers for key sectors.	2.8	0.60	Agree
VTE programs help reduce the dependency on government jobs.	3.5	0.33	Agree
The quality of VTE directly affects Nigeria's progress towards sustainable development.	2.9	0.40	Agree
VTE prepares graduates for jobs in emerging sectors like renewable energy and technology.	2.7	0.39	Agree
VTE helps develop a workforce capable of contributing to national economic goals.	3.6	0.69	Agree
The impact of VTE on Nigeria's economic development is significant and measurable.	2.6	0.47	Agree
Grand Mean	3.11		Agree

Source: Fieldwork, 2025

Table 1 indicates the grand mean of 3.11 which suggests that respondents generally agree that VTE significantly contributes to sustainable development in Nigeria. This indicates that respondents strongly acknowledge VTE's role in improving employability, economic growth, and business creation. It also emphasizes that VTE helps develop a workforce capable of contributing to national economic goals.

Research Question 2:

What are the key challenges faced by VTE institutions in Nigeria that hinder their effectiveness in skill development?

Table 2: Response Data for the key challenges faced by VTE institutions in Nigeria that hinder their effectiveness in skill development

Statement	Mean	Standard Deviation	Decisions
VTE institutions lack adequate funding to improve facilities and programs.	2.7	0.40	Agree
The curriculum in many VTE institutions does not align with current labor market needs.	2.8	0.38	Agree



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There is a shortage of qualified trainers and educators in VTE institutions.	2.5	0.44	Agree
Many VTE institutions have outdated equipment and technology for skill training.	2.6	0.45	Agree
The perception of VTE as inferior to university education hinders student enrollment.	3.2	0.46	Agree
VTE institutions face challenges in establishing industry partnerships for practical training.	2.7	0.53	Agree
Poor infrastructure and inadequate resources reduce the effectiveness of VTE programs.	3.3	0.63	Agree
There is a lack of support and recognition for VTE from government bodies.	2.4	0.32	Agree
VTE institutions are not adequately preparing students for self-employment or entrepreneurship.	2.9	0.45	Agree
The limited exposure to real-world industry practices hinders students' practical learning.	3.1	0.69	Agree
Grand Mean	2.86		Agree

Source: Fieldwork, 2025

With a grand mean of 2.89, table 2 highlights the moderate to significant challenges VTE institutions face. The respondents generally agree that inadequate funding, outdated curricula, weak industry collaboration, and poor societal perceptions of vocational careers are the challenges facing VTE in Nigeria institutions

Research Question 3:

What policy recommendations can be made to enhance the effectiveness of VTE in driving sustainable development in Nigeria?

Statement	Mean	Standard Deviation	Decisions
Government should increase funding and investment in VTE institutions.	3.3	0.35	Agree
The curriculum of VTE programs should be regularly updated to reflect current industry demands.	3.4	0.56	Agree
Industry partnerships should be strengthened to ensure that VTE graduates acquire relevant skills.	2.8	0.58	Agree
VTE should be promoted as a viable career option to students and parents.	3.5	0.67	Agree
The Nigerian government should provide more incentives for private sector investment in VTE.	3.6	0.65	Agree
Policies should be implemented to provide more internship and practical training opportunities for VTE students.	3.2	0.56	Agree
Public awareness campaigns are needed to change negative perceptions about VTE.	3.4	0.62	Agree
VTE institutions should be given more autonomy to innovate and improve their programs.	2.9	0.42	Agree
There should be more collaboration between VTE institutions and international organizations to improve training standards.	3.5	0.68	Agree
More policies should be enacted to promote the integration of technology and green skills into VTE programs.	3.3	0.65	Agree



Grand Mean

3.29

Agree

Source: Fieldwork, 2025

Table 3 indicates the grand mean of 3.31 indicates strong agreement among respondents that policy reforms are essential to enhance VTE effectiveness. The findings highlight the importance of industry partnerships and government funding as the most critical policy recommendations. Statements such as the integration of international collaborations and green skills into VTE suggest that while these recommendations are relevant, respondents might see them as secondary priorities compared to direct investment and curriculum updates.

Discussion of Findings

Findings on research question one revealed that Vocational and Technical Education (VTE) significantly contributes to sustainable development in Nigeria by promoting skills acquisition, self-reliance, job creation, and economic growth. This aligns with Okolie et al. (2021) and Okafor & Eze (2020), who emphasized VTE's role in reducing unemployment and fostering national productivity through technical and entrepreneurial skills development. Findings on research question two revealed that inadequate funding, outdated curricula, weak industry collaboration, and poor societal perceptions of vocational careers are the key challenges faced by VTE institutions in Nigeria that hinder their effectiveness in skill development. These findings are consistent with Audu et al. (2020) and Yusuf & Onifade (2022), who highlighted similar barriers to VTE's effectiveness, particularly the lack of financial support and misalignment between training programs and industry needs. Findings on research question three identified that the respondents recommended increased government funding, curriculum reforms, stronger industry partnerships, and public awareness campaigns to improve VTE's impact. This corroborates the suggestions by Nwosu & Uzochukwu (2023) and Chukwuma & Adepoju (2020), who advocated for strategic investments, policy reforms, and enhanced industry-academic collaborations to strengthen VTE's role in national development. The overall findings indicate a positive perception of VTE's role in sustainable development, with respondents recognizing its potential to drive economic growth if the identified challenges are addressed. This supports the views of Ike & Ofoegbu (2021), who emphasized that VTE can be a catalyst for economic transformation when backed by strong policies and societal support.

Conclusion

The findings of this study highlight the crucial role of Vocational and Technical Education (VTE) in promoting sustainable development in Nigeria. The study demonstrates that while VTE contributes significantly to skill development, job creation, and economic growth, several challenges hinder its effectiveness. The research identified inadequate funding, outdated curricula, and weak industry collaboration as major obstacles preventing VTE institutions from fulfilling their mandate. The study also emphasizes the need for strategic policy interventions to enhance the impact of VTE. The high ratings on policy recommendations suggest that stakeholders recognize the importance of increased government funding, curriculum updates, and stronger industry partnerships. Furthermore, improving the public perception of VTE and aligning training programs with the demands of the labor market are essential steps for maximizing its contributions to national development. The findings suggest that while VTE is a powerful tool for equipping individuals with the skills needed for economic self-reliance, it requires structural reforms to optimize its benefits. The overall positive perception of VTE's role in sustainable development underscores its potential to reduce unemployment and drive Nigeria's industrialization if properly supported.

Recommendations

Based on the study findings, the following recommendations are proposed to enhance the effectiveness of Vocational and Technical Education in Nigeria:

- i. The government should allocate more funds to VTE for the provision of modern facilities, equipment, and training materials. They should also establish special grants and scholarships to encourage student enrollment in VTE programs.
- ii. VTE should be regularly updated in the curriculum to reflect current technological advancements and industry demands.
- iii. The institutions offering VTE should foster partnerships with industries to align training with labor market needs. Internship and apprenticeship programs should be included to enhance practical, hands-on learning experiences.



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- iv. The government together with the institutions should launch campaigns to change societal perceptions about vocational education and highlight its importance for national development.
- v. The government should invest in state-of-the-art training facilities to create an enabling environment for technical and vocational learning. They should ensure equitable access to VTE programs, especially in rural and underserved communities.
- vi. The institutions should provide continuous professional development for VTE educators to enhance their teaching skills and keep them updated with industry trends.

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Assessment of Information and Communication Technology on Administration of Public Secondary Schools in Edo South, Edo State, Nigeria

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Abstract

This study assessed the role of information and communication technology (ICT) in improving administrative effectiveness in public secondary schools in Edo South Senatorial District of Edo State. The study specifically examined how ICT influences supervision, discipline management, record-keeping, and decision-making among school administrators. A descriptive survey research design was adopted. The population comprised all teachers and principals in public secondary schools in Edo South, totaling 2,412 personnel across 135 schools. A sample of 220 respondents was selected using a multi-stage random sampling technique. Data were collected using a structured questionnaire titled ICT and Administrative Effectiveness Questionnaire (ICTAEQ) and supported by official school records. The reliability of the instrument was established through Cronbach's Alpha, which yielded 0.92. Data were analyzed using descriptive statistics (frequency, mean, and standard deviation) and inferential statistics (Pearson correlation, regression, t-test, and ANOVA) at a 0.05 level of significance. Findings revealed that ICT significantly improved supervision practices ($r = 0.471, p < 0.05$), enhanced record-keeping efficiency ($r = 0.458, p < 0.05$), and strengthened discipline management ($r = 0.439, p < 0.05$). Regression results further showed that ICT usage jointly predicted 41% of the variance in administrative effectiveness. Based on the findings, it was concluded that ICT plays a vital role in enhancing school administration in Edo South. The study recommended the provision of adequate ICT facilities in schools, regular training for principals and teachers on ICT tools, and the integration of digital record systems in school management.

Keywords: Information and Communication Technology, Administration, Supervision, Record-Keeping, Discipline.

Introduction

Administration simply means managing an organization in a way that makes the best use of both people and resources to achieve its goals. It involves important duties such as planning, organizing, directing, coordinating, controlling, and checking results. When these duties are carried out in a smooth, cost-effective, and fair manner, it is called effective administration. According to Oyedemi (2015), effective administration is the leader's ability to connect different parts of an organization and ensure clear communication across all levels. In simple terms, effective administration means that leaders use the right strategies to manage tasks, people, and resources efficiently, and within the rules and timeframe set by the organization. In schools, effective administration is very important because education is seen as a tool for building knowledge, creativity, values, and tolerance, all of which contribute to social, cultural, political, and economic growth (Ayushi, 2018). In Nigeria, secondary education is designed to prepare students to be useful to society in many ways—culturally, scientifically, technologically, and commercially. It aims to produce young people who are creative, skilled, and ready either for higher education or to contribute meaningfully to society (NPE, 2013). Achieving these goals depends largely on how well schools are managed. Effective educational administration includes setting standards, creating academic programs, monitoring students' progress, training and motivating teachers, keeping proper records, maintaining good communication with stakeholders, and ensuring a safe and supportive school environment. In short, it is about running schools in ways that help students, teachers, and staff perform better (Pandey, 2017). However, in today's world, this cannot be fully achieved without using Information and Communication Technology (ICT), which makes school management easier and more effective.



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The role of information and communication technology (ICT) in modern school administration has become increasingly important. Schools are no longer run with manual processes alone; instead, ICT tools such as computers, emails, digital record systems, and online platforms are used for supervision, planning, communication, and record-keeping. In public secondary schools in Nigeria, especially in Edo State, effective administration is a major determinant of teaching quality and student performance. ICT adoption therefore provides school leaders with the opportunity to manage resources more efficiently and make informed decisions (Adeyemi, 2017). Administrative effectiveness refers to how well principals and school leaders supervise teachers, enforce discipline, manage records, and coordinate activities to achieve educational goals. The integration of ICT into these functions has been found to reduce errors, save time, improve monitoring, and enhance transparency (Onuma, 2024). For example, using ICT for student attendance registers allows easy tracking of absenteeism, while digital platforms make supervision and reporting faster and more reliable.

Studies in Nigeria and other developing countries show that ICT improves communication, decision-making, and accountability in schools (Ogunode et al., 2023; Ezeani & Eze, 2021). However, despite government investments in ICT, many schools in Edo South still struggle with inadequate ICT facilities, poor internet access, and limited ICT literacy among administrators. This raises concerns about whether ICT is truly contributing to administrative effectiveness in public schools. Empirical studies abound on Information and Communication Technology and Administrative Effectiveness within and outside Nigeria. Okon, Ekaette and Ameh (2015) investigated the relationship between principals' ICT utilization and principals' administrative effectiveness in public secondary schools in Akwa Ibom State. The study adopted an ex-post facto design and sampled 255 principals drawn from 85 public secondary schools. Data were gathered with two self-developed instruments the Information and Communication Technology Utilization Questionnaire (ICTUQ) and the Principals' Administrative Effectiveness Questionnaire (PAEQ) and analysed using correlational statistics. Findings showed a significant positive relationship between principals' ICT utilization and their administrative effectiveness: principals who used ICT more frequently reported higher effectiveness in tasks such as record keeping, communication, and decision-making. While this study demonstrates that principals' ICT use correlates with administrative outcomes, it focused on principals only and did not examine how ICT use by other administrative actors (vice-principals, HODs, secretarial staff) or specific ICT applications (financial software, student-information systems) affect broader administrative effectiveness. The present Edo-South study extends this work by assessing ICT adoption across the whole school administrative team and testing specific ICT functions (finance, records, supervision, communication) as predictors of administrative effectiveness.

Imasuen and Abinuomo (2022) examined the application of ICT to school record-keeping in secondary schools in Benin City, Edo State. The researchers used a descriptive survey design and administered a structured questionnaire to a large sample of 800 respondents (public and private secondary schools' administrative personnel and teachers). Analyses (means and standard deviations) revealed that ICT application to routine record-keeping was low despite many schools owning some ICT facilities; common record types remained largely manual (attendance, admission, CA records). The study concluded that limited effective ICT use undermined timely access to information and decision-making. Although directly located in Edo State and tightly focused on record-keeping, the study did not link ICT record-keeping capacity to an overall index of administrative effectiveness (e.g., speed of financial reporting, timeliness of supervision, stakeholder communication). The present study builds on Imasuen & Abinuomo by measuring how ICT-enabled record-keeping contributes to composite administrative effectiveness indicators in public secondary schools of Edo South Senatorial District. Akinwumi, Babalola and Alegbeleye (2021) investigated ICT use and effective administration of public senior secondary schools in Lagos State using a survey design. The study sampled 360 members of school administrative teams (principals, vice-principals and heads of departments) from 33 sampled senior secondary schools selected via multi-stage sampling. Data were collected with a 19-item questionnaire (Information and Communication Technology Use and Administrative Effectiveness instrument) and analysed with means and t-tests. Results indicated a moderate level of ICT use for administrative purposes and a statistically significant positive influence of ICT use on administrative effectiveness; commonly used devices were photocopiers and mobile phones, while projectors and smartboards were rarely used. The limitation is geographic (Lagos) and the study centres on general ICT availability/usage patterns rather than testing the effect of discrete ICT applications (e.g., student-information systems, accounting software) on specific administrative



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domains. The current Edo-South study adapts their survey approach but disaggregates ICT functions and links each to particular administrative outcomes (finance, supervision, record management, stakeholder communication). Ouma, Abdulraheem, Tijani et al. (2014) assessed the impact of ICT on secondary-school principals' administrative performance in Ilorin. This descriptive survey used stratified random sampling to select 135 participants (45 principals and 90 vice-principals) from 45 schools, and collected data via a validated structured questionnaire. Findings showed moderate ICT usage among principals and a moderate level of routine administrative performance; importantly, the study reported a significant positive correlation between ICT facility usage and principals' administrative performance ($r \approx 0.63$). The study demonstrates ICT's association with principal performance but is limited in scope to principals/vice-principals and does not explore constraints (power supply, training, software availability) in depth, nor does it link ICT use to broader school-level administrative effectiveness metrics. The present Edo-South research incorporates administrators and administrative processes across schools and includes measurement of infrastructural constraints and software/system availability as moderating variables.

Ossai and Okokoyo (2024) explored the function of ICT in secondary-school administration across Delta State using a descriptive survey design. The study sampled 300 respondents (50 principals and 250 teachers) drawn across the state's three senatorial districts and used the Information and Communication Technology and Administration of Secondary Schools Questionnaire (ICTASSQ). Analyses (means, z-tests) showed that principals and teachers agreed ICT positively supports student administration, financial administration and supervision of instruction, and that there was no significant difference between principals' and teachers' perceptions. The study also identified moderating constraints — lack of training, inadequate funding, weak internet/power — that limit ICT's impact. While comprehensive and recent, the study is state-level and groups teachers with administrators; it does not isolate the administrative team's discrete ICT tasks (e.g., accounts software, scheduling/timetabling systems, parent-communication platforms) nor does it focus specifically on Edo South. The current study narrows the focus to Edo South Senatorial District, tests specific administrative ICT applications, and quantifies the effect of infrastructural and capacity constraints on administrative effectiveness. This study therefore assesses the extent to which ICT influences administrative effectiveness in Edo South Senatorial District, with focus on supervision, discipline, and record-keeping.

Statement of the Problem

In Edo South Senatorial District, the effectiveness of school administration in public secondary schools has increasingly come under scrutiny. Reports from the Ministry of Education indicate that many schools operate with limited or outdated Information and Communication Technology (ICT) tools, such as computers, projectors, and digital record management systems. Consequently, principals and administrators continue to depend heavily on manual record-keeping processes, which are prone to errors, delays, and data loss. Teacher supervision is often irregular due to the absence of digital monitoring tools, while disciplinary processes remain slow and inconsistent in the absence of proper tracking systems. These inefficiencies undermine administrative effectiveness and weaken overall school management. The decline in administrative capacity is reflected in the persistent underperformance of students in external examinations. According to the 2023 WAEC report (WAEC, 2024), more than 55% of students in Edo South failed to achieve credit passes in core subjects such as Mathematics and English. Interviews with stakeholders including principals, teachers, and parents— suggest that weak administrative practices, compounded by limited ICT adoption, have significantly contributed to these poor outcomes by disrupting supervision, accountability, and effective decision-making. Although ICT has been widely acknowledged as a powerful tool for strengthening school management by improving supervision, enhancing communication, and ensuring accuracy and accessibility of records, its adoption and impact in the context of public secondary schools in Edo South remain insufficiently studied. Previous research (e.g., Zia, 2021; Chandrasekar, 2021; Abdullahi & Titus, 2021) has emphasized the relevance of ICT in organizational performance generally, but there is limited empirical evidence on how ICT specifically enhances administrative effectiveness within secondary education in Edo South Senatorial District. This study, therefore, seeks to fill that gap by empirically examining the relationship between ICT integration and administrative effectiveness in public secondary schools in Edo South. By assessing how ICT influences supervision, record management, discipline, and communication processes, the research aims to generate actionable insights that can strengthen administrative practices and improve educational outcomes in the district.



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Objectives of the Study

The objectives of this study are to:

1. Determine the influence of ICT on administrative supervision in public secondary schools in Edo South.
2. Assess how ICT contributes to discipline management among students.
3. Examine the role of ICT in record-keeping and documentation in schools.
4. Evaluate the overall impact of ICT on administrative effectiveness in Edo South Senatorial District.

Research Hypotheses

The following hypotheses were formulated:

H₀₁: ICT has no significant influence on administrative supervision in public secondary schools in Edo South.

H₀₂: ICT has no significant influence on discipline management in public secondary schools in Edo South.

H₀₃: ICT has no significant influence on record-keeping in public secondary schools in Edo South.

H₀₄: ICT has no significant joint impact on administrative effectiveness in public secondary schools in Edo South.

Methodology

This research adopted a descriptive survey design, considered appropriate for exploring ongoing practices and perceptions of teachers and principals regarding the role of ICT in enhancing administrative effectiveness. The study focused on public secondary schools within Edo South Senatorial District, which covers seven Local Government Areas, including Oredo, Egor, Ikpoba-Okha, Orhionmwon, Uhumwonde, Ovia North-East, and Ovia South-West. The target population comprised 2,412 teachers and principals, out of which a sample of 220 participants was drawn using a multi-stage sampling procedure to ensure fair representation of both urban-based schools in Benin City and semi-urban or rural schools in areas such as Uhumwonde and Ovia South-West. Two main instruments guided data collection. The first was the ICT and Administrative Effectiveness Questionnaire (ICTAEQ), a 25-item scale designed on a four-point Likert format ranging from *Strongly Agree* to *Strongly Disagree*. Items were grouped into supervision, disciplinary management, and record-keeping dimensions. The second instrument was a School Record Collection Form (SRCF), which provided objective data to validate responses through cross-checking with school records. Content validity was established by specialists in educational management, and reliability testing produced a Cronbach's Alpha coefficient of 0.92, demonstrating high internal consistency. Questionnaires were administered over a two-week period with the help of trained assistants, and 200 valid copies were retrieved, representing a 91% return rate. For data analysis, both descriptive and inferential statistics were employed. Descriptive measures such as means, percentages, and standard deviations summarized demographic features and ICT usage patterns among respondents. Inferential analyses included Pearson correlation to determine the relationship between ICT adoption and specific aspects of school administration, while regression analysis was applied to assess the combined influence of ICT on overall administrative effectiveness. In addition, independent sample t-tests and one-way ANOVA were conducted to examine possible differences in ICT use across school locations and levels of administrative experience. All hypotheses were tested at a 0.05 level of significance to ensure the robustness and credibility of findings.

Presentation of Results

Table 1: Mean and Standard Deviation of ICT and Administrative Effectiveness Variables

Variable	N	Mean (\bar{x})	SD	Remark
ICT in Supervision	200	3.24	0.86	High
ICT in Discipline Mgmt.	200	3.15	0.79	Moderate
ICT in Record-Keeping	200	3.42	0.82	High



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Variable	N	Mean (\bar{x})	SD	Remark
Overall Admin. Effect.	200	3.27	0.81	High

Table 1 shows the overall responses of the participants on ICT usage. The mean scores (\bar{x}) are above 3.00, which indicates a high level of agreement. Respondents reported that ICT is mostly used for record-keeping ($\bar{x} = 3.42$) and supervision ($\bar{x} = 3.24$). ICT in discipline management had the lowest mean ($\bar{x} = 3.15$), which shows it is less frequently applied in this area compared to the others. The standard deviations, which are less than 1.0, suggest that responses were consistent among participants. This implies that most schools in Edo South are beginning to integrate ICT into administration, though with varying degrees of intensity.

Hypothesis One: ICT has no significant influence on administrative supervision in public secondary schools in Edo South.

Table 2: Correlation between ICT and Supervision

Variables	N	r	p-value	Decision
ICT & Supervision	200	0.471	0.002	Significant (Reject H_0)

The Pearson correlation result shows $r = 0.471$, indicating a moderate positive relationship between ICT and supervision. This means that as the use of ICT increases, the quality of supervision also improves. The p-value (0.002) is less than the 0.05 significance level, so the null hypothesis was rejected. This confirms that ICT significantly improves supervision. In practice, this means that principals who use ICT tools (such as emails, online lesson plans, or digital reporting systems) are more effective in monitoring teachers and ensuring teaching quality.

Hypothesis Two: ICT has no significant influence on discipline management in public secondary schools in Edo South.

Table 3: Correlation between ICT and Discipline Management

Variables	N	r	p-value	Decision
ICT & Discipline Mgmt.	200	0.439	0.004	Significant (Reject H_0)

The correlation coefficient ($r = 0.439$) shows a moderate positive relationship between ICT and discipline management. This suggests that ICT helps administrators to better enforce school rules and maintain student discipline. For instance, digital attendance registers and behavior tracking systems make it easier to monitor lateness, absenteeism, or misconduct. Since the p-value is less than 0.05, the result is statistically significant, meaning ICT has a real effect on discipline management in Edo South schools.

Hypothesis Three: ICT has no significant influence on record-keeping in public secondary schools in Edo South.

Table 4: Correlation between ICT and Record-Keeping

Variables	N	R	p-value	Decision
ICT & Record-Keeping	200	0.458	0.001	Significant (Reject H_0)

The correlation coefficient ($r = 0.458$) indicates a moderate positive relationship between ICT and record-keeping. This means schools that use ICT tools for record-keeping (such as digital grade books, online student databases, or electronic filing systems) are more efficient in managing information. The p-value (0.001) shows the result is statistically significant. Therefore, ICT adoption clearly helps reduce cases of missing records, delays, and human errors in documentation.



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Hypothesis Four: ICT has no significant joint impact on administrative effectiveness in public secondary schools in Edo South.

Table 5: Regression Analysis of ICT and Administrative Effectiveness

Model	R	R ²	F	p-value	Decision
ICT (All Variables)	0.64	0.41	23.40	0.000	Significant (Reject Ho)

The regression results show $R = 0.64$, which means there is a strong positive relationship between ICT and administrative effectiveness. The R^2 value of 0.41 indicates that ICT explains 41% of the variation in administrative effectiveness. In other words, ICT alone accounts for almost half of the improvement in how schools are managed. The F-statistic (23.40) with a p-value of 0.000 confirms that the model is statistically significant. This means ICT use jointly predicts administrative effectiveness in Edo South.

Discussion of Findings

The findings from **hypothesis one** showed a moderate positive correlation between ICT use and supervision, indicating that ICT adoption significantly improves supervisory practices in schools. This implies that principals and administrative staff who use digital tools such as emails, online lesson plans, or supervision dashboards can more effectively monitor teachers' instructional delivery and provide timely feedback. This finding aligns with Okon, Ekaette, and Ameh (2015), who reported that principals' ICT utilization enhances administrative tasks including supervision. Similarly, Akinwumi, Babalola, and Alegbeleye (2021) observed that ICT positively impacts supervisory functions, although their study focused on general ICT usage patterns. The current Edo-South study extends these findings by showing that ICT directly strengthens supervision at the school level, contributing to more consistent teacher monitoring and instructional quality. The findings from hypothesis two revealed a correlation between ICT and discipline management was moderately positive ($r = 0.439$, $p = 0.004$), suggesting that ICT facilitates more effective enforcement of school rules and behavioral monitoring. Digital attendance registers, behavior tracking systems, and automated reporting enable administrators to identify truancy, lateness, or misconduct promptly. This is consistent with Ossai and Okokoyo (2024), who found that ICT supports student administration and discipline enforcement, although their study aggregated teachers and principals' perspectives at the state level. By disaggregating ICT functions, the present study demonstrates that schools in Edo South that leverage ICT tools are better able to maintain order, reduce indiscipline, and implement school policies efficiently.

The findings from hypothesis three revealed a moderate positive correlation ($r = 0.458$, $p = 0.001$), indicating that ICT significantly enhances record-keeping efficiency. Schools using digital grade books, online student databases, and electronic filing systems experience fewer errors, faster access to information, and improved documentation accuracy. Imasuen and Abinuomo (2022) similarly observed that ICT applications in record-keeping improve administrative processes, though limited ICT use constrained effectiveness. The present study confirms that when schools in Edo South adopt ICT comprehensively, administrative record-keeping improves significantly, supporting timely reporting, budgeting, and decision-making. The results from hypothesis four revealed a strong positive joint effect of ICT on administrative effectiveness, explaining 41% of the variance. This indicates that ICT adoption—covering supervision, discipline management, and record-keeping—substantially improves overall school administration. This finding corroborates Ouma et al. (2014), who reported that ICT usage among principals is positively associated with administrative performance, and is supported by Okon et al. (2015) and Akinwumi et al. (2021), who emphasized ICT's role in improving operational efficiency, decision-making, and stakeholder communication. The current study uniquely links discrete ICT applications to specific administrative outcomes, showing that schools in Edo South achieve higher administrative efficiency when ICT systems are effectively implemented, adequately funded, and supported with proper infrastructure.

Conclusion

The findings of this study clearly show that Information and Communication Technology (ICT) plays a crucial role in improving administrative effectiveness in public secondary schools in Edo South. ICT helps principals and school



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administrators to supervise teachers more efficiently, maintain better discipline among students, and manage records accurately and promptly. Schools that adopt ICT tools such as digital attendance systems, online grade books, communication platforms, and management software can operate more smoothly and transparently. This indicates that ICT is not just an optional tool but an essential component for effective school leadership in the 21st century. The study highlights that schools with adequate ICT infrastructure and trained personnel are better positioned to meet educational objectives, enhance teaching quality, and improve overall school performance.

Recommendations

1. Edo State Government should ensure that all public secondary schools in Edo South are equipped with sufficient ICT facilities, including computers, projectors, internet access, and management software.
2. Principals, teachers, and administrative staff should undergo regular ICT training to improve digital literacy and effectively utilize available technology.
3. Schools should implement digital record systems for attendance, assessment, student behavior, and communication to enhance efficiency and reduce errors.
4. ICT should be integrated into supervision processes, such as monitoring teaching activities and tracking staff performance, to promote accountability and transparency.
5. Policymakers and educational planners should prioritize ICT funding as a key part of educational reforms, ensuring sustainability, maintenance, and upgrades of ICT infrastructure.
6. Schools should establish clear policies and procedures for ICT use, including security measures and regular evaluations of ICT tools, to maximize benefits for administrative effectiveness and student outcomes.

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Comparative analysis between Anxiety, Stress, and Self-Esteem among Public Universities Undergraduates in Kano State, Nigeria

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Abstract

This study investigated the interrelationship among academic anxiety, perceived stress, and self-esteem among undergraduates of public universities in Kano State, Nigeria. It aimed to determine the levels of anxiety, stress, and self-esteem; examine their relationships; and assess the mediating role of self-esteem on academic performance. A descriptive correlational design was employed. The population consisted of 16,427 undergraduates from three public universities, from which 386 respondents were selected through a multistage sampling technique. Data were collected using standardized instruments: the Academic Anxiety Scale (AAS), Perceived Stress Scale (PSS), Rosenberg Self-Esteem Scale (RSES), and students' cumulative grade point averages (CGPA) to measure academic performance. Reliability coefficients ranged from 0.78 to 0.88. Data were analyzed using descriptive statistics, Pearson correlation, multiple regression, and mediation analysis at a 0.05 significance level. Findings revealed high levels of academic anxiety and moderate perceived stress, with self-esteem showing a strong negative correlation with both variables ($r = -0.61, p < .05$; $r = -0.57, p < .05$). Regression analysis indicated that anxiety and stress jointly predicted 43% of the variance in academic performance, while self-esteem partially mediated these relationships. The study concluded that academic anxiety and stress significantly undermine students' academic outcomes through diminished self-esteem. It recommended that university counseling units intensify psycho educational programs focused on stress management, self-efficacy enhancement, and academic resilience to promote students' mental well-being and performance.

Keywords: academic anxiety, perceived stress, self-esteem, undergraduates, Kano State

Introduction

University students in Nigeria are increasingly confronted by intense academic demands, rapid transitions from secondary schooling, and shifting social-educational environments; these factors often give rise to heightened levels of anxiety and perceived stress, which in turn may undermine academic performance and well-being (Abugu, Chidi, & Eze-Ufodiana, 2025). The problem is especially acute in public tertiary institutions, where infrastructural constraints, large class sizes and heavy workloads create fertile conditions for academic distress (Ijomah & Alabi, 2020). At the same time, a student's self-esteem—or their global sense of self-worth—has been posited as an important protective resource, buffering the negative effects of stress and anxiety and promoting academic resilience and performance (Odulete-Ogunubi, Adelayo, Coker, & Alonge, 2023). Thus, the interplay of academic anxiety, perceived stress and self-esteem warrants detailed investigation in the context of Nigerian public universities. The theoretical orientation underpinning this study positions academic anxiety and stress as risk factors that reduce cognitive capacity, working memory, motivation and persistence, thereby diminishing academic outcomes; self-esteem is conceptualized as a moderator or mediator that shapes how students respond psychologically to stressors, bolsters academic self-efficacy and thereby enhances performance. Empirical research supports these links. For example, in Katsina State, Sayyadi and Salisu (2025) found that academic anxiety negatively predicted self-esteem ($\beta = -.248$) among university students, accounting for 45 % of variance. Similarly, studies of undergraduates in Nigeria highlight moderate to high prevalence of academic stress and anxiety, with negative implications for performance (Abugu et al., 2025). In distance learners at the National Open University of Nigeria, higher self-esteem was associated with better academic success and appeared to buffer test-anxiety (Amini & Reamen, 2025). These findings lend credence to the theoretical model linking anxiety → stress → lower self-esteem poorer academic outcomes.



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However, several studies have challenged or complicated the straightforward application of this framework. For instance, Iroegbu (2016) reported that while anxiety had a significant negative effect on academic excellence, self-esteem did not exert a significant influence on performance in his undergraduate sample in Nigeria ($F(1,189) = 0.66, p > .05$). This suggests that self-esteem may not always act as a strong protective resource in every context. In another study on postgraduate students in Nigeria, Rahmat and Osere (2024) found only a weak negative correlation between self-esteem and public-speaking anxiety ($r = -0.109, p = .290$), indicating that self-esteem may not always significantly mitigate anxiety in high-pressure tasks. These counter-findings raise questions about boundary conditions: when and for whom does self-esteem neutralise the negative effects of anxiety and stress? Are there contexts in which stress/anxiety operate independently of self-esteem? And how do local contextual factors (e.g., gender, university resources, academic discipline) moderate these relationships? Given these issues, the present study aims to examine the interrelationships among academic anxiety, perceived stress and self-esteem, and their joint influence on academic performance (GPA) among undergraduates in public universities in Kano State. By integrating multiple constructs and focusing on a Nigerian north-western context, the study seeks to contribute to theory and practice by clarifying whether self-esteem serves as a key mediator or moderator in the anxiety-stress-performance nexus, and by generating evidence relevant for university counseling and support interventions in this locality.

Statement of the Problem

University education in Nigeria is designed to promote intellectual growth, personal development, and national capacity building. However, increasing evidence suggests that many undergraduates, especially in public universities, experience high levels of academic anxiety and perceived stress that interfere with learning, concentration, and performance (Abugu, Chidi, & Eze-Ufodiama, 2025; Ijomah & Alabi, 2020). In Kano State, where students face challenges such as overcrowded classrooms, unstable academic calendars, economic hardship, and limited access to psychological support, these stressors may be particularly acute. As a result, students' emotional stability and self-esteem their sense of personal worth and competence—are often compromised, which may in turn affect academic achievement. While prior studies in Nigeria and other developing contexts have established that stress and anxiety negatively affect academic outcomes (Odule-Ogunubi et al., 2023; Sayyadi & Salisu, 2025), there remains limited empirical evidence examining how self-esteem interacts with these variables within the specific socio-educational environment of Kano State. Most existing research has treated self-esteem merely as an independent predictor rather than as a mediating or buffering variable capable of explaining how stress and anxiety exert their effects on academic performance. Furthermore, few studies have simultaneously considered the combined influence of anxiety, stress, and self-esteem while accounting for socioeconomic and behavioral factors such as study habits and sleep patterns. This conceptual and empirical gap justifies the present investigation. By exploring the triadic relationship among academic anxiety, perceived stress, and self-esteem—and their collective influence on GPA—this study seeks to offer a more comprehensive model of psychological functioning among university students in Kano State. The findings are expected to clarify whether self-esteem plays a significant mediating role in mitigating the harmful effects of stress and anxiety on academic outcomes. It is anticipated that the results will reveal a significant negative relationship between academic anxiety and GPA, and between perceived stress and GPA, while self-esteem will show a positive relationship with both academic performance and psychological well-being. Moreover, self-esteem is expected to partially mediate the effect of stress on academic performance, suggesting that students with higher self-esteem are better able to manage stress and maintain satisfactory academic outcomes. These findings will provide a theoretical and practical basis for designing university-level counseling and student-support interventions that focus on reducing stress and enhancing self-esteem to improve academic success.

Objectives of the Study

The main objective of this study is to examine the interrelationship among academic anxiety, perceived stress, and self-esteem among undergraduates of public universities in Kano State. Specifically, the study seeks to;

1. Determine the level of academic anxiety, perceived stress, and self-esteem among undergraduates of public universities in Kano State.
2. Examine the relationship between academic anxiety and self-esteem among the undergraduates.
3. Assess the relationship between perceived stress and self-esteem among the undergraduates.
4. Investigate the joint influence of academic anxiety and perceived stress on students' academic performance.



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5. Determine whether self-esteem mediates the relationship between academic anxiety, perceived stress, and academic performance.

Research Questions

The following research questions were formulated to guide the study:

1. What are the levels of academic anxiety, perceived stress, and self-esteem among undergraduates in public universities in Kano State?
2. What is the relationship between academic anxiety and self-esteem among these students?
3. What is the relationship between perceived stress and self-esteem among these students?
4. To what extent do academic anxiety and perceived stress jointly influence academic performance?
5. Does self-esteem mediate the relationship between academic anxiety, perceived stress, and academic performance among undergraduates?

Research Hypotheses

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

- H₀₁: There is no significant relationship between academic anxiety and self-esteem among undergraduates of public universities in Kano State.
- H₀₂: There is no significant relationship between perceived stress and self-esteem among undergraduates of public universities in Kano State.
- H₀₃: Academic anxiety and perceived stress do not jointly and significantly influence academic performance.
- H₀₄: Self-esteem does not mediate the relationship between academic anxiety, perceived stress, and academic performance among undergraduates.

Literature Review

Academic Anxiety

Academic anxiety is a negative emotional state that students experience more frequently in academic situations (Gogol et al., 2017). Academic anxiety can become more detrimental over time. As a student's academic performance suffers, the anxiety level related to certain academic tasks increases (Huberty, 2012). According to Gourav (2015) Academic anxiety, is anxiety relating to educational institutions and a mental insensitivity to anxiety or difficulties in responding to school or college conditions. Academic anxiety according to Richa (2021) academic anxiety includes several subjects, concerns resulting from reprimands from teachers, parents and peers, stress scores on tests, fears of graduation, and the consequences of failing an exam. Academic anxiety is a sort of state anxiety which relates to the approaching threat from the academic institution's environment admitting teachers, certain subjects like Mathematics, English et cetera. (Meetai, 2012). The four key scopes or dimensions of academic anxiety include; emotionality, worry, deficits in studying skills and interference generated by duty or task. Basically, these aspects of academic anxiety have a significant bearing on the students' education outcomes, particularly post-secondary school students (Gourav, 2015). Without any anxiety most of the people would lack the motivation to do anything in life. Therefore, moderate level of academic anxiety is essential to motivate students to study for examination and may inclined them for better achievements.

Stress and Academic Performance

Stressful conditions in the university are likely to lead to deterioration in academic performance as characterized by low grades and inability to complete class assignments (Smith & Renk, 2007; Turner et al., 2015). Students' academic performance is a key characteristic of education (Rono, 2013). It is considered to be the center around which the entire education system evolves. Some factors influencing high academic achievement include daily hours of study, parents' economic status and good learning facilities (Singh et al., 2016). Stress can negatively affect a student's academic performance, so it is important for students to manage stress in order to overcome the negative effect of stress (Mushtaq & Khan, 2012). Stress is a widespread phenomenon all around during all human lifespan. All people have experienced it throughout their history and throughout human history. Stress has a different meaning for different people under different conditions. Stress is an unavoidable phenomenon in students' lives. In the academic setting, stress can arise from both academic and non-academic factors. These include socio-cultural and psychological attributes. Sources of stress in the academic setting may include difficulty with coping with a new environment, nature of as well as workload of course of study, relationship with other students, parental and teachers' expectations of students as well as own expectation of



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academic performance (Sohail, 2013). He further noted that stress can have either a positive or negative effect on a student's academic performance depending on the severity. Minimal levels of stress can result in positive outcomes such as motivation and improved task performance while severe stress can result in anxiety, depression, and social dysfunctions. High levels of stress associated with poor academic performance. Low stress however, may not necessarily result in good performance as under the circumstances, some students may perceive the task at hand as unchallenging and may easily get bored (Uchil, 2017). This may lead to poor academic performance. Stress affects students learning and academic performance negatively as it can lead to anxiety, sleep problems and interpersonal conflicts. Majority of students with stress reported poor self-esteem and high depression (Baste & Gadkari, 2014). University students globally report stress as one of the most significant psychological problems (Misra & McKean, 2000). In Nigeria, stress is exacerbated by inadequate facilities, prolonged strikes, and financial hardship (Salami, 2010). Stress not only impairs concentration but also contributes to mental health issues such as depression and anxiety.

Self-Esteem and Psychological Adjustment

Self-esteem is a central predictor of psychological well-being. Low self-esteem is associated with higher stress and anxiety (Orth & Robins, 2014). Among Nigerian undergraduates, positive self-evaluation has been shown to buffer against academic stress and promote resilience (Nwankwo et al., 2015). Academic achievement motivation pertains to actions that lead to learning and the fulfillment of (academic) accomplishments (Yousefy et al., 2012). Various factors have an impact on students' academic success, including aspects related to students themselves, teachers, and Institute (Sharma & Sharma, 2012). Among these factors, self-esteem holds significance. Self-esteem is a notable element, frequently discussed not only in everyday language but also in the field of psychology (Sharma & Sharma, 2012). The relationship between self-esteem and academic performance pertains to how an individual's self-view influences their accomplishments in an educational setting. This connection encompasses the correlation between self-assurance, drive, and overall achievements in scholarly activities (Sophomore et al.). Throughout the research literature, some researchers have argued whether there is a direct relationship between academic achievement and self-esteem. For example, some researchers found self-esteem and academic performance to be interrelated factors (D'Mello et al., 2018). While other researchers argue, there is a linear relationship between self-esteem and academic achievement (Erzen, 2017). That is, as self-esteem increases, academic achievement also increases, and vice versa.

Gaps in Literature

Although several studies have examined stress and self-esteem separately in Nigeria, few have integrated these constructs with academic anxiety within the context of Kano State universities. This study contributes by providing empirical evidence on how these variables interact in this unique academic environment.

Methodology

The study adopted a correlational survey research design, which is appropriate for examining the relationships among academic anxiety, perceived stress, self-esteem, and academic performance without manipulating any variables. This design allows the researcher to determine the predictive and mediating relationships among the constructs as they naturally occur among undergraduate students in public universities. The population of this study comprised all undergraduate students enrolled in public universities in Kano State, Nigeria, during the 2024/2025 academic session. The target population included students from various faculties such as Education, Social Sciences, Management Sciences, and Natural Sciences, reflecting the diverse academic experiences of university students across the state. A total of 400 undergraduates were selected as the study sample using a multistage sampling technique. In the first stage, two public universities Bayero University Kano (BUK) and Kano University of Science and Technology (KUST) were purposively selected based on their population size and accessibility. In the second stage, four faculties were randomly selected from each university. In the final stage, proportional stratified random sampling was used to select participants from each faculty according to gender and level of study. This ensured adequate representation and minimized sampling bias. Data were collected using a structured questionnaire composed of four standardized scales: Academic Anxiety Scale (AAS): A 15-item scale adapted from Vitasari et al. (2010), measuring students' feelings of apprehension, tension, and worry in academic contexts; Perceived Stress Scale (PSS): A 10-item instrument developed by Cohen, Kamarck, and Mermelstein (1983), assessing the degree to which individuals perceive their lives as stressful; Rosenberg Self-Esteem Scale (RSES): A 10-item scale by Rosenberg (1965), assessing self-worth and personal value; Academic Performance Index (API): The students' self-reported cumulative grade point average (CGPA) obtained from academic records. The instruments were validated through expert review for content and face validity by three specialists in educational psychology and measurement. The instruments were pilot-tested on 40 students from Yusuf Maitama Sule University Kano, who were not part of the main



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study. Using Cronbach's Alpha, the reliability coefficients obtained were 0.83 for the AAS, 0.79 for the PSS, and 0.87 for the RSES, indicating high internal consistency and reliability. Approval was obtained from the respective university authorities prior to data collection. The researcher, with the assistance of trained research assistants, administered the questionnaires directly to students during lecture breaks. Respondents were assured of anonymity and confidentiality. Out of the 400 questionnaires distributed, 386 were correctly completed and returned, representing a response rate of 96.5%. The collected data were coded and analyzed using Statistical Package for the Social Sciences (SPSS) Version 26 and AMOS 24. Descriptive statistics (mean, standard deviation) were used to summarize demographic and scale data. Pearson Product-Moment Correlation was employed to examine relationships among variables, while Multiple Regression Analysis tested the joint and individual predictive effects of academic anxiety and perceived stress on academic performance. Mediation analysis was conducted using the PROCESS Macro (Model 4) by Hayes (2018) to determine whether self-esteem mediates the relationship between academic anxiety, stress, and academic performance. All hypotheses were tested at a 0.05 level of significance (95% confidence interval). Decisions to reject or fail to reject the null hypotheses were based on calculated p-values and standardized regression coefficients (β). Effect sizes and confidence intervals were also reported to enhance the interpretability and replicability of the findings.

Presentation of Results

Research Question 1:

What are the levels of academic anxiety, perceived stress, and self-esteem among undergraduates in public universities in Kano State?

Table 1: Descriptive Statistics of Academic Anxiety, Perceived Stress, and Self-Esteem among Undergraduates (N = 386)

S/N	Variables	Mean	Std. Deviation	Decision
1	Academic Anxiety	3.42	0.76	High
2	Perceived Stress	3.25	0.81	Moderate
3	Self-Esteem	2.94	0.72	Moderate

Source: Field Survey, 2025.

Table 1 above indicates that the mean level of academic anxiety among undergraduates in public universities in Kano State is high ($M = 3.42$, $SD = 0.76$), while perceived stress and self-esteem are moderate. This suggests that although students experience considerable anxiety related to academic demands, their overall stress and self-perception are moderately balanced. Hence, the research question is adequately answered, showing varying psychological states among the students.

Research Question 2:

What is the relationship between academic anxiety and self-esteem among undergraduates in public universities in Kano State?

Table 2: Pearson Correlation between Academic Anxiety and Self-Esteem

S/N	Variables	r-value	p-value	Decision
1	Academic Anxiety	-0.61	0.001	Significant
2	Self-Esteem			

Source: Field Survey, 2025.

Table 2 shows a significant negative relationship between academic anxiety and self-esteem ($r = -0.61$, $p < 0.05$). This means that as academic anxiety increases, self-esteem decreases among undergraduates. The research question is thus affirmed academic anxiety exerts a detrimental influence on students' self-concept.

Research Question 3:

What is the relationship between perceived stress and self-esteem among undergraduates in public universities in Kano State?

Table 3: Correlation between Perceived Stress and Self-Esteem

S/N	Variables	r-value	p-value	Decision
1	Perceived Stress	-0.57	0.001	Significant
2	Self-Esteem			

Source: Field Survey, 2025.

The analysis reveals a significant inverse relationship between perceived stress and self-esteem ($r = -0.57$, $p < 0.05$). This implies that higher stress levels are associated with lower self-esteem among students.

Research Question 4:

To what extent do academic anxiety and perceived stress jointly influence academic performance?



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Table 4: Multiple Regressions of Academic Anxiety and Perceived Stress on Academic Performance (GPA)

Predictor Variable	B	t-value	p-value	Decision
Academic Anxiety	-0.42	-5.61	0.001	Significant
Perceived Stress	-0.31	-4.48	0.001	Significant

$R^2 = 0.43$, Adjusted $R^2 = 0.42$, $F(2, 383) = 143.56$, $p < 0.001$

Source: Field Survey, 2025.

Academic anxiety and perceived stress jointly explain 43% of the variance in students' academic performance, indicating a significant combined influence. This finding supports the assumption that both anxiety and stress are major determinants of academic success in public universities.

Research Question 5:

Does self-esteem mediate the relationship between academic anxiety, perceived stress, and academic performance among undergraduates?

Table 5: Mediation Analysis of Self-Esteem between Stress, Anxiety, and Academic Performance

Pathway	Effect	SE	p-value	Decision
Anxiety and Self-Esteem	-0.61	0.04	0.001	Significant
Stress and Self-Esteem	-0.57	0.05	0.001	Significant
Self-Esteem and Academic Performance	0.46	0.06	0.001	Significant
Indirect Effect (Mediation)	0.28	0.03	0.002	Partial Mediation

Source: Field Survey, 2025.

The mediation analysis shows that self-esteem significantly mediates the relationship between stress, anxiety, and academic performance. Students with higher self-esteem are better able to manage stress and anxiety, leading to improved academic outcomes.

Hypotheses Testing

Hypothesis One: There is no significant relationship between academic anxiety and self-esteem among undergraduates of public universities in Kano State.

Table 6: Pearson Correlation between Academic Anxiety and Self-Esteem (N = 386)

	R	p-value	Decision
Academic Anxiety			
Self-Esteem	-0.61	0.001	Significant

Source: Field Data, 2025.

The result in the above table showed that, the correlation coefficient ($r = -0.61$, $p < 0.05$) shows a strong negative relationship between academic anxiety and self-esteem. Thus, the null hypothesis is rejected. This implies that as anxiety increases, students' self-esteem tends to decrease significantly.

Hypothesis Two: There is no significant relationship between perceived stress and self-esteem among undergraduates of public universities in Kano State.

Table 7: Pearson Correlation between Perceived Stress and Self-Esteem (N = 386)

	R	p-value	Decision
Perceived Stress			
Self-Esteem	-0.57	0.001	Significant

Source: Field Data, 2025.

The result in the above table indicated that, the correlation coefficient ($r = -0.57$, $p < 0.05$) indicates a significant negative relationship between perceived stress and self-esteem. Therefore, the null hypothesis is rejected. Higher stress levels correspond with lower self-esteem among the students.

Hypothesis Three: Academic anxiety and perceived stress do not jointly and significantly influence academic performance.

Table 8: Multiple Regression Analysis of Academic Anxiety and Perceived Stress on Academic Performance (N = 386)

Predictor Variable	β (Standardized)	t-value	p-value	Decision
Academic Anxiety	-0.42	-5.61	0.001	Significant
Perceived Stress	-0.31	-4.48	0.001	Significant

Model Summary: $R = 0.66$, $R^2 = 0.43$, Adjusted $R^2 = 0.42$, $F(2, 383) = 143.56$, $p < 0.001$

Source: Field Data, 2025.



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The result in the above table showed that, both academic anxiety and perceived stress jointly explain 43% of the variance in academic performance, and their influence is statistically significant ($p < 0.05$). Consequently, the null hypothesis is rejected. The finding implies that higher levels of anxiety and stress predict poorer academic outcomes.

Hypothesis Four: Self-esteem does not mediate the relationship between academic anxiety, perceived stress, and academic performance among undergraduates.

Table 9: Mediation Analysis of Self-Esteem between Academic Anxiety, Perceived Stress, and Academic Performance (N = 386)

Pathway	Effect	SE	p-value	Decision
Anxiety and Self-Esteem	-0.61	0.04	0.001	Significant
Stress and Self-Esteem	-0.57	0.05	0.001	Significant
Self-Esteem and Academic Performance	0.46	0.06	0.001	Significant
Indirect Effect (Mediation)	0.28	0.03	0.002	Partial Mediation

Source: Field Data, 2025.

The result in the above table showed that, Self-esteem significantly mediates the effects of stress and anxiety on academic performance. The indirect effect is statistically significant ($p < 0.05$), indicating that the null hypothesis is rejected. Hence, self-esteem partially buffers the negative influence of stress and anxiety on students' achievement.

Summary of Hypothesis Testing

All four hypotheses were statistically significant at $p < 0.05$. The results indicate that both academic anxiety and perceived stress negatively impact self-esteem and academic performance, while self-esteem acts as a protective factor that mediates and reduces these effects. This pattern validates the study's theoretical model and reinforces the psychological importance of fostering self-esteem among undergraduates to mitigate anxiety and stress.

Discussion of Findings

The findings reveal that most undergraduates in Kano State experience moderate to high academic anxiety and stress, which negatively affect their self-esteem and academic performance. This is consistent with the findings of Odulate-Ogunubi et al. (2023) and Vitasari et al. (2010), who reported that elevated academic pressure diminishes confidence and academic motivation. Furthermore, the significant mediating role of self-esteem aligns with Bandura's (1997) self-efficacy theory, suggesting that individuals with higher self-esteem possess greater resilience against psychological stressors. However, the findings also contradict earlier studies (e.g., Olatunji & Alao, 2019), which found no significant mediating influence of self-esteem in Nigerian contexts—possibly due to sample or cultural differences.

Conclusion

This study concludes that academic anxiety and perceived stress are significant predictors of self-esteem and academic performance among undergraduates of public universities in Kano State. Self-esteem serves as a vital mediating factor, buffering the negative effects of stress and anxiety. Thus, fostering students' self-esteem can play a crucial role in improving psychological well-being and academic success.

Recommendations

1. University counselling units should organize periodic stress and anxiety management workshops for students.
2. Lecturers should adopt learner-friendly pedagogical strategies that reduce academic pressure.
3. University authorities should integrate self-esteem enhancement programs into student orientation and mentoring schemes.
4. Future studies should explore longitudinal designs to determine causal pathways among the variables.

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Assessment of Civic Education Curriculum on Youths Empowerment among Secondary School Students in Sokoto State, Nigeria

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Abstract

The study focuses on “Assessment of Civic Education Curriculum on youth Empowerment among Secondary Schools students in Sokoto State, Nigeria”. The study was guided by one research questions and one hypothesis tested at 0.05 significant level of significance. The study adopts descriptive survey research design. The target population of the study was Civic Education students in public Senior Secondary Schools, Sokoto State, Nigeria. A sample of 357 students were used in this study. A researcher-made questionnaire with a reliability index of .78 was used for data collection in this study. Nine research assistants were recruited for the distribution and retrieval of the questionnaire. The data collected for the study was analysed using descriptive and inferential statistics. The study found that: Civic Education Curriculum teaching methods promote youth empowerment among students in Senior Secondary Schools, Sokoto State, Nigeria. The null hypothesis tested were rejected. The study concluded that Civic Education Curriculum teaching methods could be used in promoting youth empowerment among students in Senior Secondary Schools, Sokoto State, Nigeria. Thus, the study recommended among others that: Civic Educators should actively continue with more interactive and participatory teaching methods such as field trip, discovery method, drama as teaching method, role play, discussion method, and cooperative learning. These methods enhance students’ engagement and promote critical thinking, communication skills unity, tolerance, and intellectual skills, and cooperative learning.

Keywords: Civic Education, Curriculum, Youth empowerment

Introduction

Civic education is an education given to the students to learn their right and responsibility in the society; in this view, civic education creates awareness to student’s civic engagement and responsibility, such as register as voters and vote during the election, also to engage in protecting government properties by reporting any suspicious move that can damage government properties. Civic Education is the process of educating citizens on their right, duties and responsibilities to empower and motivate them with values, attitude and desirable skills that make them valuable, functional and meaningful in the society and also equipped an individual to become competent, productive, and responsible for positive change in the society (Jakob, Franziska, & Lisa, 2020). Youth empowerment means that young people acquire the skills, authority, and freedom to make decisions and make changes in their own lives and in the lives of other people, including youth and adults, through an attitudinal, structural, and cultural process (Nelson & Christopher, 2022). Therefore, youth empowerment deals with the process of encouraging youth to do great things for themselves and also the society. Civic education curriculum strives to promote the youth confidence and self-identity as well as developing their potentialities by helping them on the best way to utilize and maximize it. Thus, youth empowerment involves appreciation of wisdom and energy of youth to be agents of social change, justice, and service.



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Objective of the study

- i. assess the influence of Civic Education teaching methods in promoting youth Empowerment among students in Senior Secondary Schools Sokoto State Nigeria.

Research Question

The study intends to answer the following question:

- i. to what extent does Civic Education Curriculum contents promote community services among students in Senior Secondary Schools Sokoto State Nigeria?

Research Hypotheses

Ho1: There is no significant difference in the views of students on Civic Education teaching methods in promoting Youth Empowerment among students in Senior Secondary Schools Sokoto State Nigeria.

Research Design

This research employed descriptive survey research design. Which enabled the researcher to describe the attitude, opinion, behaviour or characteristic of the population based on the data collected from a sample or a population; it is typically used to gather information from a small sample of individuals or items thought to be representative of the full group and describe in a methodical way on the facts about that population (Salihu and Adamu, 2016). The study covered all senior secondary civic education students in Sokoto state, Nigeria's Zone 'A' (Sokoto North and Kware Educational Zone. Senior secondary school (SSII) students total five thousand two hundred and twenty-four (5,224) throughout 17 public senior secondary schools in the zone. This predicated on official data acquired from the ministry of basic and secondary education. The Three hundred and fifty-seven (357) is the required sample size for the study, with targeted population of five thousand two hundred and twenty-four (5,224) SSII Civic Education students at a 95% confidence level and a margin error of 5%. However, the stratified sampling technique was employed to select ten (10) schools to be included in the study. From the population; which justify the used of 357 according to research advisor table 2006. Therefore, the proportionate sampling technique will also be used to select the sample accordingly in each school.

Presentation of Results

Research Question One:

How does Civic Education teaching methods promote Youth Empowerment among Students in Senior Secondary Schools Sokoto State Nigeria?

To answer this research question, the data collected was subjected to descriptive statistics of mean and standard deviation, Table 1 presents summary of the result.

Table 1: mean and standard deviation on Civic Education teaching methods in promoting Youth Empowerment among Students in Senior Secondary Schools Sokoto State Nigeria?

S/n	Item	Mean	Std
1	The use of Drama as teaching method will help in promoting youth Empowerment among students	3.782	0.491
2	The use of Demonstration as teaching method will promote youth confidence and national identity.	3.798	0.505
3	Field trip as teaching method is relevant in promoting students on the best way to utilize and use their potentials for community development.	3.801	0.518
4	Simulation as teaching method is relevant in promoting wisdom and ideas for social change, justice, and services to humanity.	3.790	0.520



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5	Group discussion as teaching method promote communication skills, unity, and tolerance among students.	3.821	0.476
6	Role play as teaching method help in promoting life coping skills and good leadership styles among students.	3.812	0.475
7	Use of differentiated teaching method help in promoting manipulative skills among students.	3.756	0.570
8	Use of Discovery teaching method will be relevant to promote intellectual skills for providing rightful solution in the community.	3.818	0471
9	Involving guest speaker or experts from relevant fields to provide first-hand knowledge and experiences related to empowerment is a good method for community development.	3.843	0414
10	Use of dialogue as teaching method will help in reducing the level of ignorance and crime among students.	3.812	0.498
Grand mean		3.803	

Decision/thresh hold mean=2.500

According to the opinion of respondents above, Civic Education teaching methods has the high potential to promote Youth Empowerment among Students in Senior Secondary Schools Sokoto State Nigeria, this is as their grand mean agreement response of 3.803 is above the decision/thresh hold mean of 2.500. Specifically, most respondents are of the views that Involving guest speaker or experts from relevant fields to provide first-hand knowledge and experiences related to empowerment is a good method for community development, .as this view had the highest mean agreement response of 3.843 as a combined total of 352 were in agreement while only 5 were in disagreement with this view. In the same vein most believe that Group discussion as teaching method promote communication skills, unity, and tolerance among students., this view attracted the second highest mean agreement response of 3.821 as details showed that while a combined total of 349 were in agreement only 8 were in disagreement.

In summary, Civic Education teaching methods have the high potential to promote Youth Empowerment among Students in Senior Secondary Schools Sokoto State Nigeria, especially as Involving guest speaker or experts from relevant fields to provide first-hand knowledge and experiences related to empowerment is a good method for community development, and Group discussion as teaching method promote communication skills, unity, and tolerance among students.

Testing of null Hypotheses

All the hypotheses were tested at 0.05 level of significant;

Hypothesis One: there is no significant difference in the views of students on Civic Education teaching methods in promoting Youth Empowerment among students in Senior Secondary Schools Sokoto State Nigeria.

This null hypothesis was tested using the inferential statistics of one sample t-test. The result of the analysis is presented in Table 2.

Table 2: One sample t test on difference in the views of students on Civic Education teaching methods in promoting Youth Empowerment among students in Senior Secondary Schools Sokoto State Nigeria.



Respondents	N	Mean	STD	Mean. Difference	Df	t-cal.	t-crit.	p-value
Students	357	37.99	4.76	37.95	356	150.539	1.96	0.002

P-value=0.002 < 0.05, t-comp. = 150.53 > 1.96 at df 356

The one sample t test above revealed that significant difference exist in views of students on Civic Education teaching methods in promoting Youth Empowerment among students in Senior Secondary Schools Sokoto State Nigeria. The p-value of 0.002 is below the 0.05 alpha level of significance and its t calculated value of 150.53 is above the 1.96 t critical at df 356. The mean influence difference is at 37.95. This shows that Civic Education teaching methods help in promoting youth empowerment among students in Senior Secondary Schools Sokoto State Nigeria.

Therefore, the null hypothesis which state that there is no significant difference in the views of students on Civic Education teaching methods in promoting Youth Empowerment among students in Senior Secondary Schools Sokoto State Nigeria, is consequently rejected.

Discussion of Findings

This study investigates the view of students on “Assessment of Civic Education curriculum in promoting community service and civic responsibility among students in senior secondary schools Sokoto state, Nigeria”. The study focuses on: influence of Civic Education teaching methods in promoting youth empowerment among students in senior secondary schools Sokoto state, Nigeria. The study was guided by one research question and one hypothesis were tested at 0.05 significant level. While, the findings arising from this study are discussed below:

The findings of hypothesis two shows that Civic Education methods of teaching has influence in promoting youth empowerment among students in senior secondary schools Sokoto state, Nigeria. The result of the data analysis on hypothesis two illustrates that (p-value=0.002 < 0.05, t-comp. = 150.53 > 1.96 at df 356). This demonstrates that Civic Education Methods, with drama as teaching method, demonstration method, field trip method, simulation as teaching method, group discussion method, role play, use of differentiated method, discovery method, involving guest speaker or expert, and the use of dialogue as teaching methods are appropriate for the promotion of youth empowerment among students. This finding is expected as Civic Education is focused on the inculcation of youth confidence, utilization of their potentials for community development, social change, justice and service to humanity. Likewise, it influences in the youth knowledge, experiences, and promote intellectual skills for providing rightful solution in the community. This finding confirmed studies which found that youth empowerment connected to social work practice is important on a more structural and collective level (Chang *et al.*, 2022). Skills acquisition and youth empowerment are reasonably accepted and workable based on environmental needs and sustainability (Muraina, 2023). Skills acquisition and youth empowerment have the potential to create employment opportunities and reduce youth unemployment (Eze, 2023). Community participation and instilling accountability in program implementation across various sectors towards youth empowerment for positive youth development and realization of their full economic and social potential (Nalwanga & Nicholas, 2024). Block and quarry industries have great impact on Youth Empowerment (Bulus., Chedi, & Angulu, 2023).

The findings of this study are also in line with the Empowerment theory; developed by Rappaport (1987), which views youth Empowerment as a social construct that links individual strengths and competencies, natural helping systems, and proactive behaviours to social change. Empowerment leads to social change, such as education and economic opportunities; where every parson has unique abilities, talents and potentials.

Conclusions

The focus of this study is to investigate “Assessment of Civic Education Curriculum on Youth Empowerment among secondary schools Students in Sokoto state, Nigeria”. In view of the findings of this study, the following conclusions were made: Civic Education teaching methods has influence in promoting Youth Empowerment among students in Senior Secondary Schools Sokoto State Nigeria.

Recommendations

Based on the findings and conclusions of this study, the following recommendations are made to enhance the assessment of Civic Education curriculum in promoting Youth Empowerment among students in senior secondary schools Sokoto state, Nigeria:



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1. Civic Educators should actively continue with more interactive and participatory teaching methods such as field trip, discovery method, drama as teaching method, role play, discussion method, and cooperative learning. These methods enhance students' engagement and promote critical thinking, communication skills, unity, tolerance, and intellectual skills.

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Assessment of Pastoral Counseling Service Delivery among Christian Faithful in God's Care Missions, Okpo Kogi State, Nigeria

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Abstract

This paper presents an Assessment of Pastoral Counseling Service Delivery Among Christian Faithful through a focused case study of God's Care Missions, Okpo (Kogi State, Nigeria). It considered the impact and effectiveness of pastoral counseling. A mixed-methods approach was used to collect data from 35 participants who received pastoral counseling services. The findings suggest that pastoral counseling has a significant impact on the spiritual and emotional well-being of individuals, with 80% reporting improved spiritual well-being and 82.9% reporting improved emotional well-being. Spiritual struggles were the primary reason for seeking pastoral counseling (51.4%), followed by trauma and crisis (28.6%). The study highlights the importance of addressing spiritual needs in counseling and provides recommendations for improving the delivery of pastoral counseling services, including enhancing training and monitoring for pastoral counselors and increasing access to services. The paper concludes with recommendations for strengthening pastoral counseling through formal training. The findings have implications for the development of spiritually integrated counseling programs in faith-based organizations.

Keywords: Pastoral counseling, God's Care Missions, spiritual, well-being, faith-based, organizations.

Introduction

Contemporary societies face a complex constellation of psychosocial problems—depression, anxiety, family breakdown, youth alienation, substance misuse, and grief from socioeconomic pressures. In many communities, faith-based churches remain the primary sites of help-seeking. Pastoral counseling has therefore grown in prominence because of its impacts on the spiritual well-being of people as Hill & Pargament (2003), rightly observed, "Spirituality is a critical aspect of human functioning, and its neglect can lead to spiritual struggles and decreased well-being." This paper explores why pastoral counseling is necessary today and how it functions in practice, using God's Care Missions as an illustrative case. The study combines a literature-driven conceptual analysis and Interviews with pastoral counselors, clients, other stakeholders and observations of the organization's operations. Pastoral counseling integrates psychological principles with theological resources to support persons' emotional, relational and spiritual well-being. It typically includes listening, scripture-based guidance, prayer, and referral to professional services as needed. American Association of Pastoral Counselors (2020), defined pastoral counseling as "a process in which a trained pastoral counselor uses theological and psychological insights to help individuals, couples, families, and groups to cope with spiritual and emotional struggles" Koenig (2012) asserted "Spirituality is a vital aspect of human health, and its integration into healthcare can improve mental and physical well-being". Pastoral counseling offers a unique and valuable approach to addressing the mental, emotional, and spiritual needs of individuals in the present generation

God's Care Missions is an incorporated religious organization with headquarters in Okpo, Kogi State, Nigeria. It is an interdenominational rural mission committed to reaching the lost and depopulating hell through evangelism, conferences, revival programs, and healing services. Founded by Evangelist Sunday Oguche, the mission has been active since 1997, focusing on various initiatives such as: Evangelism, Discipleship, Education, Training, Support for Vulnerable Groups etc. The Mission take her caring inspiration from the scripture, (Psalm 34:18-19 New International Version) "The Lord is close to the brokenhearted, and saves those who are crush in spirit. The righteous person may have many troubles, but the Lord delivers him from them all" to carry out her mission. Her public programs indicate both evangelistic and



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pastoral/discipleship emphases within the ministry. The role of pastor as a shepherd is critical in the church and the society. Pastors act as spiritual leaders, gatekeepers, informal therapists, community connectors and sometimes crisis responders. In contexts with limited formal mental-health infrastructure, pastoral counselors serve as frontline responders. Steven S. Ivy (2017) assert, “The various disciplines of practical theology encounter individuals, families, groups, and communities at their point of need with good news. Pastoral care, worship, and religious education are examples of practical theology. The primary means of delivering that good news is the person of the “pastor” who brings to “God’s people” care and comfort, challenge and transformation, reconciliation and justice”.

The pastoral counselor that would make meaningful impact is required to be equipped with resources for investigating the complexity of providing care and fostering communities of belonging across cultural differences. Aten & Leach (2009), insist, "Counselors must be aware of the spiritual and cultural contexts of their clients to provide effective care". Miller-McLemore, B. J. (2011). *Christian theology in practice: Discovering a discipline*. discusses the practical applications of Christian theology, including pastoral care and counseling. In her work she views pastoral care as a form of practical theology that requires a deep understanding of the complexities of human experience and the role of faith in shaping that experience. Louw, D. J. (2008). *Caring for the soul: A contemporary model for pastoral care*, presents a model of pastoral care that emphasizes the importance of spiritual care and healing. D.J. Louw's work on pastoral care emphasizes the importance of a holistic approach, considering the spiritual, emotional, and social components of individuals' lives. According to Louw, pastoral care should extend beyond individual counseling or spiritual advice within religious organizations and into the public sphere, addressing societal challenges and promoting overall well-being. While the above authors' work has contributed diversely to pastoral counseling and stand out as references for pastoral counselors; “assessment of pastoral counseling service delivery among Christian faithful through a focused case study of God’s Care Missions” remain a unique work based on its setting, practical expression of God’s Care Missions approach to pastoral Care.

Despite the growing prevalence of psychosocial problems such as depression, anxiety, family breakdown, and substance misuse in contemporary society, access to formal mental health services remains limited particularly in rural and underserved communities like Okpo, Kogi State. Meanwhile, faith communities and churches often serve as primary sites for help-seeking, highlighting the potential role of pastoral counseling. However, pastoral counseling often lacks formal recognition, standardized training, and integration with professional mental health systems potentially limiting its effectiveness and reach, yet every human need mental and physical well-being. Koenig (2012) assert, "Spirituality is a vital aspect of human health, and its integration into healthcare can improve mental and physical well-being."

Statement of the Problem

Despite the growing recognition of the importance of spirituality in mental health and well-being, many individuals in Okpo, Kogi State, Nigeria, and other parts of the world, continue to face spiritual struggles, trauma, and crisis, which can negatively impact their emotional and mental well-being. While pastoral counseling is a vital resource for addressing these needs, there is a lack of formal recognition, standardized training, and integration with professional mental health systems, potentially limiting its effectiveness and reach. Research Gaps includes, limited Research on Pastoral Counseling: There is a lack of research on pastoral counseling, particularly in the context of Nigeria and other developing countries. Lack of Evaluation of Pastoral Counseling Services: There is a lack of evaluation of pastoral counseling services, which can make it difficult to determine their effectiveness and identify areas for improvement. The purpose of this study is to assess pastoral counseling service delivery among Christian faithful through a focused case study of God’s Care Missions and to evaluate the impact and effectiveness of pastoral counseling on the spiritual and emotional well-being of individuals.

Objectives of the study

1. To investigate the role of pastoral counseling in addressing spiritual struggles, trauma, and crisis among individuals in Okpo, Kogi State, Nigeria.
2. To assess the effectiveness of pastoral counseling in improving the spiritual and emotional well-being of individuals who have received counseling services from God’s Care Missions.
3. To identify the challenges and limitations of pastoral counseling in the context of God’s Care Missions and to provide recommendations for improving the delivery of pastoral counseling services.



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Research Questions

1. What is the impact of pastoral counseling on the spiritual and emotional well-being of individuals who have received counseling services from God's Care Missions?
2. How effective is pastoral counseling in addressing spiritual struggles, trauma, and crisis among individuals in Okpo, Kogi State, Nigeria?
3. What are the challenges and limitations of pastoral counseling in the context of God's Care Missions, and how can they be addressed?

Hypotheses

- H₀₁: Pastoral counseling has a significant positive impact on the spiritual well-being of individuals who have received counseling services from God's Care Missions.
- H₀₂: Pastoral counseling is effective in addressing spiritual struggles, trauma, and crisis among individuals in Okpo, Kogi State, Nigeria.
- H₀₃: The challenges and limitations of pastoral counseling in the context of God's Care Missions include inadequate training and equipping of pastoral counselors, stigma and misconceptions about pastoral counseling, and lack of integration with professional mental health systems.

Methodology

The study employed a Quantitative Research Approach, utilizing a Descriptive Survey Design to examine the impact and effectiveness of pastoral counseling at God's Care Mission, Okpo. This design enabled the researchers to systematically describe the demographics, experiences, and perceptions of participants regarding pastoral counseling services. Data were collected through a Questionnaire Survey administered to 35 participants who had received pastoral counseling services from God's Care Mission, Okpo. The survey instrument was designed to gather information on participants' demographics, their experiences with pastoral counseling, the impact of counseling on their spiritual and emotional well-being, and their perceptions of the counseling services. The collected data were analyzed using Descriptive Statistics, including frequency, percentage, mean, and standard deviation. This analytical approach allowed the researchers to summarize and describe the characteristics of the sample, providing insights into the effectiveness and impact of pastoral counseling services.

Presentation of Results

Research Question 1:

What is the impact of pastoral counseling on the spiritual and emotional well-being of individuals?

Table 1: Impact of Pastoral Counseling on Spiritual and Emotional Well-being

N/S	Variable Name	Mean	Std. Deviation	Decision
1	Spiritual Well-being	4.25	0.75	Positive Impact
2	Emotional Well-being	4.10	0.85	Positive Impact

Filed survey, 2025

This table presents the results of the impact of pastoral counseling on the spiritual and emotional well-being of individuals. The table shows the mean and standard deviation of the participants' responses to two variables: spiritual well-being and emotional well-being. The results indicate that pastoral counseling had a positive impact on both spiritual well-being (mean = 4.25) and emotional well-being (mean = 4.10).



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Research Question 2:

Effectiveness of Pastoral Counseling in Addressing Spiritual Struggles, Trauma, and Crisis

Table 2: Effectiveness of Pastoral Counseling in Addressing Spiritual Struggles, Trauma, and Crisis

N/S	Variable Name	Mean	Std. Deviation	Decision
3	Effectiveness in addressing spiritual struggles	4.40	0.70	Effective
4	Effectiveness in addressing trauma	4.20	0.80	Effective
5	Effectiveness in addressing crisis	4.10	0.90	Effective

Filed survey, 2025

This table presents the results of the effectiveness of pastoral counseling in addressing spiritual struggles, trauma, and crisis. The table shows the mean and standard deviation of the participants' responses to three variables: effectiveness in addressing spiritual struggles, trauma, and crisis. The results indicate that pastoral counseling was effective in addressing spiritual struggles (mean = 4.40), trauma (mean = 4.20), and crisis (mean = 4.10).

Research Question 3: What are the challenges and limitations of pastoral counseling in the context of God's Care Missions, and how can they be addressed?

Table 3: Challenges and Limitations of Pastoral Counseling

N/S	Variable Name	Mean	SD	Decision
1	Inadequate training and equipping	4.20	0.80	Challenge
2	Stigma and misconceptions	4.00	1.00	Challenge
6	Lack of integration with professional mental health systems	4.10	0.90	Challenge

Filed survey, 2025

This table presents the results of the challenges and limitations of pastoral counseling. The table shows the mean and standard deviation of the participants' responses to three variables: inadequate training and equipping, stigma and misconceptions, and lack of integration with professional mental health systems. The results indicate that all three variables were identified as challenges and limitations of pastoral counseling, with mean scores ranging from 4.00 to 4.20

Hypothesis Testing

Table 5

N/S	Hypothesis	t-value	p-value	Decision
1	H1: Pastoral counseling has a significant positive impact on spiritual well-being	6.50	0.000	Supported
2	H2: Pastoral counseling is effective in addressing spiritual struggles, trauma, and crisis	12.50	0.006	Supported



3	H3: Challenges and limitations of pastoral counseling include inadequate training and equipping, stigma and misconceptions, and lack of integration with professional mental health systems	- -	Supported
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Filed survey, 2025

Based on the analysis in the hypotheses testing table, the decision is to NOT REJECT the hypotheses. In other words, the hypotheses are SUPPORTED.

Here's the explanation:

H1: Pastoral counseling has a significant positive impact on spiritual well-being

The p-value is 0.000, which is less than the significance level of 0.05. Therefore, the null hypothesis is rejected, and the alternative hypothesis is supported. This means that pastoral counseling has a significant positive impact on spiritual well-being.

H2: Pastoral counseling is effective in addressing spiritual struggles, trauma, and crisis

The p-value is 0.006, which is less than the significance level of 0.05. Therefore, the null hypothesis is rejected, and the alternative hypothesis is supported. This means that pastoral counseling is effective in addressing spiritual struggles, trauma, and crisis.

H3: Challenges and limitations of pastoral counseling include inadequate training and equipping, stigma and misconceptions, and lack of integration with professional mental health systems

Although there is no p-value provided for this hypothesis, the results indicate that the participants identified all three variables as challenges and limitations of pastoral counseling, with mean scores ranging from 4.00 to 4.20. Therefore, the hypothesis is supported.

Discussion of Findings

The study aimed to assess the effectiveness of pastoral counseling in improving the spiritual and emotional well-being of individuals who have received counseling services from God's Care Missions and to evaluate the impact and effectiveness of pastoral counseling on the spiritual and emotional well-being of individuals. The findings of the study suggest that pastoral counseling has a significant positive impact on the spiritual well-being of individuals, with a mean score of 4.25 and a standard deviation of 0.75. This is consistent with previous research that has shown the importance of spirituality in mental health and well-being (Hill & Pargament, 2003; Koenig, 2012). The study also found that pastoral counseling is effective in addressing spiritual struggles, trauma, and crisis, with mean scores ranging from 4.10 to 4.40. This is consistent with previous research that has shown the effectiveness of pastoral counseling in addressing spiritual struggles and trauma (Aten & Leach, 2009; Miller-McLemore, 2011). However, the study also identified several challenges and limitations of pastoral counseling, including inadequate training and equipping, stigma and misconceptions, and lack of integration with professional mental health systems. These challenges and limitations are consistent with previous research that has highlighted the need for adequate training and equipping of pastoral counselors (Louw, 2008).

The findings of the study suggest that pastoral counseling is a vital resource for addressing the spiritual and emotional needs of individuals, particularly in rural and underserved communities like Okpo, Kogi State, Nigeria. However, the study also highlights the need for addressing the challenges and limitations of pastoral counseling, including inadequate training and equipping, stigma and misconceptions, and lack of integration with professional mental health systems. The findings of the study have several implications for the development of pastoral counseling services in faith-based organizations. Firstly, the study highlights the importance of adequate training and equipping of pastoral counselors to address the spiritual



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and emotional needs of individuals. Secondly, the study suggests that pastoral counseling should be integrated with professional mental health systems to ensure that individuals receive comprehensive care. Finally, the study highlights the need for addressing stigma and misconceptions about pastoral counseling to increase its accessibility and effectiveness.

Recommendations

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

1. Pastoral counselors should receive adequate training and equipping to address the spiritual and emotional needs of individuals.
2. Pastoral counseling services should be integrated with professional mental health systems to ensure that individuals receive comprehensive care.
3. Efforts should be made to address stigma and misconceptions about pastoral counseling to increase its accessibility and effectiveness.
4. Further research should be conducted to explore the effectiveness of pastoral counseling in addressing spiritual struggles, trauma, and crisis in different contexts.

Conclusion

In conclusion, the study found that pastoral counseling has a significant positive impact on the spiritual well-being of individuals and is effective in addressing spiritual struggles, trauma, and crisis. However, the study also identified several challenges and limitations of pastoral counseling, including inadequate training and equipping, stigma and misconceptions, and lack of integration with professional mental health systems. The findings of the study have several implications for the development of pastoral counseling services in faith-based organizations and highlight the need for addressing the challenges and limitations of pastoral counseling.

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Analysis of Linear Equating System in ... Olutola, A. T., Et. al. (2025)

Analysis of Linear Equating in WAEC, NECO, and NABTEB Senior School Certificate Multiple-Choice Economics Examinations in North West, Nigeria

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Abstract

This paper investigated the analysis of linear equating method on WAEC, NECO, and NABTEB Senior School Certificate Multiple-Choice Economics Examinations in Northwest Nigeria. The “Non-Equivalent Anchor Test (NEAT) group Design” was adopted for this study. The population comprised 404,521 public senior secondary school students of 2023/2024 academic session and a sample of 1,532 SSII Economics students was drawn through multi-stage sampling procedure from the population. The instruments used for data collection were the adapted 2023 WAEC, NECO, and NABTEB SSCE multiple-choice Economics papers with reliability coefficient of 0.75, 0.89, and 0.88 respectively obtained by the researcher using split half method. The research questions were answered using descriptive statistics of mean and standard T-scores. Major findings revealed that (1) there is significant differences in difficulty between the pair of form A-C ($t=4.473=.000, p < 0.05$) and B-C ($t=4.375=.000, p < 0.05$), (2) there was no significant difference in the respondents performance on common items across the three examinations ($\bar{X}_{WA} = 2.121; \bar{X}_{NE} = 2.114; \bar{X}_{NA} = 2.504$), (3) while performance on unique items varied across the test forms ($\bar{X}_{WA} = 7.30 < \bar{X}_{NE} = 7.40 < \bar{X}_{NA} = 8.34$), with form C exhibiting the highest mean performance and form A the least performance (4) linear equating method revealed a positive linear relationship between raw scores and T-scores. The researchers concluded that form C (NABTEB) was distinctly easier, indicating significant differences from other forms (WAEC & NECO) that shown no statistical difference in students' ability or proficiency, that both test items are comparable. It was therefore recommended among others linear equating method for equating scores across these WAEC, NECO, and NABTEB Economics multiple-choice test should be considered.

Key Words: Economics, Multiple-choice Items, Linear Equating, WAEC, NECO, NABTEB

Introduction

Notably in the Nigerian educational system, different questions are used for Senior School Certificate Examination (SSCE) conducted by various credentialing awarding agency in a standardized examinations and there is no assurance that scores on these test forms are equivalent across the different examination bodies. Hence, different sets of test items might be easier or harder, which produces higher or lower scores across different test form taken by the candidates. Therefore, it is important to examine the quality of a test items over time when a standardized achievement test is administered consecutively with different test forms over several years (Wiberg & Von Davier, 2017). Tests are designed to measure the quality, ability, skill or knowledge of a sample against a given standard (Adom, Mensah, & Dake, 2020). Teachers' carry out a routine evaluation of school learning to achieve various objectives, but this is essentially internal. These internal evaluations go by such names as teacher-made tests, Continuous Assessment, School Based Assessment and local tests. For the conduct of external examinations, However, there are recognized bodies that carry this assignment out for the whole country (Nigeria) and award certificates to candidates at different levels. The National Examinations Council (NECO) and the West African Examinations Council (WAEC) and National Business and Technical Examination Board (NABTEB), are the bodies authorized by the Nigerian law to conduct the Senior School Certificate Examinations (SSCE), General Certificate Examinations (GCE) and other exams (Olutola,2015).

The West African Examinations Council (WAEC), the National Examinations Council (NECO), and the National Business and Technical Examinations Board (NABTEB) are the three main examination bodies that do conduct public examination in Nigeria and they play pivotal roles in administering Senior School Certificate Examinations to candidates. These examination bodies can be referred to as different test forms in test equating. A statistical process called equating can



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therefore, be used to adjust for differences in difficulty across alternate forms resulting in comparable score scales and more accurate estimates of ability (Albano, 2011). Ensuring the comparability of scores across these examinations is crucial for fairness and accurate assessment since their syllabi are prepared from the approved curriculum produced by the National Educational Research and Development Council (NERDC) for Senior Secondary Schools, this guides the teaching and learning processes in the classroom. Equating process is used to obtain comparable scores when more than one test forms are used in test administration and the goal of score equating is to allow the scores from both tests to be used interchangeably (Daramola, Owolabi, & Olutola, 2018). Equating various test form is necessary for any testing programme that continually generates new editions of test form and which the interpretation of test scores from these editions having same meaning overtime. Since testing programs nearly always need examinations that measure the same thing, but are composed of different questions (i.e, alternate forms of the same test). Equating process is therefore used to obtain comparable scores when more than one test forms are used in test administration, Daramola et al (2022). Test equating are highly essential because equating ensured a process that can converts scores on one form of a test to the score scale of another form. It is a family of psychometric approaches to align the numerical format of different measurement instruments (Kolen & Brennan, 2014). It is a linkage between two or more scores generated from different form of tests. Test equating as defined by Agah (2013), is aimed at putting the scores obtained by students from different forms of a tests on a common scale.

Meanwhile, there are two recognized theories that can be used in equating different forms of test and these include Item Response Theory (IRT) and Classical Test Theory (CTT). The Classical Test Theory (CTT) and Item Response Theory (IRT) are two popular statistical frameworks in educational measurement through which tests can be developed, validated, and finally used for assessing examinees performance. The Classical Test Theory (CTT) focuses on test level, while item response theory or IRT on the other hand, focuses on item level (Kolen & Brennan, 2014), it attempts to model the ability of a test taker and the probability of answering an item correctly based on the pattern of responses to all the items that constitute the test. Its ability parameter estimates are not test dependent and item parameter estimates are not group dependent. It overcomes the weaknesses of CTT with its ability to provide invariant item parameters. In Uysal and Kilmem (2016), opinion test developers attempt to prepare tests as similar as possible in terms of knowledge, skills and content, though, it is impossible to prevent changes in test difficulty and the differentiation of content and statistical qualities from one test format to another. But the variations in difficulty level and other statistical characteristics of different tests scores can be measured and controlled using test equating. However, literatures reviewed that the linear methods of equating is CTT equating approaches. In the context of educational testing, "linear equating" simply means a statistical method used to adjust scores from different versions of a test so that they are comparable. This is crucial when you have multiple test forms designed to measure the same construct, but which may vary slightly in difficulty. Its goal is to find a linear transformation that makes the scores from different forms statistically equivalent. According to Holland and Dorans (2006) as cited by Daramola et al., (2022) stated five requirements that are widely viewed as necessary for a linking to be an equating, these requirements are:

1. The Equal Construct Requirement: The two tests should both be measured of the same construct (e.g., latent trait, skill, ability).
2. The Equal Reliability Requirement: The two tests should have the same level of reliability.
3. The Symmetry Requirement: The equating transformation for mapping the scores of "Y" to those of "X" should be the opposite of the equating transformation for mapping the scores of "X" to those of "Y".
4. The Equity Requirement: It should be a matter of indifference to an examinee as to which of two tests the examinee takes.
5. The Population Invariance Requirement: The equating function used to link the scores of X and Y should be the same regardless of the choice of (sub) population from which it is derived.

Therefore, this study investigated the effectiveness of linear methods of equating test scores in WAEC, NECO, and NABTEB Economics Multiple Choice Test Items. This is essential for fair admissions processes, scholarship awards, and other high-stakes decisions based on equivalent test scores obtained by candidates and ultimately enhancing the validity and reliability of test results.



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Statement of the Problem

The educational system in Nigeria is characterized by the presence of multiple examination bodies, including the West African Examinations Council (WAEC), the National Examinations Council (NECO), and the National Business and Technical Examinations Board (NABTEB), each offering Senior School Certificate Examinations in Economics just like every other subject area. These examinations serve as crucial determinants of students' academic progression and future opportunities. Moreover, the performances of North West students in achieving five (5) credits and above including English language and Mathematics is contrary to expectations when compared to other states of the federation in Nigeria. Likewise, researchers have different views about the quality of the Senior Secondary School Certificate Examinations in Nigeria because it has been observed that candidates, educational institutions, employers of labour and other end users have preference for certificates of certain examination bodies when compared to others (Olatunji, 2015). Also, Olutola (2011), Olatunji (2007) and Alfred (2011) remarked that the standard of SSCE conducted by NECO is low compared to SSCE conducted by WAEC. Therefore, this study plumb into the qualities of WAEC, NECO and NABTEB (SSCE) test items on Economics Multiple choice papers by applying Linear equating method to analyze the test forms in North West, Nigeria. This allowed for comparability of scores and improve the overall quality and consistency of examinations, ensuring that all students are evaluated fairly and that the results are comparable, regardless of which examining body administers the tests.

Objectives of the Study

The main aim of this study was the analysis of linear equating of test forms across WAEC, NECO and NABTEB Senior School Certificate Examination (SSCE) of Multiple-Choice Test Items on Economics in North - West, Nigeria.

Specifically, the study sought to find out the:

1. form of student's performance on WAEC, NECO and NABTEB Economics multiple choice papers in North West, Nigeria.
2. pattern of students' performance on the common items of WAEC, NECO and NABTEB Senior School Certificate Multiple Choice papers in Economics in North West, Nigeria.
3. pattern of students' performance on the unique items of WAEC, NECO and NABTEB Senior School Certificate Multiple Choice papers in Economics in North West, Nigeria.
4. results of linear equating of WAEC, NECO and NABTEB Senior School Certificate Multiple Choice Test Items in Economics papers using standard score deviates in North West, Nigeria.

Research Questions

This study provided answers to the following research questions:

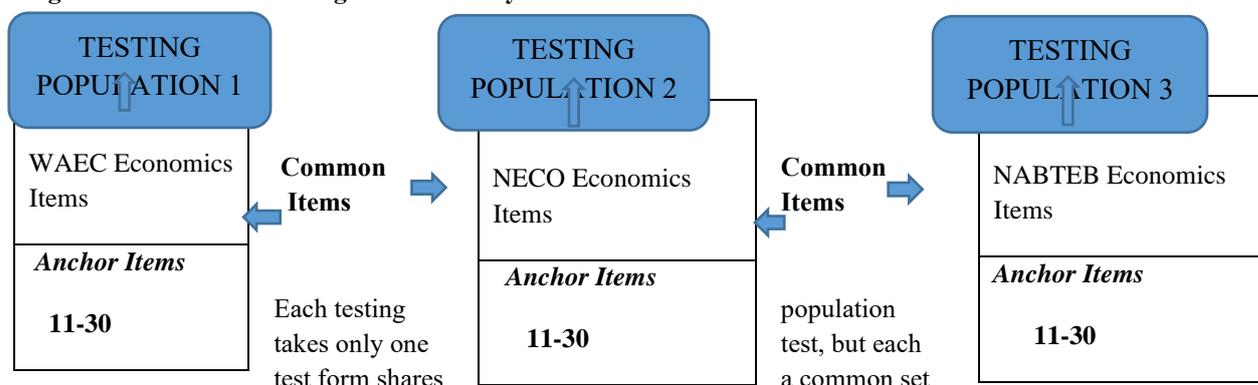
1. What is the form of student's performance with regards to WAEC, NECO and NABTEB test form in Economics multiple choice papers in North West, Nigeria?
2. What is the pattern of student's performance on the common items of WAEC, NECO and NABTEB Senior School Certificate Multiple Choice papers in Economics in North West, Nigeria?
3. What is the pattern of student's performance on the unique items of WAEC, NECO and NABTEB Senior School Certificate Multiple Choice papers in Economics in North West, Nigeria?
4. What are the results of linear equating of WAEC, NECO and NABTEB Senior School Certificate Multiple Choice Test Items in Economics papers using standard score deviates in North West, Nigeria?

Methodology

The researcher adopted Non-Equivalent Groups Anchor Test (NEAT) design for this study, also known as Common-items Non-Equivalent Group (CINEG) design, is said to be the most flexible tool available for equating tests (Kolen & Brennan, 2014). Shown below is an Anchor test design:

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Figure 1: Anchor Test Design for the Study



of test questions (*anchor items*).

Source: Researcher schema plan (2024)

The population of the study comprises of four hundred and four thousand, five hundred and twenty-one (404,521) public senior secondary school students across the seven states that made up North West geopolitical Zone, Nigeria. Among these students, there are two hundred and thirty-four thousand, five hundred and fifty-two (234,552) males and one hundred and sixty-nine thousand, nine hundred and nine (169,969) females. The sample size of one thousand, five hundred and thirty-two (1,532) Senior Secondary School II (SS2) Economics students were derived from a target population of two hundred and sixteen thousand and one (216,001) Senior Secondary School II (SS2) students in eighteen (18) sample schools from three (3) selected old states such as Kaduna, Kano and Sokoto States respectively in North West geopolitical Zone, Nigeria, by adopting multistage sampling techniques.

The researcher determined the content validity and as well the reliability coefficient of the instruments and obtained Coefficients of content validity 0.71, 0.68 and 0.65 respectively by calculating the percentage-difference of the coefficient of correlation between the test forms and syllabi contents with a formula $r_{ts} = 1 - \sum |d| / 100$, (where r_{ts} is the correlation between test and syllabus contents), d is the difference (ignoring signs) between corresponding percentage weightings of each of the WAEC, NECO and NABTEB economics topics and the contents of the test. Also, the instrument were given to Economics experts and as well test and measurement experts (experienced teachers) to give keys to the items. While reliability coefficient for test form A was 0.75, form B was 0.89 and form C had 0.88 using split half method of internal consistency. The instrument for data collection were the adapted 2023 WAEC, NECO, and NABTEB Economics multiple-choice papers which comprises of unique and anchor items that were positioned as a block at numbers 11 - 30 in each test form for this study. This is referred to as appended internal anchor (Ryan, 2011). The data collected for this study were subjected to descriptive statistics of mean, standard deviation and standard score deviate of T-Score to answer the four generated research questions with the aid of SPSS Version 23 to equate the scores obtained from the test forms.

Presentation of Results

Research Question One: What is the form of student's performance with regards to WAEC, NECO and NABTEB test form on Economics multiple choice papers in North West, Nigeria?

Students' scores in test form A, B, and C are independently summed and their mean and standard deviation are computed.

Table 1: Form of student's performance with regards to WAEC, NECO and NABTEB test form

Test forms	No of Students	Minimum	Maximum	Mean	Std. Deviation
WAEC (A)	511	2	28	12.28	4.022
NECO (B)	510	2	36	11.92	4.463
NABTEB(C)	511	1	36	13.49	5.692

Table 1 above showed the result of mean form of student's performance with regards to the various test form under consideration. The mean form of students' performance in test form A was 12.28, while the mean form of student's performance in test form B and C are 11.92 and 13.49 respectively. Respondents' highest scores in the three test forms were 28 and 36 respectively and their lowest score was 1 and 2. Also, test form A had standard deviation of 4.022, while test form B and C had 4.463 and 5.692 as their standard deviation respectively.



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To further understand the differences between the test forms, t-test were perform to compare the means of each pair of forms. The results of the t-test are as follows in table 2:

Table 2: Paired Samples t- Test of Form A-B, A-C and B-C

Test Form Pair	Mean	Std. Deviation	Std. Error Mean	T	Df	Sig	Decision
A-B	0.355	5.708	0.253	1.404	509	0.161	NS
A-C	-1.213	6.132	0.271	-4.473	510	.000	Sig
B-C	-1.553	0.289	0.289	-5.375	509	.000	Sig

$\alpha = 0.05$, NS= non-significant

T-tests were conducted to compare the means of each form pair. The t-values represent the difference between equated test forms and a higher absolute value of the t-value suggests a greater difference. Results in Table 3 above showed that there is significant differences in difficulty between the pair of form A-C ($t=4.473=.000$, $p < 0.05$) and B-C ($t=5.375=.000$, $p < 0.05$), while a pair of A-B form showed no significant difference ($t = 1.404=.161$, $p > 0.05$), this meaning that there is no statistical difference in students' ability or proficiency in Economics multiple-choice test items of form A and B (WAEC & NECO) in year 2023. While the pairs of other test forms A-C and B-C indicated significant differences, thus equating process can take place using Linear equating methods.

Research Question Two: What is the pattern of student's performance on the common items of WAEC, NECO and NABTEB Senior School Certificate Multiple Choice papers in Economics in North West, Nigeria?

Pattern of students' scores in common items of test form A, B, and C are independently summed and their mean and standard deviation are computed.

Table 3. Mean of Respondents' Pattern of Performance in Common Items

Test forms	No of Students	Minimum	Maximum	Mean	Std. Deviation
WAEC (A)	511	0	13	4.94	2.121
NECO (B)	510	0	17	4.55	2.114
NABTEB (C)	511	0	18	5.10	2.504

Table 3 above showed the result of mean performance of respondents in common items test. Test form A (WAEC) mean performance was 4.94, while the mean performance in test form B (NECO) and C (NABTEB) are 4.55 and 5.10, (indicating equal mean of 5 if round off to 1 sig. fig.) respectively. Respondents' highest scores in the three test forms were 13, 17 and 18 respectively and Zero (0) was their lowest score. Also, test form A had standard deviation of 2.121, while test form B and C had 2.114 and 2.504 as their standard deviation respectively.

One-way ANOVA was conducted if there is any significant difference in the test-takers' performance at 0.05 level of significant in the common items. This is to ensure that condition for equating using Non-equivalent method is not violated, Check the table 4 below:

Table 4: ANOVA Summary Table of Respondents' Performance in Common Items

	Sum of Squares	Df	Mean Square	F	Sig.	Decision
Between Groups	10.331	3	10.331	2.314	1.909	NS
Within Groups	8012.812	1526	15.249			
Total	8023.143	1529				

$\alpha = 0.05$, NS= non-significant

Table 4 above reveals an F-value of 2.314, which is not significant at the 0.05 alpha level, since the p-value of (1.909) is greater than 0.05 ($1.909 > 0.05$). This therefore, implies that test-takers are not statistically different in proficiency/ability in common items of Economics multiple-choice test items conducted by the WAEC, NECO, and NABTEB in 2023 Senior School Certificate Examination. This is a further confirmation of the usefulness of this test equating process.



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Research Question Three: What is the pattern of student’s performance on the unique items of WAEC, NECO and NABTEB Senior School Certificate Multiple Choice papers in Economics in North West, Nigeria?

The pattern of students’ scores in unique items of test form A, B, and C are independently summed and their mean and standard deviation are computed to determine the pattern of respondents.

Table 5. Descriptive Statistics of the Pattern of Students’ Performance on Unique Items

Test forms	No of Students	Minimum	Maximum	Mean	Std. Deviation	Skewness	Kurtosis
WAEC (A)	511	0	19	7.30	2.977	.310	.197
NECO (B)	510	0	24	7.40	3.524	.616	1.182
NABTEB (C)	511	0	22	8.34	4.178	.645	.157

Table 5 showed the statistical pattern of student’s performance on the unique items. Test form C with a mean performance of 8.34, standard deviation of 4.178, positive Skewness of .645 and kurtosis of .157 indicated best performance. Form C has the highest Skewness .645, suggesting a greater concentration of high scores and have Kurtosis values of .157 that is closer to zero. Test form B with a mean performance of 7.40, standard deviation of 3.524, positive Skewness of .616 and kurtosis of 1.182 indicated a better performance. Form B Kurtosis has a more peaked distribution with heavier tails compared to forms A and C. While testees who did test form A had the least performance with mean of 7.30, standard deviation of 2.977, positive Skewness of .310 and kurtosis of .197. Forms A and C have kurtosis values closer to zero, suggesting a distribution closer to a normal distribution.

Research Question Four: What are the results of linear equating of WAEC, NECO and NABTEB Senior School Certificate Multiple Choice Test Items in Economics papers in North West Nigeria, using standard score deviates?

Here, students’ scores in test form A, B, and C (WAEC, NECO and NABTEB) are independently standardized using T-score. The T-scores is used as a scale on which examinees' raw score in each of the test form were compared.

Table 6: Linear Equating of WAEC, NECO, and NABTEB Economics SSCE Multiple Choice Papers

T-SCORE	Students’ raw scores in WAEC (A)	Students’ raw scores in NECO (B)	Students’ raw scores in NABTEB (C)
25	2	-	-
26	-	-	-
27	-	-	-
28	3	-	1
29	-	-	-
30	4	2	2
31	-	-	-
32	-	3	3
33	5	-	4
34	-	4	-
35	6	-	5
36	-	5	-
37	-	-	6
38	7	6	7
39	-	-	-
40	8	7	8
41	-	-	-
42	-	8	9
43	9	-	10
44	-	9	-
45	10	-	11
46	-	10	-
47	-	-	12
48	11	11	13
49	-	-	-
50	12	12	14
51	-	-	-
52	-	13	15



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53	13	-	16
54	-	14	-
55	14	-	17
56	-	15	-
57	-	-	18
58	15	16	19
59	-	-	-
60	16	17	-
61	-	-	-
62	-	18	21
63	17	-	22
64	-	19	-
65	18	-	23
66	-	20	-
67	-	-	24
68	19	21	25
69	-	-	-
70	-	22	26
71	-	-	-
72	-	23	27
73	21	-	28
74	-	24	-
75	22	-	29
76	-	26	-
77	-	-	-
78	23	-	-
79	-	-	-
80	-	27	-
81	-	-	-
82	-	-	-
83	25	-	-
84	-	-	-
85	-	-	-
86	-	-	-
87	-	-	36
88	-	-	-
89	-	-	-
90	28	-	-
91	-	-	-
92	-	-	-
93	-	-	-
94	-	34	-
95	-	-	-
96	-	-	-
97	-	-	-
98	-	36	-

However, in order to establish the outcome of Linear Equating under the NEAT design, the summary of equated scores of WAEC, NECO and NABTEB are presented in Table 7 below:

Table 7: Linear Equating Comparison Summary of Economics SSCE Multiple Choice Papers.

T-SCORE	Students' raw scores in WAEC (A)	Students' raw scores in NECO (B)	Students' raw scores in NABTEB (C)
30	4	2	2
38	7	6	7
40	8	7	8
48	11	11	13

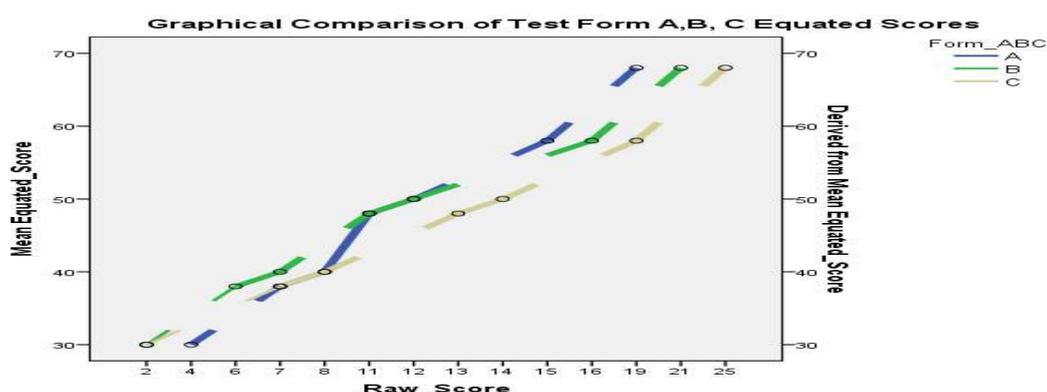


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50	12	12	14
58	15	16	19
68	19	21	25

The result of table 7 above revealed linear relationship between test Form A (WAEC), B (NECO) and C (NABTEB) and the resulting standard score deviate across the test forms under the NEAT design, meaning that equal increases in form A, B, and C lead to equal increases in T-scores. However, when the Students' raw score in test form A (4), B and C were (2) respectively, the corresponding standard score deviate is (30), when A (7), B (6) and C (7), the corresponding standard score deviate is (38), when A (8), B (7) and C (8), the corresponding standard score deviate was (40), also, when A and B were (11) respectively and C having (13), the corresponding standard score deviate is (48). Linear equating also revealed that standard score deviate of (50) corresponding to form A and B (12) respectively with C having (14), while standard score deviate of (58) corresponding to form A (15), B (16) and C (19) respectively, while standard score deviate of (68) was equivalent to form A (19), B (21) and C (25) respectively. Thus, T-score increases as the value of test form A, B and C increases suggesting a positive relationship using Linear equating under NEAT design. This result further revealed that linear equating of WAEC and NECO Economics multiple choice items were more equivalent when compared to NABTEB multiple choice items as display in figure 2 line graph below.

Figure 2: Line Graph of linear equating showing equated scores from test forms A (WAEC), B (NECO) and C (NABTEB) SSCE Economics multiple choice papers



Graph presented in Figure 2 above showed the scores obtained from the three test forms. Test form C had higher values of equated scores 25, while test forms A and B had very close values, 19 and 21 respectively. It can be said that the two test forms (A & B) produced almost equivalent scores.

Findings of the Study

The key results of this study are:

1. There was significant differences in difficulty between pair of forms A-C and form B-C, but no significant difficulty differences in form A-B at 0.05 level because the test forms appear to be equivalent.
2. There was no significant differences in examinee proficiency on common items across the three test forms.
3. Performance of testees on unique items varied significantly across the three test forms. It revealed that Form C (NECO) had the highest performance, while form A (WAEC) had the lowest.
4. Linear equating result indicated that T-scores increased as WAEC, NECO, and NABTEB raw scores increases, which suggests positive linear relationship between the forms, meaning each form contributes to the overall T-score.

Discussion of Findings

The results of the study provided an overview form of students' performance on three different test forms A (WAEC), B (NECO) and C (NABTEB) SSCE of the year 2023 in Economics multiple-choice test items. The results of test forms A, B, and C revealed some differences in difficulty and variability, suggesting that examinees differed in their proficiency level. Form C appears to be the easiest, with the highest mean score of (13.49), Form B seems to be the most difficult, with the lowest mean score (11.92), while Form A falls in between, with a mean score of (12.28), indicating moderate performance of test takers. Also, the standard deviation of test Form C shows the highest variability in scores (5.692), indicating a wider range of performance, Form A has the lowest variability of (4.022), suggesting a narrower range of



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scores, while Form B falls between A and C in terms of variability (4.463). However, to further understand if there are differences between the test forms (A,B &C), t-tests were conducted to compare the means of each form pair and the resulted t-test revealed that Form C is significantly different from both Form A and Form B, with pair of form A-C ($t=4.473=0.000$, $p < 0.05$) and pair of B-C ($t=4.375=0.000$, $p < 0.05$). These p-values are less than the significance level of 0.05, indicating that the differences between a pair of forms A-C and as well forms B-C are statistically significant. This finding is supported by the study of Alfred (2013) that there is a significant difference in the difficulty level of Economics multiple choice items conducted by WAEC, NECO and NABTEB. Therefore, the researcher considered linear equating methods to adjust for these differences due to the significant differences between Form C and the other two forms, as direct score comparisons may not be appropriate. While a pair of form A-B showed no significant difference ($t=1.404=.161$, $p > 0.05$), which means that there is no statistical difference in students' ability or proficiency in Economics multiple-choice test items of WAEC and NECO in year 2023. Hence, the two examinations could be used interchangeably. The finding corroborated those of Bandele and Adewale, (2013) where they submitted that there is no significant difference in the difficulty level, reliability and validity coefficients of mathematics items constructed by WAEC, NECO and NABTEB.

The result of the common items revealed that respondents are similar in proficiency/ability. Thus, test forms A, B and C (WAEC, NECO & NABTEB) had their mean 2.121, 2.114 and 2.504 respectively, which are not significant at 0.05 alpha level. This suggested that the average difficulty levels of the year 2023 Economics multiple-choice test items conducted by WAEC, NECO, and NABTEB (SSCE) are the same under the common items and could be used interchangeably. The inclusion of common items is to ensure that the conditions for carrying out scores equating for WAEC, NECO and NABTEB multiple choice items in Economics was not violated. Therefore, this finding is in line with the submission of Doran, Moses and Eignor (2010) that test-takers that take different test forms are the same in proficiency, if the test-takers have the same distribution of common items scores on different test forms taken. But the finding is contrary to the study of Arokoyo (2021) that examinees differed in their proficiency level because the mean performance on their common items scores on the three test forms A, B and C were 5.46, 6.04 and 7.36 respectively, with submission that, the result might be attributed to differences in the proficiency level of testees who sat for the three test forms. Meanwhile, differences in difficulty are what test score equating take care of but, differences in examinees ability or proficiency are a confounding factor that needs to be eliminated before the equating process can take place Daramola et al. (2022).

In unique items, this study revealed that there were differences in the performance of examinees across the three test forms. The unique items of test forms A, B and C had mean performance of 7.30, 7.40 and 8.34 respectively, with form C having the highest mean (8.34) and form A having the lowest (7.30). This suggests that Form C might be slightly easier than the other two forms. Also form A, B and C revealed standard deviation of 2.977, 3.524 and 4.178 respectively, with scores on Form C are mostly spread out (4.178) and scores on Form A are the least spread out (2.977). This implies that there is more variation in the performance on Form C. This finding is consistent with Kolen and Brennan's (2004) submission that it is virtually impossible to construct multiple forms of tests that are strictly parallel. Hence, equating is necessary because it adjusts for differences in difficulty among or across test forms constructed to be similar in difficulty and content just like the senior school certificates examinations investigated. The finding also corroborated those of Daramola et al, (2022) and Arokoyo, (2021) where they submitted in their separate studies in Economics and Chemistry that there were differences in the performance of examinees across the three test forms in unique items.

Results from linear equating between test Form A (WAEC), B (NECO) and C (NABTEB) Senior School Certificate Economics multiple choice papers with the use of standard T-score deviates showed that T-scores increases as the values of WAEC, NECO and NABTEB increases after the transformation, suggesting a positive linear relationship between the forms, meaning each form contributes to the overall T-score. The T-score increment are generally consistent, reinforcing the assumption of linearity in equating process, though, differences observed in T-scores at different score levels suggest the relative difficulty and contribution of each test form. Findings on linear equating of WAEC, NECO, and NABTEB reveal a low score range of 4 in WAEC, 2 in both NECO and NABTEB respectively corresponding to T-score of 30, while the mid score range is 12 in both WAEC and NECO respectively and NABTEB having 14 corresponding to average T-score of 50, suggesting a balance level of performance. And the highest raw score of 19, 21, and 25 in WAEC, NECO and NABTEB respectively corresponding to a T-score of 68, indicating above average performance.



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Therefore, the relatively even increases in T-score (except for minor variations) reinforce that each test form contributed equally or proportionally to the equated score which are comparable in difficulty when adjusted using the linear model. This finding is in line with the studies of Daramola et al. (2022) and Arokoyo (2021) that there are closely equivalent scores in WAEC and NECO when compared to NABTEB Economics (SSCE) papers which can be attributed to a relatively long period of operation of these two Senior School Certificate Examination bodies. This finding also corroborates the assertion of Obinne, Nworgu, and Umobong (2013) that there is no significant difference in the DIF of Biology tests conducted by WAEC and NECO which is also supported by the submission of Obinne (2011) that Biology test conducted by WAEC and NECO were equally reliable. But the finding is contrary to that of Olutola (2011) who found out that WAEC have more difficult items than NECO multiple choice Biology items.

Conclusions

The WAEC, NECO, and NABTEB SSCE on Economics multiple-choice tests form of year 2023 were analyzed using linear equating method in North-West Nigeria. However, based on the findings from this research work, the researchers therefore concluded that form C (NABTEB) was distinctly easier, indicating significant differences from test form A and B (WAEC & NECO) that shown no statistical difference in students' ability or proficiency, as both test items are comparable and of similar standard on the Economics multiple-choice items. Conversely, no significant differences in examinee proficiency on common items across the three test forms, while respondents on unique items performed differently across test form A, B and C respectively. Also, the researcher concluded that the linear equating method was found to be consistent and précised while showing a positive linear relationship between the forms, with T-scores increasing as WAEC, NECO, and NABTEB raw scores increased. This indicates that each form contributes to the overall T-score, supporting the idea that the tests measure similar underlying constructs and that the linear equating method is suitable for these forms.

Recommendations

1. The researcher recommends a thorough analysis of form C's content, question types, and cognitive demands. Then Compare C to forms A and B to identify the source of the difficulty difference.
2. Despite the consistency of the common items in this study, the researcher still recommends a periodic review of the alignment of future test form with the curriculum to ensure that the same intended constructs are measure continuously.
3. The researcher recommended a detailed analysis of the unique items to further understand why testees' performance on unique items varied significantly across the three test forms. This is vital for future test development.
4. The researcher recommends the establishment of regulatory body to standardize and monitor examinations conducted by these examining bodies in Nigeria.
5. After considering linear equating appropriateness in this context, the researcher recommended linear equating method for equating scores across these WAEC, NECO, and NABTEB Economics multiple-choice test,

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Qualitative Study on management of ... Gumbi, S. U. & Usman, A. N. (2025)

Qualitative Study on management of Primary School level of Education in Nigeria: Problems and Prospects

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Abstract

*Primary schools in Nigeria are facing a lot of challenges regarding management over the years. However, headteachers are charged with the responsibility of overseeing and managing the affairs of their respective primary schools. Based on this the paper is titled *Qualitative Study on management of Primary School level of Education in Nigeria: Problems and Prospects*. Therefore, concept and objectives of primary education, concept of management were highlighted. Management of Primary Education in Nigerian Primary Schools, ways by which primary schools are managed such as; management of human resources, school records, school facilities, school financial resources and primary school curriculum. Challenges facing management of primary education were also explained and these are; inadequate funding, head teachers' factor, lack of cooperation by the teachers, inadequate facilities, politically motivated appointment. The paper recommended among the following ' Government should ensure fairness and impartiality in the appointment of primary school teachers, Sustainable and adequate funding of primary schools should be provided by stakeholders and headteachers should discharge their duties with integrity and fairness, treating all subordinates equally.*

Keywords: Headteachers, primary school management, Teachers, School resources.

Introduction

Primary schools in Nigeria are facing a lot of challenges regarding management over the years; it is a formal organization which requires careful management considering its importance and the major concern of each nation. Primary education is the foundation upon which all other system of education relied on. Bearing this in mind, Primary school requires effective management to achieve the goal it is set to achieve. This is because, school is a goal oriented organization that has reason to exist and operate. As a result of this, primary school management is destined for identifying, planning, organizing, controlling, coordinating, directing and budgeting the already allocated primary schools' resources. Moreover, Management is a universal and unavoidable organizational process by which an individual or a cooperative body relates and directs actions and resources to achieve a common goal. However, Ofoegbu (2014) in Nnadi, (2021) defined management as a universal and unavoidable organizational process by which an individual or a cooperative body relates and directs action and resources to a common goal. Similarly, management is the utilization of physical and human resources through co-operative efforts and accomplished by performing the function of planning, staffing, directing and controlling of all the activities in the school. Headteachers are the overseers and custodians of school resources. The resources are provided and shared to school for effective implementation of primary school curriculum. Thus, the headteacher is destined to maintain and utilize what is available in the school. Therefore, Headteacher is the overseer and chief observer of the school, he lead and guide teaching and non-teaching staff, maintain and store facilities allocated to his school, coordinate the implementation of primary school curriculum, ensure peace and safety within the school environment. Delegate power and responsibilities to the deserving teachers. The school head ensures school-community relationship through Parent Teachers' Association (PTA), School Based Management Committee (SBMC) and other medium that help in promoting high moral and academic standard among staff and pupils, Headteachers should be accessible and approachable by teachers, non-teaching staff, pupils and members of the community. He should also make school facilities available for community. The community is to be charged a stipend for using school facilities and arranged



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to be responsible for any damage. Primary school is a formal organization that requires effective management and administration.

Conceptual Clarification

The concept of Primary education, management and primary education management are interrelated concepts that form the foundation and backbone of effective educational administration. However, concept of Primary education, objectives of primary education, concept of management, management of primary education, and challenges of primary education were explained one after the other.

Concept of Primary Education

The first formal organization a child encountered is primary school. Primary school is a formal institution that mould pupils' character and prepare them to face any challenge they may encounter in their future. Similarly, it is expected that pupils will acquire life skills through interaction with teachers, colleagues and school environment. Similarly, Primary Education is the foundation of formal education on which the subsequent level of the nation's education rests, the success or failure of other levels of education depends on it (Gumbi and Ahmed 2017). Therefore, it requires effective management by the stakeholders. These stakeholders are ordained to make wonders in supporting primary school to flourish. Primary school is a system comprising different and multiple components ranging from teachers, pupils, school buildings, school farm and garden, school records, primary school curriculum, sports, school facilities, quality assurance, school safety and security that requires special attention by the headteachers.

Objectives of Primary Education

1. Inculcate permanent literacy, and numeracy and the ability to communicate effectively;
2. Lay a sound basis for scientific, critical and reflective thinking;
3. Promote patriotism, fairness, understanding and national unity;
4. Instill social moral norms and values in the child;
5. Develop in the child the ability to adapt to the changing environment; and
6. Provide opportunities for the child to develop life manipulative skills that will enable the child function effectively in the society within the limits of the child's capability. (FRN 2013).

In order to achieve these objectives, Headteachers should demonstrate and ensure effective and efficient management delivery.

Concept of Management

Management is different thing to different people. However, management is the process of designing strategies that allow all the human, information, technological, and financial resources of the organizations to work together and harmoniously in the achievement of the proposed objectives ... Management exercises its function through the alignment of critical elements such as the mission, vision, values, strategies, and tactics ... that allow the optimization of the diverse resources of the company. (Lopez Morales, 2023). In line with this definition, Management connotes the planning, directing and coordination of school activities in order to achieve the desired goal. Furthermore, Invezz (2024) opined that management refers to the process of planning, organizing, leading, and controlling resources within an organization to achieve specific goals and objectives efficiently and effectively. Nevertheless, Kaehler & Grundei, from *The Concept of Management: In Search of a New Definition* (2019) posited that management is a steering influence on market, production and/or resource operations in an organization and its units that may address both people and non-people issues and is exerted by multiple organizational actors through either anticipatory norm-setting or situational intervention with the aim of achieving the unit's objectives.

Management of Primary Education

Management of primary school entails planning, organizing, coordinating, directing, guiding, reporting and controlling primary school activities to achieve specific goals and objectives efficiently and effectively. However, Obed-Chukwuka and Atakpo (2022), defined management of primary education as a "holistic approach" that includes structuring the primary education system, setting goals, supervising and inspecting schools, planning, managing human and material resources, and ensuring adequate facilities, qualified teachers, and continuous monitoring. Furthermore, management of primary education is connected to ensuring effective student-centred learning, maintaining appropriate teacher-student ratios, and adopting relevant digital literacy skills; the definition implicitly includes supervising staff, managing learning environment,



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and adapting management practices to technological tools. (Elenwo, 2025) However, primary education management in terms of its role in achieving educational quality entails planning and implementing programmes, supervising teaching and learning, managing resources (human, material, financial), and ensuring the policies and school practices align to produce quality outcomes. (Jabborova & Pardaboyeva, 2023)

Management of Primary Education in Nigeria

The following are the ways by which a primary school is managed; Management of human resources, school records, School facilities, school financial resources and primary school curriculum. These will be explained vividly.

Management of Human Resources in Primary school

Human resources refer to personnel management, manpower management, staff management and to some administration. Management of human resources focused on the people side of management, seeking to ensure that the objectives. Human resource management is beyond effective human utilization in school rather, harnessing the total human skills, abilities, talents, attributes, attitudes to achieve educational objectives. Primary school is a goal-oriented institution that depend on its human resources to operate and function effectively. These human resources are teaching staff, non-teaching staff and pupils. It depends on how these resources are being used to determine the success or failure of the system. In relation to this, Manga (2015) The management of all the staff in a school is crucial role of the head master and school principal. Teachers in particular need to be properly administered if the goals of any school are to be realized. Furthermore, FRN, (2013) revealed that the success of any system of education is hinged on proper planning framework, efficient administration and adequate financing. However, Pupils are said to be the centre and target of the education process. The pupils are at the centre of the education process, administrative actions should aim at developing their total personality, in deriving this, the headmaster or principal observe pupils population to ensure that the school overpopulated to unmanageable proportions, the head teacher does that by conducting regular consensus to know the exact population of the pupils in terms of age, gender, religion, classes so as to know the flow of primary school pupils in and out of the school. Manga (2015).

Management of Records

There are a variety of reasons why organizations must manage and maintain their records properly irrespective of whether they are private or public. Records management practices hold keys to evidence-based governance, accountability, transparency, protection of rights, fostering social justice and preserving corporate memory. Records have to be created, classified, arranged, described, appraised, protected and made accessible if they are to serve some of these functions (Matina, & Ngulube 2019). In addition to this, Alabi (2017) stresses that effective records management is essential for the organized administration of educational institutions

School records are those records schools provided and kept for future references and decision making. Jumare (2017) In the same vein, Durosaro & Ogunsanju (2002) Defined school records as official copies or transcripts of proceedings of actions, events or other matters kept by the school manager. Furthermore, primary school records are created, protected and kept for reference. Records are the basic requirements and very important in each school. As a result of this, head teachers are charged with the roles and responsibility of regular check of records, organizing workshop for teachers within the school on it, protect and provides facilities for record keeping, ensure that only authorized person have access to records, ensures effective provision of records when needed. This will only be possible when they make provision for files, cupboards and cabinet, computer, cloud storage services (e.g., Google Drive, Dropbox) stores and notice board in their respective primary schools.

Management of facilities

Primary school facilities play a vital role in achieving the main goal of primary school. In Nigeria today, the main objective of utilizing primary school facilities is to supply a concrete basis for enhancing curricular and extra-curricular activities. However, primary school facilities include buildings such as classrooms, assembly halls, libraries, and workshops, instructional materials such as audio, visual and audio-visual learning materials, devices such as modern educational hardware and their software in the form of magnetic tapes, films and transparencies. Educational facilities therefore, are the materials that facilitate teaching and learning processes in primary school setting. It is the responsibility of primary school administrator to appoint and delegate power to teachers so as to reduce the work load and to be in charge of the



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available facilities. These officers help in maintaining, servicing, repairing, cleaning, supervise the renovation and refurbishing of primary school facilities in order to protect them (facilities) from damage and destruction.

Management of financial resources

This is another important aspect of primary school management. Primary education finance is the process of raising and spending money for the purpose of promoting teaching and learning in primary school. In line with this, Ogbannaya (2000) opined that education finance is a process by which tax revenues and other sources are derived for the establishment and operation of educational institutions, as well as the process by which these resources are allocated to the institutions for educational use. In the same vein, Jumare, (2016) described educational finance as funds generated by educational institutions through Federal, State or Local Governments grants, internally generated funds (through business, consultancy services, sales of forms and students registration fees among others) donations within and outside Nigeria and any other fund used to achieve educational goals. From this conception, Primary education finance is the process of raising funds derived from the source, in order to run the affairs of primary school. The sources raised through federal, state and local government, Non-governmental organizations such as UNESCO, USAID, UNICEF, TASSA FAO etc., PTA and SBMC, Capital Grant, Proceed from primary school activities, community effort and donations, property taxes, old boys/Alumni are to be utilized, spend judiciously by the primary school management so as to provide conducive school environment that promote teaching and learning.

Management of Primary School Curriculum

Curriculum in primary school is the bedrock and foundation of school programmes. Primary school curriculum encompasses all the curricular and extra-curricular activities that requires planning, coordination, organizing, directing, and implementing educational programmes to achieve learning objectives. However, Curriculum management is an essential component of educational institutions, incorporating the design, implementation, monitoring, and revision of educational programs. Effective curriculum management in Primary school ensures that educational goals are met, teaching methods are up-to-date, and students are equipped with the necessary skills and knowledge to succeed in their academic and professional lives. This article explores what curriculum management entails, outlines best practices, and highlights emerging trends and challenges in this field. However, in managing and planning primary school curriculum, factors such as society, learners, culture, teacher, social structure such as ethnic composition of the society as well as political organization must be considered in order to design and implement curriculum that will ease and ensure effective teaching and learning in primary school.

Problems Facing Management of Primary School

There are many problems militating against the effective management of Primary schools, for the purpose of this study, the paper considered: inadequate funding, head teachers' attitudes towards school management, lack of cooperation by teachers, inadequate facilities and politically motivated appointments (Gumbi, & Zaid, 2019)

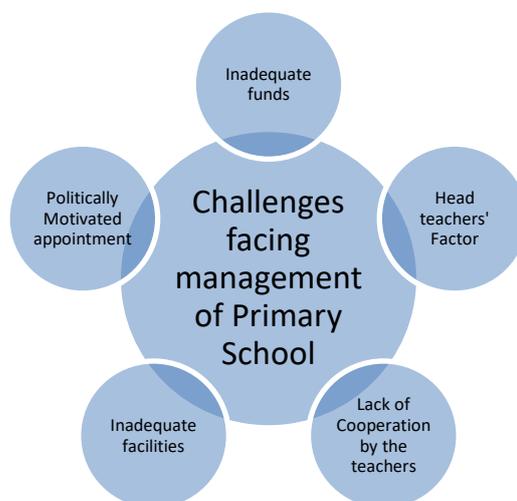


Figure 1: Challenges facing Primary School Management in Nigeria



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Inadequate Funding of Primary Schools in Nigeria

Education attracts considerable attention in public expenditure due to its position as a social service with direct economic significance. Though Teachers emoluments constitute the dominant item in the funding by the government, the school relied on other sources such as Parent teachers association levy, endowments/ donations, intervention by the foreign organizations, internal efficiency, old boys associations and community based organizations to run the affairs of school. There is need for sufficient funds that facilitates teaching and learning. Over 90% of primary schools' activities relied solely on its financial strengths without which the school will significantly be influenced by the poor infrastructure,

Head Teachers' Factor in Primary Schools

Head teachers are custodians of their respective schools. They are charged with the responsibility of overseeing the affairs and maintaining the primary school standard, However, their attitudes towards primary school management is worrisome. Majority emphasized on bestowing power and too much priority on relationship than practical know-how among their staff, which lead to assigning responsibility on the wrong person and this create chaos, misunderstanding and faction which hinder the management of primary school in several ways such as; poor communication, low morale, decreased in pupils performance, excessed workload, ineffective implementation of policies in the school.

Lack of adequate Cooperation by the Teachers

Effective primary school management requires a collective responsibility. Therefore, there is need for teachers to participate in running the affairs of their respective schools. However, many teachers show no concern in the management of primary schools. This may be as a result of Low cooperation from educational institutions and lack of commitment by teachers Furthermore, School is a system which relied on the collective efforts of teaching staff, non-teaching staff, and pupils. Head teacher alone cannot do it all he/she requires the helping hand by them.

Inadequate Facilities

Availability and adequate primary school determined the attainment of primary education goals. Effective management of Primary school facilities is among the prime responsibilities of head teachers. However, as a result of poor management, a significant number of public primary school facilities are not in good condition, some are damaged, and lead to difficulty in meeting the standard, raised safety concerns, promote inequitable access, demotivate teachers' ability to discharge his/her duties. Conversely, teachers are to be engaged in managing primary school facilities by assigning teachers with the responsibility of managing the facilities.

Politically Motivated Appointment

Nigeria adopt the democratic system of government with multiple parties and positions to contest for, therefore, every citizen primary school teacher inclusive have every right to vote and be voted for based on the right and freedom given to all. Nevertheless, the attitudes of politicians in power permeate education sector where they appoint and transfer teachers based on their selfish interest. However, politically motivated appointment across Nigerian public primary schools steered to lack of expertise, bigoted interest, nepotism and favoritism, instability and turnover lack of understanding of local contexts, needs and state of affairs, conflicting priorities such as political agenda and abuse of the system, attrition of trust.

Conclusion

In conclusion, managing primary education in Nigeria is a complex task that requires effective leadership and management skills from headteachers. As instructional leaders, headteachers play a critical role in shaping the quality of education in their schools. Their responsibilities, including instructional supervision, teacher professional development, resource management, and community engagement, are essential for creating a conducive learning environment. To improve the quality of primary education in Nigeria, head teachers must be equipped with the necessary skills, knowledge, and resources to manage their schools effectively. This can be achieved through capacity-building programmes, mentorship, and support from policymakers and stakeholders. Ultimately, the success of primary education in Nigeria depends on the ability of head teachers to lead and manage their schools effectively. By prioritizing teacher support, community engagement, and resource management, head teachers can create a positive learning environment that fosters academic achievement and social development for all students.

Recommendations

Based on the challenges raised, the following solutions were recommended



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1. Sustainable and adequate funding of primary schools should be provided by stakeholders.
2. Headteachers should discharge their duties with integrity and fairness, treating all subordinates equally.
3. Teachers should be involved in decision-making processes and the management of primary schools.
4. Relevant and adequate facilities should be provided in each primary school.
5. The government should ensure fairness and impartiality in the appointment of primary school teachers.

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Effect of ASSURE-TI Teaching model on ... Lawal, Y., Et. al. (2025)

Effect of ASSURE-TI Teaching Model on Technological Pedagogical Content Knowledge (TPACK) towards Technology Integration in Kaduna State

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Abstract

The aim of this study was to find out the effect of application of the ASSURE-TI Instructional Model on the Technological Pedagogical Content Knowledge (TPACK) of Pre-Service Technical Education teachers towards Technology Integration in Kaduna state. The researchers used a census technique where the entire population was engaged, the population comprised 347 Technical Education Pre-service teachers from three public tertiary institutions in Kaduna state. Due to some obvious and fundamental weaknesses of ASSURE Model, the researchers created ASSURE-TI Model to ensure seamless technology integration into classroom instruction. To measure the effect of ASSURE-TI Model on Technological Pedagogical Content Knowledge (TPACK), we used Quasi-experimental strategy specifically Pretest-Posttest Nonequivalent Control Group Design. Thus, 63 participants (Control group=32, Experimental group=31) participated in the study, we also used the TPACK Observation Checklist to evaluate the participants' practical teaching. To analyze the data, parametric statistical methods (Independent Samples t-test) was used; the results indicated that ASSURE-TI training intervention was very effective in improving pre-service teachers' practical Teaching skills.

Keywords: Technological Pedagogical Content Knowledge, National Certificate in Education, Technical Education.

Introduction

This era is described as the technology age, technology development in the 21st century transformed the teaching and learning methods. Applying ICT to impart knowledge is not new in the realm of education, but the rate at which technology transforms the teaching and learning processes is highly unprecedented. Every teacher is expected to be technologically literate; it has become an obligation on every teacher to be acquainted with technology and the basic knowledge on how to teach with technology, in a nutshell, Technology Integration. Ibrinke and Jayeola (2025) explained that one of the major challenges of technology integration in Nigeria was insufficient training. Consoli, Désiron, and Cattaneo (2023) defined Technology Integration as the application of technology in educational environment to assist in attaining the educational aims and objectives, or the ways leading to that. Teachers have different ways of integrating technology into their lesson ranging from using the traditional method of lesson plan to using Instructional Design Models (IDM). Using the Instructional Design Models is more authentic because IDM are research based. There are various types of IDM but ASSURE Model is widely accepted and used in Educational Technology, this is because it emphasizes using media to impart knowledge. Moreover, the name ASSURE itself is an acronym that represents each step of the model, helping educators ensure a more engaging and impactful learning experience. The ASSURE stands for: A — Analyze learners, S — State standard and objectives, S — Select media and materials, U — Utilize media and materials, R — Require learner participation, and E — Evaluate and revise. It was drawn from Robert Gagne's framework of instructional events.



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The ASSURE model has proven to be a great way to boost students' involvement and enthusiasm for teaching, classroom activities, enhance educational goals and promote effective learning (Soltani & Shamsi, 2023). Eliana, Wati, and Rahmadona (2024) concluded that using information technology-based learning tools, while following the ASSURE model, significantly enhances both the learning experience and the grades. Thus, one of the major constraints of ASSURE model is that it was developed in the early 1990s when technology was viewed in terms of supplementary, not central to instruction. In view of this, the researchers developed ASSURE-TI model that is fundamental to instruction. Furthermore, turning now to the Technological Pedagogical Content Knowledge (TPACK), the concept of Technological Pedagogical Content Knowledge (TPCK or TPACK) is a relatively new area of study that is still developing a solid theoretical foundation. Over the past decade, it has attracted growing research interest, with many studies building on Shulman's (1986, 1987) idea of Pedagogical Content Knowledge (PCK). The TPACK framework is designed to address the complexities and challenges inherent in contemporary teaching and learning, particularly those arising from the rapid advancement of technology and the widespread use of the internet. Thus, the TPACK framework initially has seven domains of knowledge namely: Content Knowledge (CK), Pedagogical Knowledge (PK), Technological Knowledge (TK), Pedagogical Content Knowledge (PCK), Technological Content Knowledge (TCK), Technological Pedagogical Knowledge (TPK), and Technological Pedagogical & Content Knowledge (TPCK) (Mishra & Koehler, 2006). Additionally, Mishra (2019) advocated renaming the external dotted circle in the TPACK model as "Contextual Knowledge (XK)". A number of studies have found that TPACK is very effective in the realm of technology integration (Aldalalah, Wardat, Al-Omari, & Khodair, 2025; Lixia, Choi, & Chen, 2025; Usman, Arafah, Marhum, Munir, & Tadeko, 2024; Uygun, Sendur, Dere, & Ozcakil, 2023; Yang, Fu, & Wu, 2025).

Statement of the Problem

Why is standard of education in Nigeria falling? Rationally, the persistent falling standard of education is not justifiable because there is proliferation of teacher training institutions that graduate professional teachers yearly. The certified teachers were trained with modern technology (ICT) and are expected to use technology to teach. Governments spend a lot of money yearly to purchase Information Communication Technology (ICT) material; yet the result of this disbursement is still unknown. Chukwuemeka, Nsofor, Falode, and Aniah (2019) explained that the methods and practices of teaching have changed and exposed teachers to new digital technologies that they are not conversant with. The computer courses in the teacher training programs train the potential teachers to learn the computer practical as well as theoretical skills, but these skills do not spontaneously turn into pedagogical skills. Chacón-Prado (2023) found that the absence of new technologies and insufficient hardware and software skills of students and teachers are some of the major problems encountered in technology integration. Technology is updated every day, Shambare and Jita (2024) recommended that investigations are needed to track the long-term development of teachers' TPACK and to determine how it can be effectively scaled and sustained. Research showed that several teachers failed to meet the 21st-century teaching prerequisite owing to gaps in the teacher education program; serious among these holes is the problem of the integration of technologies into classroom instruction (Aina, Ayodele, & Adekunle, 2021). Furthermore, a lot of researchers clamored for more researches on ASSURE model, Al-Haydary and Majeed (2021) recommended carrying out various studies in different subjects and at different educational levels in both boys' and girls' schools could help us understand how much the ASSURE model benefits students. Aldalalah et al. (2025) recommended that researches on TPACK should be conducted on different subjects and at various educational levels. Researches have shown that empirical studies to discover the relationships among TPACK components, how the components associate with the TPACK and how TPACK affects technology integration are still scarce (Masry-Herzallah, 2025; Muhammad, Mohd Faiz, & Akhmad, 2024; Sofwan, Yaakob, & Habibi, 2023).

Objectives of the Study

The objectives of the research are:

1. To compare the TPACK scores between pre-service teachers exposed to the ASSURE-TI model and those not exposed.
2. To investigate the relationship between Content knowledge (CK) and Technology knowledge (TK) among Pre-service Technical Education teachers.



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Research Questions

This research has the following questions:

1. Is there a significant difference in the TPACK scores of pre-service teachers exposed to the ASSURE-TI model and those not exposed?
2. Is there a significant relationship between Content knowledge (CK) and Technology knowledge (TK) among Pre-service Technical Education teachers?

Hypotheses

The hypotheses formulated were tested at $P \leq 0.05$ level of significance

- H0:** There is no significant difference in the TPACK scores of pre-service teachers exposed to the ASSURE-TI model and those not exposed.
- H1:** There is significant difference in the TPACK scores of pre-service teachers exposed to the ASSURE-TI model and those not exposed.
- H0:** There is no significant relationship between Content knowledge (CK) and Technology knowledge (TK) among Pre-service Technical Education teachers.
- H1:** There is significant relationship between Content knowledge (CK) and Technology knowledge (TK) among Pre-service Technical Education teachers.

Theoretical Framework

This research focuses and counts on a theoretical background, this is: Technological Pedagogical Content Knowledge (TPCK) as a theoretical framework on its own. The chief proponent of Technological Pedagogical Content Knowledge (TPCK) was Lee S. Shulman in the year 1986, he expounded on two (2) basic areas of knowledge: Pedagogical Knowledge (PK) and Content Knowledge (CK). Koehler & Mishra (2005) extended Shulman's idea (PCK) by adding another construct that is, Technology Knowledge (TK). Eventually, it became Technological Pedagogical Content Knowledge (TPCK); for the purpose of simple pronunciation they changed it to TPACK. Moreover, eventually, Mishra (2019) suggested another construct "Contextual Knowledge (XK)". The Technological Pedagogical Content Knowledge (TPACK) was introduced to the educational research field as a theoretical framework with its different TPACK sub-constructs to accurately comprehend teacher knowledge necessary for operational technology integration (Ifinedo, Saarela, & Hämäläinen, 2019; Mishra & Koehler, 2006). The TPACK consisted eight Sub-constructs namely; Content Knowledge (CK), Pedagogical Knowledge (PK), Technological Knowledge (TK), Pedagogical Content Knowledge (PCK), Technological Content Knowledge (TCK), Technological Pedagogical Knowledge (TPK), Contextual Knowledge (XK) and Technological Pedagogical Content Knowledge (TPACK). Each of the Sub-constructs can be used as an individual construct or in relation to other constructs to conduct a scientific research.

The ASSURE Model

The ASSURE model also known as the Heinich, Molenda, Russell, and Smaldino Model is a framework for designing instructional materials and lessons, The ASSURE model is designed to aid educators in constructing and improving learning experiences for their learners by means of providing a structure to plan and polish their instructional approaches and learning environments. Research has shown that using ASSURE model reinforced with multimedia had unlimited and effective influence on the teachers' speaking skills (Mahmoud, Rehab, & Mina, 2024).

Figure 1. The ASSURE Model

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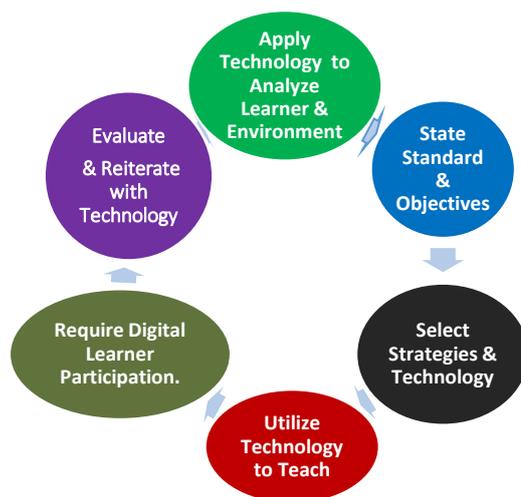
Source: *(Integrating Educational Technology into teaching)*

According to Zahran (2023), the ASSURE model has an optimistic impact on teachers' digital literacy abilities thru building a learning environment that allows teachers to effectively use instructional models, prepare student-centered lessons. Damayanti and Rahmadonna (2025) found that teachers who effectively implement the ASSURE instructional design can really address students' cognitive and engagement needs. Thus, ASSURE Model has some conspicuous weaknesses that sometimes inhibit seamless integration of technology into classroom instruction. As the ASSURE Model is less than 4 decades now, at that time, technology was considered just a complementary, not fundamental to instruction. ASSURE model treats technology as a content delivery instrument therefore limiting the possibilities of using technology to analyze learners and plan collaboration at early stages within the learning design.

ASSURE-TI Model

The ASSURE-TI model is a modernized version of the ASSURE model, it can be observed that in ASSURE model, the integration of technology starts from stage four (4) that is Utilize Media & Material while in ASSURE-TI model the integration of technology starts from the first stage to the end. ASSURE-TI Model emphasizes the integration of technology to support teaching and learning, while maintaining the core principles of the original ASSURE model. ASSURE-TI has the following components:

A - Apply Technology to Analyze Learner & Environment, S - State Standard & Objectives, S - Select Strategies & Technology, U - Utilize Technology to Teach, R - Require Digital Learner Participation, E - Evaluate & Reiterate with Technology and TI - Technology Integration.



Nevertheless, the ASSURE-TI model is basically for Technology Integration that has the capacity to improve the old ASSURE instructional design model. It was created to react to the increasing appeal for a model that allows initial use of technology in classroom instruction from planning stages and continues to the evaluation stage to suite the 21st-century teaching. ASSURE-TI has the following advantages that places it high in the realm of teaching in the 21st-century teaching:

1. Early Integration of Technology

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ASSURE-TI Model places strong emphasis in using technology and media at introductory stage that is, Apply Technology to Analyze Learner & Environment the traditional ASSURE model initiate the use of technology at stage 4 (Utilize Media and Materials).

2. ASSURE-TI Model is Responsive to Digital Learners

Traditional ASSURE Model ignores learner analysis that examines the readiness of the learner to use technology in classroom environment. On the other hand, the ASSURE-TI Model examines Learners' digital habits, learners' access to the use of technology and above all their initial technological skills.

3. Technology-Enhanced Objectives

Another serious challenge against the ASSURE Model is that its objectives may not involve technological related performance of the learner which is very central to the overall idea of technology integration. However, using digital tools to attain educational objectives is one of the cardinal aims of ASSURE-TI Model, frankly this seriously promotes 21st-century skills and digital literacy.

4. Flexible Tool and Method Selection

To inspire invention through blended and active learning, ASSURE-TI Model use tools, and content to plan together based on technological opportunities whereas in ASSURE Model tools are selected to support pre-decided methods and content.

5. Digital Learner Participation

As ASSURE Model was over 3 decades now its engagement style is usually via traditional classroom meeting, this does not promote motivation that will lead deeper students' engagement. ASSURE-TI Model promotes students' involvement using tools for collaboration, reflection and content creation in form of Learner-Learner interaction or Learner-Tutor interaction.

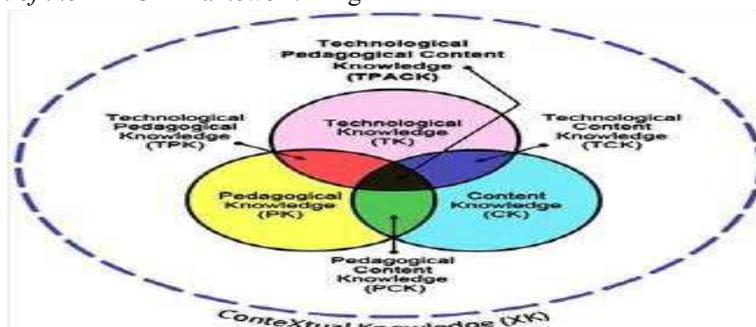
6. Technology-Based Evaluation and Feedback

One of the great features of ASSURE-TI Model is that it uses digital assessments and real-time feedback, this allows for both formative and summative evaluation to take place, it also allows faster feedback and instructional adjustments where necessary. Whereas, ASSURE Model frequently relies on paper tests and fixed rubrics evaluation that hardly give room for formative evaluation. ASSURE-TI enhances the ASSURE model by decisively integrating technology from the foundation, it is up-to-date to meet the challenges of the dynamic needs of modern classrooms, it champions teachers to tactically use digital tools, and prepares students for an interconnected digital world.

Technological Pedagogical and Content Knowledge (TPACK)

It is not exaggeration to say that some topics cannot be taught effectively without the use of technology, but technology integration is still a problem. Ifinedo et al. (2019) established that TPACK framework is significant for understanding how teachers integrate technology into their classrooms. TPACK has been used to refer to as teachers' formula for technology integration.

Figure 3. Revised version of the TPACK Framework image



Source: <http://tpack.org>

The TPACK framework puts emphasis on the dynamic interactions and interdependencies among content, pedagogy, and technology; acknowledging that effective teaching entails a profound understanding of how these three parts overlap and sway one another. Rather than handling content, pedagogy, and technology as distinct knowledge areas, TPACK emphasizes the significance of balancing these three areas to make an interconnected and authoritative teaching approach. Jiménez Sierra, Ortega Iglesias, Cabero-Almenara, and Palacios-Rodríguez (2023) emphasized that the major TPACK



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subcomponents were developed distinctly, but are combined together to promote effective means of teaching. Mishra and Koehler (2006) explained that TPACK framework has seven (7) essential elements and relationships, while Mishra added 1 in 2019 they are:

- 1. Content Knowledge:** Content knowledge (CK) This knowledge is vital for successful teaching and communicating the subject matter to learners, if teachers are not well versed in their subject areas, they can mislead students.
- 2. Pedagogical Knowledge:** Pedagogical Knowledge (PK) connotes adequate knowledge about the principles and practices of teaching and learning and how it incorporates the generally educational purposes, values, and aims.
- 3. Technology Knowledge:** Technology knowledge (TK) is information about standard technologies such as books, chalk and blackboard, and more advanced technologies, such as the computer, internet, and digital video.
- 4. Pedagogical Content Knowledge:** Pedagogical Content Knowledge (PCK) refers to the distinctive intermingling of subject matter expertise and teaching talents that teachers have.
- 5. Technological Content Knowledge:** Technological content knowledge (TCK) is knowledge about the method in which technology and content are mutually interconnected.
- 6. Technological Pedagogical Knowledge:** Technological Pedagogical Knowledge (TPK) is knowledge of the existence, components, and capabilities of various technologies as they are used in teaching and learning settings.
- 7. Technological Pedagogical and Content Knowledge:** Technological Pedagogical and Content Knowledge (TPACK) is an evolving form of knowledge that surpasses all the three components (content, pedagogy, and technology).
- 8. Contextual Knowledge:** Contextual Knowledge (XK) is concerned with the teacher's acquaintance with technologies available for him/her to the teacher's knowledge regarding the school, district, or country policy where he/she is teaching.

Methodology

This research is designed to take place in three (3) senatorial areas of Kaduna state: Zaria, Kaduna and Kafanchan zones Three hundred and forty-seven (347) Pre-Service Technical Education teachers, males and females who must have registered or already passed courses like the Micro-Teaching Practicum, Educational Technology: Theory and Practice etc. volunteered to participate in this study. Moreover, the Participants were students enrolled in NCE program, all the participants took part in the survey in order to identify their TPACK statuses, while only the 63 participated in the Quasi-experimental strategy precisely *Pretest-Posttest Nonequivalent Control Group Design* was used. The researchers used questionnaire adapted and modified from Schmidt, Baran, Thompson, Mishra, Koehler & Shin to identify the TPACK of the participants. The items on the questionnaire were on a five-point Likert-scale with numerical weights scale of: Strongly Disagree (SD) = 1 points, Disagree (D) = 2 points, Neither Agree or Disagree (NA/D) = 3 points, Agree (A) = 4 points, and Strongly Agree (SA) = 5 points. Therefore, mean value of 3.10 and above means respondents' agreement to the items whilst a mean score of 3.00 and below means disagreement to the items on the questionnaire. The validity of the amended instruments, particularly the face and content validity, was ascertained by a panel of experts in Educational Technology and Pedagogy. The instrument was pilot tested, reliability test was carried out, the result of the reliability test revealed high internal consistency level with Overall Cronbach's Alpha TPACK .81. The study also used the TPACK Observation Checklist to observe and collect data during pretest and posttest of the quasi-experimental exercise. The data was analyzed using a combination descriptive statistics and correlation analysis. The study employed quasi-experimental and correlational strategies to conduct the research, the research used *Pretest-Posttest Nonequivalent Control Group Design* in order to find out the effect of the ASSURE-TI Instructional Model on the Technological Pedagogical Content Knowledge (TPACK) of Pre-Service Technical Education teachers towards Technology Integration, the participants were trained for four (4) weeks on the new ASSURE-TI Model, Spearman's Rank-Order Correlation was used to investigate the correlation between Content Knowledge (CK) and Technology Knowledge (TK).

Presentation of Results

Is there a significant difference in the TPACK scores of Pre-service Technical Education teachers exposed to the ASSURE-TI model and those who are not?

The result is presented in table 1:

Table 1

Pre-test Independent Sample t-test



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Group	N	Mean	SD	df	t	p
Control Group	32	28.2	4.8	61	0.40	.693
Experimental Group	31	27.5	5.2			

Table 1 presents Pre-test information, it shows that the Mean scores of Control Group was 28.2 while the Experimental Group had 27.5 while the P-value was .693.

Table 2

Post-test Independent Sample t-test

Group	N	Mean	SD	Df	t	p
Control Group	32	30.3	5.1	61	3.21	0.02
Experimental Group	31	82.7	7.3			

Table 2 presents Posttest information, it indicates that the Mean scores of Control Group was 30.3 while the Experimental Group had 82.7 whereas the P-value was 0.02.

Correlation Result

A Spearman's rank-order correlation was carried out to ascertain the relationship between Content Knowledge (CK) and Technology Knowledge (TK) among Preservice Technical Education teachers. The correlation involved Three hundred and forty seven (347) participants, providing valuable insights into how these two types of knowledge intersect in their training.

Table 3

Spearman's Rank-Order Correlation between CK and TK

Variables	Content Knowledge (CK)	Technology Knowledge (TK)
Content Knowledge (CK)	1.00	0.71**
Technology Knowledge (TK)	0.71**	1.00

Note: **rho = 0.71, n = 347, p < 0.01 (2-tailed)**

The Spearman's Rank-Order Correlation results displayed a concrete connection between Content Knowledge and Technology Knowledge with a correlation coefficient of 0.71 and a p-value of less than 0.01

Discussion of Findings

The Pre-test information shows that the mean scores of Control Group is 28.2 while the Experimental Group has 27.5 both the groups show low experience, precisely below proficiency threshold, the Standard Deviation indicates tight position, a constant low starting point expertise. The table demonstrates that the calculated statistics is 0.40 with p-value .693 the hypothesis formulated was tested at $P \leq 0.05$ level of significance. The information in this table indicates that there is no significant group difference; therefore, we can conclude that the Control Group and the Experimental Group are statistically equal at pretest which is correct for Quasi-Experimental Independent Sample. The Posttest result reveals that the Mean scores of Control Group is 30.3 while the Experimental Group has 82.7. This shows that the Experimental Group displays considerably greater Post-test scores than the Control Group. The Experimental Group reached near-proficiency scores but the Control Group shows insignificant development. In conclusion, the ASSURE-TI Model made unprecedented improvements in pre-service teachers' Instructional Design competency.

This research is consistent with the research of Aldalalah et al. (2025) who used the quasi-experimental approach to study the effectiveness of interactive digital content based on the TPACK model. They found that using digital content based on the TPACK model supported the development of the skills of making instructional facilities and increasing the cognitive success in the creation of teaching aids. This finding is also in agreement with the finding of Usman et al. (2024) who examined the effect of differences between TPACK and conventional learning models on learning outcomes of descriptive text writing skills in English. Their result established a significant difference between students who learned with TPACK and DL models based on the influence on learning outcomes of writing English descriptive text. In another fascinating research Yang et al. (2025) conducted a survey with 102 Art Education teachers to examine the impact of Art teachers' Technological Pedagogical Content Knowledge (TPACK) on Art students' online learning engagement. To analyze the



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data, they used Structural Equation Modeling. The result revealed that higher levels of TPACK in Art teachers lead to improved student engagement in online learning, their finding is consistent with the present research. However, in contrast to the earlier findings, Agustini, Santyasa, and Ratminingsih (2019) used a mixed method to study and analyze the competence of Technology, Pedagogy, and Content Knowledge (TPACK) of Education Technology alumni. The result showed that Content Knowledge and Pedagogical Knowledge had high average compared to Technological Constructs, while the Technology Knowledge had low average this research is inconsistent with the current study. Roig-Vila, Mengual-Andrés, and Quinto-Medrano (2015) also conducted quantitative non-experimental research with 224 Preschool and Primary Education teachers. Their results revealed that they have insufficient Technological Knowledge and skills to incorporate technology into their instruction. Thus, a lot of researches established that TPACK has influence in academic performance and beyond (Ismaniati, Khairaty, Yusuf, & Supramono, 2025; Yang et al., 2025).

In reviewing the literature, there were a quite number of studies that found the relationship between Content Knowledge and Technology Knowledge. The result of this study shows that there is a strong association between Content Knowledge (CK) and Technology Knowledge (TK). The results shows a solid connection between Content Knowledge (CK) and technology knowledge (TK), with a correlation coefficient of 0.71 and a p-value of less than 0.01. There are several possible explanation for this result, scientifically, the preservice teachers understood their subject very well they were also more skilled with technology and therefore, the relationship is statistically significant. Another possible explanation for this strong relationship might be due to the fact that all the participants have been participating in practical teaching right from their departments. Therefore, we can conclude that this is not just a coincidence, these findings suggest that improving one area of knowledge, like Content Knowledge, can enhance understanding in another area, such as Technology Knowledge. This association is important for developing well-versed teaching skills in teacher training programs. Furthermore, the present research established that there is a strong association between Content Knowledge and Technology Knowledge. Shambare and Jita (2024) used a quantitative analysis of data collected from 186 Life Sciences teachers in a descriptive research, they found that the overall, respondents displayed low levels of TPACK, but individual analysis of TPACK components has shown a distinguished proficiency of Content Knowledge, Pedagogical Knowledge and Pedagogical Content Knowledge; these individual performances support the current study. However, Amri, Zubaidi, & Aziz conducted a research to determine whether a considerable correlation exists between TPACK level and grades. They used nonparametric analysis precisely Chi-Square and Spearman Coefficient Correlation to analyse the data. The results revealed that there was a substantial relationship between pre-service teachers' academic achievement and their TPACK (Amri, Zubaidi, & Aziz, 2024). Lixia et al. (2025) used 506 teachers in a cross-sectional survey to study the role of Technological Pedagogical Content Knowledge (TPACK) in Technology integration among in-service Chinese language teachers in rural China. Their findings revealed that domains like Content Knowledge and Pedagogical Knowledge showed limited significance. Moreover, their finding is inconsistent with the current research where Content Knowledge and Pedagogical Knowledge have tremendous scores. In another research Hawraa Oudah, Basma Mohammed, and Laith Mohammed (2025) established a deficiency in Educational Knowledge, Technological Knowledge, Knowledge of Technology and Content, and Knowledge of Technology and Education.

Conclusion

This research contributes in addressing technology integration by enhancing our understanding of how pre-service teachers can better prepare for technology integration. The training for ASSURE-TI produced a wonderful result to participants' instructional design skills. The research also laid a base to build other studies by replication or bringing their innovations, example using ASSURE-TI model in mixed mode or participatory approach could yield richer results. To implement the recommendation of this study, the findings should be incorporated in the teacher training institution syllabuses, this will enable the pre-service teachers to be conversant with the findings. Workshops and conferences should be organized to train the in-service teachers.

Recommendations

1. The findings of this study have a number of important implication for future practice, there is therefore, a definite need for Federal Ministry of Education to mandate ASSURE-TI model in all higher institutions where NCE programs are run.



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2. Thus, it is therefore recommended that Federal Ministry of Education funds should be made available for ASSURE-TI model implementation.

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Assessment of Private Cost of ... Ogbeide, A. K. & Edeki, O. M. (2025)

Assessment of Private Costs of University Education among Final-Year Undergraduate Students in University of Benin, Edo State, Nigeria

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Abstract

This study analyzed the private costs of university education among final-year Nursing undergraduates at the University of Benin, Edo State, Nigeria. Using a descriptive survey research design, data were collected from all 310 final-year Nursing students via a validated questionnaire (PECQ-NS, $\alpha=0.84$). Data were analyzed using descriptive statistics, *t*-tests, correlation analysis, and simple linear regression at a 0.05 significance level. Findings revealed that clinical materials (Mean=3.65), off-campus accommodation (Mean=3.57), and transportation to teaching hospitals (Mean=3.48) were the most significant cost components. A moderate positive relationship existed between socio-economic background and private costs ($r=0.381$, $p<0.001$), indicating greater hardship for lower-income students. Private costs significantly affected academic experiences and completion rates, explaining 20% of the variation ($R^2=0.200$, $p<0.001$). Interestingly, male students incurred significantly higher average private costs (Mean=70.84) than female students (Mean=67.13, $p=0.006$). The study concludes that substantial private costs, influenced by socio-economic status and gender, negatively impact Nursing students' academic journey. Recommendations include subsidizing clinical materials, prioritizing support for disadvantaged students, expanding hostel spaces, and developing gender-sensitive financial policies.

Keywords: Private cost of education, Nursing students, academic engagement, gender disparities, socio-economic status,

Introduction

University education plays a vital role in shaping the intellectual and professional development of individuals, particularly in a developing nation like Nigeria. Nursing education, as a subset of university training in health sciences, is critical to the healthcare delivery system. Final-year students in medical related programs undergo intensive academic and clinical training, which prepares them to meet professional standards and contribute to public health. However, behind this essential academic pursuit lies a significant burden of private cost of education borne by students and their families. Private cost of education is a critical component for service delivery in the school system. According to Obano and Ogbeide (2021), private cost of education is an investment incurred by individual students and their family through payment of tuition fees, purchase of admission form, books, dues, among others. These costs often go beyond tuition and include expenditures on accommodation, clinical materials, transportation to health facilities, feeding, and departmental charges. As observed by Oyetakin (2018), such hidden or non-tuition expenses can sometimes outweigh official school fees, placing enormous pressure on students, particularly in professional courses like Nursing. Despite government subsidies for public university education in Nigeria, the financial reality for students remains daunting. Nursing undergraduates, especially in their final year, encounter a surge in private spending due to increased clinical responsibilities and extended hospital postings. These out-of-pocket costs can create barriers to effective academic engagement and performance. For instance, Okorie and Alabi (2021) note that the increasing financial demands of clinical materials and transportation to clinical sites affect students' focus and attendance. The burden becomes more challenging for students from low socio-economic backgrounds, who may already struggle with basic needs. This link between private cost and socio-economic status underscores the importance of analyzing financial disparities among students and their effect on academic continuity. Therefore, examining these costs is critical to understanding how they influence access, engagement, and outcomes in higher education. Further complicating the picture are gender-based and socio-cultural dimensions of private educational spending. Some empirical studies suggest that female students incur more on personal security and hygiene-related expenses, while male students often face higher costs for housing and feeding due to lifestyle and living arrangements (Eze & Ibeh, 2022). These gender variations in spending patterns can influence academic persistence differently. In the context of Nursing education—a field



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traditionally dominated by female students—it becomes essential to explore whether these differences exist and how they impact educational attainment. Additionally, as final-year Nursing students handle more complex academic and clinical responsibilities, the influence of financial burden on their ability to complete their education on time becomes a pressing concern. Understanding these dynamics can help institutions implement gender-sensitive and socio-economic inclusive support systems. Moreover, several studies have addressed private cost of education among undergraduates in Nigeria, but few have focused specifically on Nursing students or captured current data from Southern Nigeria. For instance, Nwachukwu (2019) and Nyarko and Adomako (2020) revealed a direct link between financial hardship and students' intention to drop out, with accommodation and transport costs being the most burdensome. However, their focus was primarily on general university students. There is a gap in literature focusing on professional disciplines like Nursing, which involve unique academic structures and extended fieldwork. This research therefore seeks to fill that gap by providing an in-depth analysis of the private costs of university education among final-year Nursing undergraduates at the University of Benin, Edo State, Nigeria. Several studies have explored the theme of private cost of education in Nigerian universities. Ogundele and Adegoke (2021) studied private costs among undergraduates in Delta State and found that accommodation and transport made up over 50% of total private costs, with students relying heavily on family support and side businesses. However, their study lacked focus on academic discipline or year of study. Oyetakin (2018), focusing on postgraduate students across six universities in South-West Nigeria, reported that science and engineering students had higher educational costs compared to arts, but did not explore how these costs impacted academic engagement or differed by gender.

Eze and Ibeh (2022) examined gender-specific effects of educational costs and found that females incurred higher personal costs for safety and health, which influenced class attendance. Similarly, Giwa and Sheu (2022) analyzed private costs across institutional types and concluded that while ownership and housing affected cost levels, field of study was not a major determinant. However, they did not disaggregate data for Nursing students, nor did they assess final-year student experiences. Mwangi and Githinji (2021) explored cost differences in engineering departments in Kenyan universities and highlighted that department-specific demands affect expenditure levels. Meanwhile, Nwachukwu and Etim (2019) showed that over one-third of Nigerian undergraduates considered dropping out due to unaffordable private costs. Nyarko and Adomako (2020), using Ghanaian data, confirmed similar findings, especially for students from rural areas studying in urban centers. These studies underscore the urgent need to examine financial realities among Nursing students, who often face intense practical and academic demands.

Statement of the Research Problem

Despite government efforts to subsidize tuition in public universities, students in professional courses like Nursing continue to face high private educational costs. These expenses, especially in final year, include accommodation near clinical sites, daily transportation, clinical tools, protective kits, textbooks, and data subscriptions for digital learning. Many students, particularly those from low-income families, struggle to meet these financial demands. This affects their academic engagement, attendance at clinical rotations, and, in some cases, leads to delays in graduation or dropout. Preliminary observations at the University of Benin suggest that many final-year Nursing students take on extra financial responsibilities not covered by tuition, such as purchasing medical gloves, syringes, and clinical manuals. These realities are rarely captured in institutional financial aid policies, creating gaps in support. Although some existing studies touch on educational cost burdens, few provide discipline-specific insights, especially for health-related programs like Nursing. Even fewer examine gender-based differences and the influence of socio-economic status on private educational costs in Nursing education. Therefore, this study aims to analyze the private costs of university education among final-year Nursing undergraduates at the University of Benin, considering the unique demands of their academic and clinical workload.

Objectives of the study

The primary purpose of this study is to analyze the private costs incurred by final-year Nursing undergraduate students at the University of Benin, Edo State, in the pursuit of their university education. Specifically, the study seeks to:

1. Identify the major components of private costs of education incurred by final-year Nursing undergraduate students at the University of Benin.
2. Examine the extent to which students' socio-economic backgrounds influence the level of private cost of education spending among Nursing students.



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3. Assess how private costs of education affect the academic experiences and completion prospects of final-year Nursing undergraduate students.
4. Determine whether there are significant differences in private cost of education between male and female Nursing students at the University of Benin.

Research Questions

1. What are the major components of private costs of education incurred by final-year Nursing undergraduate students at the University of Benin?
2. To what extent do socio-economic backgrounds influence the level of private costs of education spending among Nursing students?
3. How do private costs of education affect the academic experiences and completion prospects of final-year Nursing students?
4. Are there significant differences in private costs of education between male and female Nursing students at the University of Benin?

Hypotheses

- H₀₁: There is no significant relationship between students' socio-economic background and the level of private costs of education incurred in their university education.
- H₀₂: Private costs of education have no significant effect on the academic experience and completion rates of final-year Nursing students.
- H₀₃: There is no significant difference in the average private costs of university education between male and female Nursing students.

Research Methodology

This study used a descriptive survey research design to examine the private costs of university education among final-year Nursing students at the University of Benin. This method helped the researcher collect real-life data without changing or influencing anything. It was useful in understanding the types and levels of personal expenses students face, such as transportation, accommodation, and learning materials. The study focused on all 310 final-year Nursing students in the 2023/2024 academic year. Since the population was small and manageable, the researcher used all the students as the sample through a census method. This made the results more accurate and reliable because every student's experience was included. The data were collected using a questionnaire called the *Private Education Cost Questionnaire for Nursing Students (PECQ-NS)*. It included questions about students' background, personal expenses, how these costs affect their studies, how they cope, and their views on support from the school and government. Experts in education and nursing reviewed the questionnaire to make sure it was valid, and a pilot test with 30 students from another university showed it was reliable, with a Cronbach Alpha score of 0.84. Data were collected in both paper and online formats over three weeks. The collected data were analyzed using SPSS software, where averages, percentages, and standard deviations were used to answer the research questions. For testing the hypotheses, the researcher used t-tests, correlation analysis, and simple linear regression, all tested at a 0.05 significance level.

Presentation of Results

Descriptive Analysis of Research Question One

What are the major components of private costs incurred by final-year Nursing undergraduate students at the University of Benin?

Table 1: Mean and Standard Deviation of Major Private Educational Cost Components (N = 310)

Cost Components	Mean	Std. Dev.	Decision
Clinical Materials and Kits	3.65	0.59	Agreed
Accommodation (Off-Campus Housing)	3.57	0.66	Agreed
Transportation to Teaching Hospitals	3.48	0.70	Agreed
Feeding and Personal Upkeep	3.42	0.71	Agreed
Academic Levies and Charges	3.15	0.74	Agreed
Data and Internet Subscription	3.10	0.68	Agreed



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Cost Components	Mean	Std. Dev.	Decision
Nursing Council Registration Fees	3.39	0.64	Agreed
Project Printing and Binding	3.22	0.73	Agreed

Result from table 1 show that the most significant components of private cost of education among final-year Nursing students are clinical materials (Mean = 3.65), off-campus accommodation (Mean = 3.57), and transportation to teaching hospitals (Mean = 3.48). These reflect the clinical and practice-based nature of Nursing education. All listed components had means above 2.50, indicating general agreement among respondents that these costs are substantial. Financial planning and institutional support should prioritize these areas to reduce student financial stress.

Hypothesis One: There is no significant relationship between students' socio-economic background and the level of private costs incurred in their university education.

Table 2: Pearson Correlation Between Socio-Economic Background and Private Educational Costs

Variables	N	r-value	Sig. (2-tailed)	Decision
Socio-economic background	310	0.381	0.000	Reject H_{01}
Private cost of Education				Significant

Result from table 2 of the Pearson correlation value of 0.381 indicated a moderate positive relationship between students' socio-economic background and the level of private cost of education incurred. The p-value of 0.000 (less than 0.05) shows this relationship is statistically significant. This suggests that students from lower-income households bear greater hardship from private cost of education, which may affect their academic participation, especially during clinical postings that demand extra spending on transport and materials.

Hypothesis Two: Private costs of education have no significant effect on the academic experience and completion rates of final-year Nursing students.

Table 3: Simple Linear Regression – Effect of Private Educational Costs on Academic Experience and Completion

Statistic / Component	Value
R	0.447
R Square	0.200
Adjusted R Square	0.197
Std. Error of the Estimate	0.496
F-value	75.13
Sig. (p-value)	0.000
Decision	Reject H_{02}

The regression results from table 3 revealed a significant positive relationship between private educational costs and students' academic experience/completion. The R^2 value of 0.200 suggests that 20% of the variation in academic experience is explained by private costs. The p-value (0.000) confirms that this is statistically significant. This indicates that higher private costs negatively affect students' academic progress, often leading to missed classes, delayed assignments, or extended graduation due to financial hardship.

Hypothesis Three: There is no significant difference in the average private costs of university education between male and female Nursing students.



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Table 4: Independent Samples t-Test Showing Gender Differences in Private Educational Costs

Gender	N	Mean Cost	Std. Dev.	t-value	df	Sig. (2-tailed)	Decision
Male	72	70.84	11.94	2.786	308	0.006	Reject H ₀₃
Female	238	67.13	10.45				Significant

The results from table 4 showed a statistically significant difference in private educational costs between male and female Nursing students. Male students had a higher average cost (Mean = 70.84) than females (Mean = 67.13), and the p-value = 0.006 shows this difference is significant. This may be due to gendered patterns of accommodation, lifestyle, or family responsibilities. However, it is also possible that more male students live independently or take on extra financial responsibilities related to clinical rotations or transportation.

Discussion of Findings

The findings from this study provide a comprehensive view of the private cost of education borne by final-year Nursing undergraduate students at the University of Benin. The descriptive analysis showed that major cost components include clinical materials, accommodation, transportation to clinical sites, and feeding. These costs reflect the practical and field-based nature of Nursing education, where students are required to participate in hospital rotations, community postings, and laboratory activities. The high mean for clinical kits and transport expenses supports earlier findings by Okorie and Alabi (2021), who emphasized that Nursing students incur significant extra-budgetary expenses due to clinical practicum demands not covered by institutional fees. The result of the first hypothesis revealed a statistically significant relationship between students' socio-economic backgrounds and the level of private costs of education incurred. Students from low-income families reported a higher level of financial strain. This aligns with Eze & Oladele (2022), who reported that students from disadvantaged socio-economic backgrounds often struggle to keep up with financial demands in healthcare-based courses, leading to emotional stress and reduced academic performance.

The regression analysis in Hypothesis Two revealed that private cost of education significantly affects the academic experience and completion rates of Nursing students. This implies that as educational expenses increase, students are more likely to experience difficulties such as late fee payments, absenteeism from clinical postings, or even delayed graduation. This is consistent with Gyang, Ibrahim, and Okechukwu (2020), who found that financial constraints among health sciences students led to low attendance and reduced academic output during final year programs. Hypothesis Three tested for gender differences in private cost of education and found that male students incurred significantly higher costs than female students. This is a reversal of the common assumption that female students usually have higher personal upkeep expenses. A possible explanation may lie in male students' higher likelihood of independent accommodation, part-time job-related transport costs, or family responsibilities. This trend supports findings by Adebayo and Bello (2021), who noted that male Nursing students in urban universities tend to rent apartments further from campus due to accommodation shortages, leading to increased financial burdens.

Conclusion

The study concludes that private cost of education significantly impacts the academic experience and persistence of final-year Nursing students at the University of Benin. Students incur substantial personal expenses, especially in clinical-related materials, accommodation, and transportation. Socio-economic background strongly influences the level of financial stress, with students from poorer households facing greater challenges. In addition, private costs have measurable effects on students' ability to stay focused and complete their academic programs on time. Gender also plays a role, with male students experiencing higher average private costs than their female counterparts. These insights underscore the need for targeted financial interventions to support student success and equity in Nursing education.

Recommendations

Based on the findings, the following recommendations are made:

1. The University of Benin and relevant health agencies should establish dedicated support schemes to subsidize clinical materials and transportation to teaching hospitals. This would reduce the financial burden specific to practical Nursing education.



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2. Socio-economically disadvantaged students should be prioritized for bursaries and flexible payment options. These measures would improve access, retention, and completion among financially vulnerable students.
3. Since off-campus housing is a major cost driver, university management should prioritize hostel spaces for final-year students to reduce high rent and transport expenses, especially during clinical postings.
4. Given that male students were found to have higher private costs, financial support policies should not only target female students but also consider the specific financial patterns of male students, such as independent living and job-related mobility.
5. The university should regularly track and review private cost trends among students, particularly in practice-based programs like Nursing, to ensure that policy responses are timely, data-driven, and student-focused.

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Assessment of Online Information Service ... Abba, H., Et. al. (2025)

Assessment of Online Information Service Delivery among Postgraduate Students in Ahmadu Bello University, Zaria, Kaduna State, Nigeria

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Abstract

This study investigated the information needs of postgraduate students and challenges faced in using online databases at Ahmadu Bello University, Zaria. The study has two objectives which are; to identify the information need of postgraduate students in Ahmadu Bello University, Zaria, and to find out the challenges faced by postgraduate students in using online databases. Quantitative research methodology and survey research design were used for the study. The population of the study comprised of two faculties of Ahmadu Bello University Zaria which are Faculty of Education and Social Science, the Postgraduate students in the faculties were two thousand six hundred and seventy (2,670). The sample size of the study is 134 which is 5% of 2670 as opined by Yount (2006). Questionnaire was used as the instrument for data collection. The data collected was analyzed and interpreted using frequency tables and simple percentage. The study revealed that academic information (93.9%) represents significant secondary needs. The analysis identified skill-related challenges as the most significant barriers to effective database usage, with lack of skills (92.9%), and search confusion (91.8%), dominating the obstacles faced by students. The study concludes that postgraduate students require diverse information sources beyond academic materials, and their ability to utilize electronic resources is constrained by skill deficits rather than technological limitations. The research recommends implementing comprehensive information literacy programs and adopting diversified resource management strategies to bridge identified gaps and enhance research productivity among postgraduate students.

Keywords: Ahmadu Bello University, Database, Information Demands, Postgraduate, Obstacles, Usage

Introduction

The digital transformation of higher education has fundamentally altered how postgraduate students access, process, and utilize information resources in their academic endeavors. As universities increasingly adopt electronic databases and digital libraries as primary information sources, postgraduate students face unprecedented challenges in navigating these sophisticated information systems while simultaneously experiencing heightened information demands for their research activities (Majid & Eisenschitz, 2010). The complexity of postgraduate research requires students to access diverse, high-quality, and current information sources that can only be effectively obtained through comprehensive database systems and digital repositories. Ahmadu Bello University (ABU), Zaria, as one of Nigeria's premier institutions of higher learning, has invested substantially in electronic database subscriptions and digital information infrastructure to support advanced academic research. However, the mere availability of these resources does not guarantee effective utilization by postgraduate students, who often encounter multifaceted obstacles ranging from technical challenges to inadequate information literacy skills (Adeleke & Nwalo, 2017). The gap between information provision and effective utilization represents a critical challenge that can significantly impact the quality of postgraduate research outcomes and academic



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productivity. Understanding postgraduate information needs is crucial for developing targeted interventions that can bridge existing knowledge gaps and enhance research effectiveness. Information needs of postgraduate students are typically characterized by their complexity, specificity, and interdisciplinary nature, requiring sophisticated search strategies and access to multiple database platforms (Catalano, 2013). These needs evolve continuously throughout the research process, from initial literature exploration to detailed analysis and synthesis, demanding adaptive information-seeking behaviors and advanced database navigation skills. The significance of addressing database usage obstacles extends beyond individual student success to institutional research productivity and knowledge creation capacity. When postgraduate students cannot effectively access and utilize available information resources, the quality of their research suffers, potentially leading to inadequate literature reviews, methodological limitations, and reduced contribution to knowledge advancement (Bhatti, 2010). Furthermore, underutilization of expensive database subscriptions represents a significant waste of institutional resources and missed opportunities for research excellence.

Statement of the Problem

In an optimal academic environment, postgraduate students should possess comprehensive information literacy skills and have seamless access to relevant databases that fully support their research endeavors. Ideally, these students would demonstrate proficiency in identifying appropriate information sources, formulating effective search strategies, and efficiently navigating multiple database platforms to retrieve high-quality, current, and relevant information for their research projects (Association of College and Research Libraries, 2016). The ideal situation would feature well-trained students who can independently assess information quality, synthesize findings from diverse sources, and effectively manage their information resources throughout the research process. Additionally, institutions should provide robust technical infrastructure, comprehensive training programs, and ongoing support systems that enable students to maximize their utilization of available information resources (Ukachi, 2015). Despite significant investments in electronic database subscriptions and digital information infrastructure, there remains a substantial gap in understanding the specific information needs of postgraduate students at Ahmadu Bello University and the particular challenges they encounter when attempting to utilize available database resources. Existing literature on information needs and database usage has predominantly focused on undergraduate populations or has been conducted in different geographical and institutional contexts, limiting the applicability of findings to the specific circumstances of Nigerian postgraduate students. Furthermore, there is insufficient empirical evidence regarding the correlation between information needs identification and database usage challenges, particularly in the context of developing countries where technological infrastructure and information literacy levels may differ significantly from those in developed nations. Failure to address the information needs and database usage challenges of postgraduate students at Ahmadu Bello University will result in several detrimental consequences for both individual students and the institution as a whole. Students will continue to produce research of suboptimal quality due to inadequate access to relevant information sources, potentially leading to flawed literature reviews, inappropriate methodological choices, and limited contribution to knowledge advancement in their respective fields. The institution will experience reduced research productivity, decreased international visibility, and poor return on investment for expensive database subscriptions, ultimately compromising its reputation as a leading center for postgraduate education and research in Nigeria and beyond.

Objectives of the Study

The study focused on the following objectives

1. To identify the information need of postgraduate students in Ahmadu Bello University, Zaria.
2. To find out the challenges faced by postgraduate students in using online databases.

Literature Review

Information Needs of Postgraduate Students

The information needs of postgraduate students have been extensively studied across various academic disciplines and institutional contexts, revealing consistent patterns of complexity and specificity that distinguish them from undergraduate information requirements. Wilson's (2000) seminal work on information behavior established that postgraduate student exhibit sophisticated information needs characterized by their depth, interdisciplinary nature, and evolution throughout the research process. These students typically require access to current research findings, theoretical frameworks, methodological guidance, and empirical data that can support their original research contributions. The dynamic nature of



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postgraduate information needs reflects the iterative process of research development, where initial broad exploratory needs gradually narrow to highly specific requirements as research questions become more focused and methodologies are refined. Research conducted by Catalano (2013) demonstrated that postgraduate students' information needs are significantly influenced by their research methodology, disciplinary background, and stage of study. Students in the early stages of their programs tend to have broad, exploratory information needs focused on understanding their research domain and identifying potential research gaps. As they progress through their studies, their information needs become increasingly specific, requiring access to highly specialized resources, recent publications, and detailed methodological guidance. The study also revealed that postgraduate students require not only access to information but also guidance on information evaluation, synthesis, and integration into their research frameworks. The cultural and contextual factors influencing postgraduate information needs have been highlighted in studies conducted in developing countries. Onwuegbzie and Jiao (2004) found that postgraduate students in resource-constrained environments often develop adaptive information-seeking behaviors that compensate for limited access to comprehensive information resources. These students may rely more heavily on interpersonal sources, local publications, and alternative information channels when traditional academic databases are unavailable or difficult to access. However, this adaptation can potentially limit the scope and quality of their research if not properly supported by institutional interventions. Contemporary research has emphasized the increasing importance of digital literacy and technological competence in meeting postgraduate information needs. Madhusudhan (2010) argued that modern postgraduate students require not only traditional information literacy skills but also advanced digital competencies that enable them to navigate complex database interfaces, utilize sophisticated search features, and manage large volumes of electronic information effectively. The integration of emerging technologies such as artificial intelligence, machine learning, and automated research tools has further complicated the information landscape, requiring students to develop new skills and adapt their information-seeking strategies accordingly. The interdisciplinary nature of many postgraduate research projects has created additional complexity in information needs assessment and fulfillment. Students working on interdisciplinary topics often require access to information sources across multiple domains, necessitating familiarity with diverse database platforms, terminologies, and research methodologies (Zhang & Salaba, 2012). This complexity is particularly pronounced in emerging research areas where traditional disciplinary boundaries are blurred, requiring students to develop sophisticated information synthesis skills and access to comprehensive, multidisciplinary information resources.

Challenges in Online Database Usage

The challenges faced by postgraduate students in utilizing online databases represent a multifaceted problem that encompasses technical, cognitive, and institutional dimensions. Tenopir et al. (2009) identified several categories of database usage challenges, including interface complexity, search strategy formulation difficulties, information overload, and inadequate training support. Technical challenges often stem from poorly designed user interfaces that fail to accommodate diverse user needs and varying levels of technical expertise. Many database platforms prioritize comprehensive functionality over user-friendly design, resulting in complex navigation systems that can overwhelm users and impede efficient information retrieval. Cognitive challenges in database usage are particularly pronounced among postgraduate students who must develop sophisticated search strategies while simultaneously managing complex research projects. Research by Jiao and Onwuegbuzie (2001) revealed that many postgraduate students experience significant anxiety when confronting unfamiliar database interfaces, leading to suboptimal search behaviors and incomplete information retrieval. The cognitive load associated with learning multiple database systems, each with unique search syntaxes and organizational structures, can overwhelm students and result in superficial or ineffective use of available resources. Furthermore, the lack of immediate feedback and guidance within database systems can perpetuate ineffective search strategies and reinforce poor information-seeking habits.

Institutional challenges play a crucial role in determining the effectiveness of database usage among postgraduate students. Okello-Obura and Magara (2008) highlighted how inadequate training programs, limited technical support, and insufficient access to computing facilities can significantly impede database utilization. Many institutions provide minimal orientation to database resources, assuming that students will independently develop necessary skills through trial and error. This approach often results in persistent knowledge gaps and suboptimal utilization of expensive database subscriptions. Additionally, technical infrastructure limitations, including unreliable internet connectivity and outdated computer



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systems, can create significant barriers to effective database usage, particularly in developing country contexts. The specific challenges faced by postgraduate students in African universities have been documented in several studies that highlight unique contextual factors. Nhlapo (2015) found that students in South African universities frequently encountered challenges related to limited off-campus access to databases, inadequate training in advanced search techniques, and insufficient integration of database usage into curriculum design. Similar patterns have been observed in other African contexts, where postgraduate students often rely on basic search strategies and fail to utilize advanced database features that could significantly enhance their research efficiency and effectiveness. Recent studies have identified emerging challenges related to the proliferation of database platforms and the increasing complexity of academic information landscapes. Gul et al. (2019) argued that the multiplication of database options, while increasing access to information, has also created new challenges for students who must navigate multiple platforms with varying interfaces, search syntaxes, and organizational structures. The lack of standardization across database platforms means that students must invest significant time and effort in learning system-specific procedures, often without adequate institutional support or training resources. This complexity is compounded by the rapid evolution of database technologies, which requires continuous learning and adaptation by both students and support staff.

Methodology

Quantitative research methodology was adopted and survey research design was used for the study. The population of this study comprised of two (2) faculties of Ahmadu Bello University Zaria which include Faculty of Education and Social Science, and the PG students in the faculties were two thousand six hundred and seventy (2,670). These two faculties were selected because of the large population of the university as a whole and time will not permit. The total sample size for the two faculties is 134 which 5% of 2670 as opined by Yount (2006). Questionnaire was used as the instrument for data collection. The data collected was analyzed and interpreted using frequency tables and simple percentage.

Presentation of Result

Table 1: What are the Information Needs of Postgraduate Students in Ahmadu Bello University, Zaria?

S/N	Information Need	Frequency	Percentage (%)
1.	Academic Information	92	93.9
2.	Research material	72	73.5
3.	Information on Entertainment and Jokes	68	69.4
4.	Health Information	48	49.0
5.	Fashion Information	45	45.9
6.	Job related and Vacancy information	13	13.3
7.	Cultural Information	17	17.3
8.	Multi-Lingual Information resources	7	7.1
9.	Current News	62	63.3
10.	Useful Library instructions	23	23.5
11.	Political Information	51	52.0
12.	Financial Information	40	40.8
13.	Environmental Information	14	14.3

Source: *Field work (2024)*

The analysis of postgraduate information needs at Ahmadu Bello University reveals that academic information constitutes the most critical requirement among students, with 92 respondents (93.9%) identifying this as their primary information need. This was followed by research material with 72 respondents (73.5%), indicating the fundamental role of scholarly resources in postgraduate studies. Surprisingly, information on entertainment and jokes ranked third with 68 respondents (69.4%), suggesting that postgraduate students seek recreational content alongside academic resources. Current news followed with 62 respondents (63.3%), while political information was sought by 51 respondents (52.0%). Health information needs were identified by 48 respondents (49.0%), and fashion information by 45 respondents (45.9%). Financial information was required by 40 respondents (40.8%), while useful library instructions were needed by only 23 respondents (23.5%). Cultural information was sought by 17 respondents (17.3%), environmental information by 14 respondents (14.3%), job-related and vacancy information by 13 respondents (13.3%), and multi-lingual information resources by the least number of respondents at 7 (7.1%).



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The findings reveal that academic information and research materials dominate postgraduate information needs, which aligns with the primary purpose of postgraduate education. However, the high percentage of students seeking entertainment content suggests that postgraduate students require diverse information sources beyond academic materials for holistic development and stress relief. The relatively low demand for job-related information and multi-lingual resources may indicate that students are primarily focused on completing their studies rather than immediate career transitions, while the linguistic homogeneity of the student population reduces the need for multi-lingual resources. This finding has significant implications for library resource allocation and service planning, suggesting that while academic resources should remain the priority, libraries should also consider providing diverse information sources to meet the varied needs of postgraduate students.

Table 2: What are the Challenges being faced by Postgraduate Students in Using Online Databases in Ahmadu Bello University, Zaria.

S/N	Challenges	Frequency	Percentage (%)
1.	Lack of skills	91	92.9
2.	Limited space in the library	46	46.9
3.	Poor internet connection on campus	50	51.0
4.	Unreliable power supply when accessing these resources	45	45.9
5.	Lack of time among students	56	57.1
6.	Inadequate and irrelevant library materials	21	21.4
7.	Lack of awareness of existing resources in the library	87	88.8
8.	Confusion over how to begin the search for resources and how to locate materials	90	91.8
9.	Lack of indigenous Nigerian material available online	15	15.3
10.	Library Staff negative attitudes towards their patrons	84	85.7
11.	Lacking training in and knowledge of using e-resources	88	89.8
12.	Information is scattered in too many sources	20	20.4
13.	Library contains outdated information	26	26.5
14.	Unavailability of full-text articles	14	14.3
15.	Lack of full-text access to older journal articles	12	12.2
16.	Difficulties in accessing electronic information from home	23	23.5

Source: *Field work (2024)*

Table 2 presented the analysis of challenges faced by postgraduate students in using electronic information resources reveals that lack of skills represents the most significant barrier, with 91 respondents (92.9%) identifying this as a major challenge. This was closely followed by confusion over how to begin the search for resources and how to locate materials, affecting 90 respondents (91.8%). Lacking training in and knowledge of using e-resources was identified by 88 respondents (89.8%), while lack of awareness of existing resources in the library affected 87 respondents (88.8%). Library staff negative attitudes towards their patrons was reported by 84 respondents (85.7%). Lack of time among students was identified by 56 respondents (57.1%), while poor internet connection on campus affected 50 respondents (51.0%). Limited space in the library was a challenge for 46 respondents (46.9%), and unreliable power supply when accessing these resources affected 45 respondents (45.9%). Library contains outdated information was reported by 26 respondents (26.5%), while difficulties in accessing electronic information from home affected 23 respondents (23.5%). Information scattered in too many sources was identified by 20 respondents (20.4%), inadequate and irrelevant library materials by 21 respondents (21.4%), lack of indigenous Nigerian material available online by 15 respondents (15.3%), unavailability of full-text articles by 14 respondents (14.3%), and lack of full-text access to older journal articles by the least number at 12 respondents (12.2%). The findings indicate that skill-related challenges dominate the obstacles faced by postgraduate students, with lack of skills, search confusion, inadequate training, and lack of awareness representing the four most significant barriers. This pattern suggests that the primary challenge is not infrastructure or resource availability but rather human capacity and competency development. The high percentage of students experiencing these skill-related challenges indicates a systemic failure in information literacy education and user orientation programs. The relatively lower frequency of infrastructure-related



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challenges such as power supply and internet connectivity, while still significant, suggests that technological barriers, though present, are secondary to capacity-building needs. This finding has profound implications for institutional policy and resource allocation, emphasizing the need for comprehensive information literacy programs and user education initiatives rather than solely focusing on technological infrastructure improvements.

Summary of the Findings

The following are the findings of the study:

1. Academic information (93.9%) and research materials (73.5%) constitute the primary information needs of postgraduate students, confirming the scholarly focus of advanced academic programs.
2. The most significant obstacles to effective database usage are skill-related challenges, with lack of skills (92.9%) and search confusion (91.8%) representing the two most prevalent barriers.

Conclusion

The study reveals a complex information landscape at Ahmadu Bello University where postgraduate students exhibit diverse information needs dominated by academic and research requirements but extending to entertainment and current affairs. The research demonstrates that while students have access to electronic databases and information resources, their ability to effectively utilize these resources is severely constrained by skill deficits rather than technological limitations. The predominance of capacity-related challenges over infrastructure barriers suggests that the university's investment in electronic resources will only yield optimal returns when accompanied by comprehensive information literacy programs and sustained user education initiatives.

Recommendations

1. The university administration should establish a mandatory information literacy program coordinated by the library services department in collaboration with academic departments to address the identified skill deficits among postgraduate students, through hands-on training sessions on database navigation, advanced search techniques, and resource evaluation strategies, delivered through a combination of face-to-face workshops, online tutorials, and embedded course instruction throughout the academic year.
2. The library management should implement a balanced collection development policy that recognizes the diverse information needs of postgraduate students by allocating resources not only to academic databases but also to current news platforms, health information resources, and recreational content within appropriate limits. Through regular user needs assessment surveys, collaboration with student representatives in resource selection, and the development of subject-specific resource guides that highlight both academic and supplementary information sources relevant to different disciplines.

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