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EDITORIAL

It is with a deep sense of scholarly responsibility and institutional pride that we present Volume 26(1) of the Zaria Journal of Educational Studies (ZAJES) for the year 2026. This edition marks another significant milestone in the journal's enduring commitment to advancing rigorous educational research that is relevant, timely, and transformative — not only for Nigeria but for the broader African educational landscape.

The eight peer-reviewed articles assembled in this volume represent a rich and varied intellectual harvest. They traverse themes as diverse as vocational and technical education, traditional and religious pedagogy, early childhood moral development, conflict-induced displacement, higher education reform, and the intersection of faith-based curricula with societal development frameworks. Each contribution has undergone a thorough blind peer-review process involving at least two independent experts, and all manuscripts were subjected to rigorous plagiarism screening, consistent with ZAJES's commitment to academic integrity.

This volume opens with an empirical investigation into supervisory practices and resource availability in North-Western Nigerian polytechnics, identifying systemic challenges that continue to undermine the delivery of Metalwork Technology education. The findings underscore the urgent need for targeted policy reforms, equitable funding, and public-private collaboration in Technical and Vocational Education and Training (TVET). Complementing this, another article revisits Nigeria's traditional education system, calling for its revival and integration into contemporary curricula — a reminder that sustainable educational reform must be rooted in cultural authenticity.

Moral education features prominently in this volume, with contributions examining Islamic and conventional approaches to teaching morality, as well as teachers' perceptions of the Reggio Emilia approach in Kaduna State preschools. These studies collectively challenge educators and policymakers to adopt more holistic, values-driven frameworks in the formation of young learners. Equally compelling is the exploration of how the Quintuple Helix model might be applied through Christian Religious Studies to drive societal development — a bold reimagination of the role of religious education in nation-building.

Finally, the poignant study on the influence of herders-farmers conflict on school enrolment in Benue State brings into sharp focus the inextricable link between peace, security, and the right to education — a challenge that demands both political will and community-centred solutions.

The Editorial Board extends profound gratitude to our authors, peer reviewers, and editorial advisers, whose collective diligence makes ZAJES a trusted voice in educational scholarship. We warmly invite continued submissions from scholars across the educational spectrum as we press forward in our mission to disseminate knowledge that educates, challenges, and inspires.

Dr. Ilesanmi Ajibola
Editor-in-Chief, ZAJES
Federal University of Education, Zaria
Kaduna State, Nigeria

FOREWORD

On behalf of the Federal University of Education, Zaria, it is my singular honour to present this edition of the Zaria Journal of Educational Studies (ZAJES). Since its founding in 1988, ZAJES has steadfastly served as a credible and influential platform for educational scholarship, and this volume continues that proud legacy with scholarly contributions of remarkable breadth and depth.

Education remains the most powerful lever for national transformation. In an era defined by rapid technological change, deepening socioeconomic inequalities, and evolving geopolitical uncertainties, the imperative to invest in quality education has never been more urgent. The Federal University of Education, Zaria, is deeply committed to producing graduates and generating research that responds to the real needs of our society — and ZAJES is a central vehicle through which we fulfil that mandate.

The articles in this volume reflect the complexity and richness of educational challenges facing Nigeria and Africa at large. From the inadequacies of vocational infrastructure in northern polytechnics to the promise of artificial intelligence in teaching and learning in universities, from the moral formation of preschoolers to the strategic reimaging of African higher education for economic development, these studies do not merely describe problems but propose evidence-based pathways for improvement. This is precisely the kind of scholarship our nation needs.

Particularly noteworthy is the attention this volume gives to peace and security as prerequisites for educational access. The documentation of how violent conflicts between herders and farmers have devastated school enrolment in Benue State is a sobering reminder that educational policy cannot be divorced from the broader work of peacebuilding and social cohesion. We must all — scholars, policymakers, community leaders — take responsibility for creating environments in which every child can safely pursue learning.

I am equally encouraged by the journal's engagement with endogenous knowledge systems and culturally rooted pedagogies. A people who educate their children without reference to their heritage risk producing graduates who are disconnected from the communities they are meant to serve. ZAJES provides a valued space for this important conversation.

I congratulate the Editor-in-Chief, Dr. Ilesanmi Ajibola, the Editorial Board, and the contributing authors for their dedication and intellectual rigour. I trust that this volume will stimulate productive discourse among scholars, practitioners, and policymakers, and that its findings will inform decisions that bring us closer to an equitable, innovative, and flourishing educational system for Nigeria and beyond.

Prof. Yahaya Isa Bunkure, FNIP, STAN, MNAE
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Federal University of Education, Zaria
Kaduna State, Nigeria

BRIEF INFORMATION ABOUT THE JOURNAL

Zaria Journal of Educational Studies (ZAJES) is an official academic journal published by the Federal University of Education in Zaria, Nigeria. The journal was established in 1988, when the college was still part of Ahmadu Bello University, Zaria. Since its inception, ZAJES has served as an important platform for scholars and practitioners in various fields of education to publish research findings, perspectives, and responses to prior work. Recognising the journal's high standards, the Tertiary Education Trust Fund (TETFund) of Nigeria sponsored the production of its issues in 2010.

Mission

The mission of the ZAJES is to promote and disseminate high-quality research in education. The journal seeks to publish papers that are theoretically sound, methodologically rigorous, and relevant to the needs of the educational community. ZAJES also aims to provide a forum for exchanging ideas and perspectives on the most pressing issues in education.

Scope

ZAJES welcomes submissions on any topic related to education. To help readers easily find relevant papers, the articles were grouped into five broad subject areas.

- Arts and Social Science Education
- language and Literature Education
- Science and Mathematics Education
- Trends and Innovations in Education
- Vocational and Technical Education

Peer Review Process

All papers submitted to ZAJES underwent an initial online similarity check (plagiarism test) and only considered articles with 15% or less online similarity results and 5% same source similarity level. Accepted papers are further subjected to a rigorous peer review process. Each study was reviewed by at least two experts in the field. The reviewers provide feedback on the strengths and weaknesses of the paper and recommended revisions. The editors of ZAJES then decide whether to accept or reject the paper.

Publication Process

Accepted papers are published on two issues annually. The journal is indexed in several major bibliographic databases.

Disclaimer

While the journal publishes a diversity of well-researched ideas and opinions, the content does not necessarily reflect the publisher's or editorial board's views. The responsibility for the accuracy and originality of the papers lies entirely in the contributing authors. However, through rigorous peer review and editorial processes, ZAJES strives to maintain high academic standards and serves as a valuable resource for the education community.

EDITORIAL POLICY

The Editorial Board of the Zaria Journal of Educational Studies (ZAJES) invites papers from stakeholders interested in education for publication in the journal. This paper focuses on analytical research, research reports, replicated research, research notes, descriptive research, book reviews, etc., from any of the following areas in education:

- Adult and Non-formal Education
- Citizenship Education
- Computer Information and Communication Technology (ICT) Education
- Continuing/Distance Education
- Creative Arts Education
- Curriculum Planning and Development
- Educational Management/Administration, Planning and Supervision
- Health and Physical Education
- Language and Literature Education
- Measurement and Evaluation
- Library and Information Management
- Nomadic and Disadvantaged Peoples' Education
- Philosophy and Sociology of Education
- Family Life Education
- Pre-Primary, Primary, Secondary and Higher Education
- Psychology and Counselling
- Religious and Moral Education
- Science, Technology and Mathematics Education
- Social Science Education
- Special and Rehabilitative Education
- Vocational and Technical Education

Guidelines for Paper Preparation

Manuscripts:

- must be written in English or any other acceptable language, and should be scholarly, original, and contribute to knowledge.

- must not have been published or under consideration for publication in any other journal. Once a paper is accepted for publication in ZAJES, the author(s) cede copyright to the journal's publisher.
- should clearly state on its front cover page the title of the paper, the author's name(s), their status/rank, and institutional affiliation. The next page should also begin with the title of the paper (but not the author's name), followed by an abstract of not more than 150 words.
- should be computer typed on one side of the paper, using a font size of 12 double-spaced for the main work, and single line spacing for the abstract should not exceed 12 pages of A4 paper, including abstract, references appendices: and tables, figures, and diagrams, where applicable, should be simple, camera-ready, and kept to the barest minimum to facilitate printing.

References

The current American Psychological Association (APA) citation style (7th edition) is accepted by journals. This should be cited as follows:

In-Text Citation

An in-text citation should be deployed when the author quotes a source or paraphrases another work in their own words. These could be in the article's narrative or as parenthetical citations. See the examples below.

Narrative Citation

Narrative citations should be used when an author's work or quote is cited alongside their names. For example, the impact of colonial missionary activities on Igbo sociocultural activities is well captured by Achebe (2009), who observed that "The white man is very clever. He came quietly and peacefully along with his religion. We were amused by his foolishness and allowed him to stay. Now, he has won over our brothers and our clan can no longer act like one. He has put a knife on the things that held us together, and we have fallen apart" (p.81).

Parenthetical Citation

This form of citation is used when someone else's work or idea is paraphrased as a summary or synthesis in their own words.

For example, Achebe (2009) narrates the development of the negative effect of colonial influence on African culture in *Things Fall Apart* (p.81). Or,

The radical factor for the disconnect between the *de iure* and *de facto* African family systems is the unbridled assimilation of Western culture by Africans (Achebe, 2009).

Book

Achebe, C (2009). *Things Fall Apart*. Penguin Books.

Chapter in an Edited Book

Swindler, L (2013). History of Inter-Religious Dialogues. In C. Cornille (Ed.) *The Wiley Blackwell Companion to an Inter-Religious Dialogue*. Wiley-Blackwell: A John Wiley & Sons, Ltd., Publication.

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Conference Proceedings

Ikenga, G. U (2015). Education in 100 Years of Nigeria's existence: The needs and benefits of Public Private Partnerships in education. *Proceedings of the IRES 3rd International Conference* 74–78.

Projects/Thesis/Dissertations

Ajibola, I (2018). *A Theological Analysis of Confessional-Centric Curriculum of Christian Religious Education: Towards an Inclusive Religious Pluralistic Centred Curriculum for Nigeria Colleges of Education*. Doctoral dissertation, Duquesne University, Pittsburgh, PA, USA.

Type of Citation	Narrative Format	Parenthetical Format
Single author	Achebe (2009)	(Achebe, 2009)
Two authors	Soyinka and Anyebe (2009)	(Soyinka & Achebe, 2009)
Three or more authors	Achebe et al. (2009)	(Achebe et al., 1999)

Submission of Manuscript/Correspondence

The submission of this manuscript is online. All articles must be submitted at zarjes.com

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IMPACT OF SUPERVISORY PRACTICES, INSTRUCTIONAL MATERIALS, AND EQUIPMENT AVAILABILITY ON THE DELIVERY OF THE NCE METALWORK TECHNOLOGY CURRICULUM IN NORTH-WESTERN NIGERIAN POLYTECHNICS

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Abstract:

The study examines how supervisory practices, availability of instructional materials, and equipment influence effective delivery of the NCE Metalwork Technology curriculum in polytechnics across North-Western Nigeria. Employing a descriptive survey design, data were gathered from 140 respondents (lecturers, technologists, administrators) in selected federal and state polytechnics using a structured Likert-scale questionnaire (Cronbach's $\alpha = 0.87$). Results indicate moderate supervisory practices ($M = 3.12$, $SD = 0.78$), low instructional materials availability ($M = 2.38$, $SD = 0.92$), and critically low equipment functionality ($M = 2.21$, $SD = 0.85$), correlating with fairly low curriculum delivery effectiveness ($M = 2.65$, $SD = 0.81$). Pearson correlations and t-tests revealed significant positive relationships ($p < 0.05$) between the independent variables and delivery outcomes, with federal institutions performing marginally better than state institutions. Respondent quotes highlight themes of irregular supervision, obsolete machinery, and consumable shortages hindering practical training. The findings align with broader Nigerian TVET challenges, including funding deficits and infrastructural decay. Recommendations focus on enhanced supervisory training, targeted resource allocation, public-private partnerships, and policy reforms to align with national industrialization and SDG 4 objectives. This research contributes to evidence-based interventions for revitalizing metalwork technology education in underserved northern regions.

Introduction

Technical and Vocational Education and Training (TVET) is vital for Nigeria's economic diversification away from oil dependence, youth employment, and technological progress. By providing practical, industry-aligned skills in sectors like manufacturing, construction, agriculture mechanization, and metal

fabrication, TVET promotes self-employment, reduces high youth unemployment (over 60% of the population is young), and builds a competent workforce. It supports key national frameworks, including the National Policy on Education, the Economic Recovery and Growth Plan (ERGP), and Sustainable Development

Goals 4 (quality education) and 8 (decent work and economic growth), while closing the widening gap between education outputs and industrial needs to boost productivity, innovation, and competitiveness.

The Nigeria Certificate in Education (NCE) Metalwork Technology programme, regulated by the National Commission for Colleges of Education (NCCE), plays a targeted role in producing qualified technical teachers for junior secondary Basic Technology and technical colleges. Graduates deliver hands-on training in welding and fabrication, machining, sheet metalwork, forging, foundry practices, and tool maintenance, combining pedagogical skills with trade competencies to ensure safe, proficient metalworking instruction and sustain Nigeria's supply of skilled artisans and educators. NCCE minimum standards (2020 revised and updates) require fully equipped workshops with hand tools (files, hammers, callipers), power machines (lathes, milling machines, grinders), arc/gas welding sets, benches with vices, safety gear, and regular consumables (electrodes, cutting fluids, abrasives, steel stock) to achieve psychomotor and safety objectives.

However, polytechnics in North-Western Nigeria (Kano, Kaduna, Katsina, Sokoto, Kebbi, Jigawa, Zamfara) face severe barriers: chronic underfunding restricts equipment purchase and maintenance; many workshops use

outdated, broken machinery due to neglect and spare-part shortages; security issues (banditry, kidnapping, conflicts) disrupt supply chains and deter upgrades; and resource allocation favours southern/central zones via TETFund, World Bank projects (IDEAS, STEP-B), and private partnerships, leaving the North-West underserved despite its population and industrial potential (Kano hub).

The 2025 NBTE-led nationwide TVET evaluation confirmed persistent infrastructure deficits, outdated curricula in places, weak industry links, and graduate skill gaps particularly limited exposure to modern practices like CNC and advanced welding resulting in low employability and poor trade-test performance. These challenges undermine TVET's potential in the North-West, perpetuating youth unemployment, slow industrialization, and regional inequality. Urgent solutions include equitable funding, targeted interventions, improved security for educational facilities, and stronger public-private partnerships to revitalize NCE Metalwork Technology delivery and advance Nigeria's development goals.

Statement of the Problem

Despite well-established policy frameworks from the National Commission for Colleges of Education (NCCE) and the National Board for Technical Education (NBTE), which

outline clear minimum standards for workshop facilities, instructional resources, and supervisory oversight, the delivery of the Nigeria Certificate in Education (NCE) Metalwork Technology curriculum in many North-Western Nigerian polytechnics remains markedly ineffective, (Aina, and Adebayo, (2021).) However, if this is taken into cognizance via improvement, the situation would have look better than the present status. These guidelines mandate regular internal and external supervision, adequate provision of instructional materials (textbooks, diagrams, consumables), and functional equipment to support practical, competency-based training in core areas such as metal fabrication, arc and gas welding, machining (lathe and milling operations), sheet metalwork, forging, and foundry practices.

In practice, however, supervisory inconsistencies severely undermine implementation. Monitoring is often irregular, with departmental heads and external NBTE/NCCE inspectors conducting infrequent visits due to logistical constraints, inadequate funding for travel, and overburdened supervisory staff. When supervision does occur, feedback is typically limited, superficial, or delayed, offering little actionable guidance to improve teaching strategies or resource utilization. This lack of consistent oversight allows deviations from the intended, practical-oriented approach to persist unchecked.

Compounding these issues are the chronic scarcity of instructional materials and the widespread non-functionality of essential equipment. Many workshops suffer from shortages of consumables (welding electrodes, cutting fluids, abrasives, mild steel stock), outdated or broken machines (lathes with seized spindles, non-operational welders, missing grinding wheels), and poor maintenance culture due to insufficient budgetary allocations. As a direct consequence, instructors resort to over-reliance on theoretical lectures and chalk-and-talk methods, drastically reducing hands-on practice time.

The outcomes are profound and multifaceted. Students experience poor psychomotor skill acquisition, leaving them unable to confidently perform critical tasks such as precision measurement, safe welding, or accurate machining. This deficiency translates into low graduate employability, as industries in fabrication, welding, and machining demand verifiable practical competence rather than theoretical knowledge alone. Ultimately, the programme fails to meet contemporary industrial demands, perpetuating a skills mismatch that hinders Nigeria's manufacturing sector growth, youth empowerment, and regional economic development in the North-West. Addressing these interconnected challenges, such as supervisory lapses, resource shortages, and equipment dysfunction, is essential to restoring the

curriculum's intended practical focus and producing competent, industry-ready technical educators and practitioners.

Objectives of the Study

1. To determine the extent to which supervisory practices influence the effective delivery of the NCE Metalwork Technology curriculum in polytechnics in North-Western Nigeria.
2. To examine the impact of the availability of instructional materials on the effective delivery of the NCE Metalwork Technology curriculum in polytechnics in North-Western Nigeria.
3. To assess the influence of equipment availability on the effective delivery of the NCE Metalwork Technology curriculum in polytechnics in North-Western Nigeria.

Research Questions

1. To what extent do supervisory practices influence the effective delivery of the NCE Metalwork Technology curriculum in polytechnics in North-Western Nigeria?
2. To what extent does the availability of instructional materials affect the effective delivery of the NCE Metalwork Technology curriculum in polytechnics in North-Western Nigeria?
3. To what extent does the availability of equipment influence the effective delivery of the NCE Metalwork Technology curriculum in polytechnics in North-Western Nigeria?

Hypotheses

- H₀₁** There is no significant influence of supervisory practices on the effective delivery of the NCE Metalwork Technology curriculum in polytechnics in North-Western Nigeria.
- H₀₂** There is no significant impact of the availability of instructional materials on the effective delivery of the NCE Metalwork Technology curriculum in polytechnics in North-Western Nigeria.
- H₀₃** There is no significant influence of equipment availability on the effective delivery of the NCE Metalwork Technology curriculum in polytechnics in North-Western Nigeria.

Review of Related Literature

Relevant literature was objectively reviewed, as can be seen in the sub-topics below.

Supervisory Practices in TVET

Supervision plays a critical role in ensuring instructional quality, curriculum compliance, and continuous professional development of teachers in Technical and Vocational Education and Training (TVET) institutions. Effective supervision involves regular classroom and workshop observations, constructive feedback, performance evaluation, and guidance on pedagogical strategies, all of which help maintain fidelity to the intended practical-oriented delivery of programmes such as NCE Metalwork Technology.

Okwelle (2022) highlights significant managerial challenges in the supervision of 21st-century TVET programmes in Nigeria, including inadequate training for supervisors, limited logistical support (transportation and monitoring tools), insufficient time allocation due to heavy administrative loads, and lack of standardized supervisory instruments. These constraints frequently result in irregular and superficial oversight, where visits are sporadic, feedback is minimal or absent, and follow-up actions are rarely implemented.

In the Nigerian context, particularly within polytechnics and colleges of education, poor supervision contributes directly to deviations from the practical-oriented approach mandated by NCCE standards. Without consistent monitoring, instructors often default to lecture-based methods, neglecting hands-on activities in metal machining, welding, and fabrication due to resource or time pressures. This undermines psychomotor skill development, reduces student engagement with workshop tasks, and compromises the production of competent technical teachers. Strengthening supervisory capacity through targeted training, clear protocols, and adequate resources is therefore essential to bridge the gap between policy intent and actual curriculum delivery.

Okwelle's findings highlight that effective supervisory practices, coupled with adequate availability of instructional materials and equipment, are essential for

overcoming implementation barriers and ensuring the successful delivery of the NCE Metalwork Technology curriculum in North-Western Nigerian polytechnics, where deficiencies in these areas directly hinder practical skill acquisition and overall curriculum effectiveness.

Instructional Materials and Equipment Availability

Instructional materials such as charts, textbooks, diagrams, and consumables (welding electrodes, cutting fluids, abrasives, mild steel stock) along with functional equipment (lathes, milling machines, arc welders, grinders, hand tools, benches with vices) form the backbone of the psychomotor domain in metalwork technology. These resources enable students to develop essential hands-on skills, including precision machining, safe welding techniques, material manipulation, and tool handling, which are central to achieving NCCE-specified competencies in fabrication, forging, foundry, and sheet metalwork.

Raheef (2024) emphasizes that shortages of such facilities critically hinder effective teaching and learning processes in technical education, often leading to reduced student engagement and superficial skill acquisition. Ogunbote (2024) specifically highlights outdated equipment, chronic funding shortages, and poor maintenance practices as persistent barriers in Nigerian tertiary metalwork workplaces, resulting in graduates who lack industry-ready

proficiency. Raheef's (2024) emphasis on the inadequacy of instructional materials and equipment, which severely limits hands-on skill acquisition and innovative teaching approaches in metalwork programs, synergizes with Ogunbote's (2024) findings on the critical need for suitable, well-equipped workplaces and modern resources in tertiary institutions. Together, these reinforce that deficiencies in equipment availability and instructional support not only hinder effective supervisory practices but also compromise the overall delivery of the NCE Metalwork Technology curriculum in North-Western Nigerian polytechnics, ultimately undermining students' practical competencies, employability, and the curriculum's goal of producing skilled technical educators and practitioners. Addressing these interconnected challenges through targeted provision of resources and enhanced supervision could significantly improve implementation outcomes.

In an analogous northern context, Bwala (2020) assessed facilities in North-Eastern colleges of education and reported grossly inadequate modern tools and machines, directly correlating with low student performance in practical assessments. Complementing these findings, a 2025 study on automobile and metalwork skill development established strong positive correlations between the adequacy of workshop resources and students' demonstrated proficiency in key

practical tasks, reinforcing that resource availability is a decisive factor in bridging the gap between curriculum intent and actual skill outcomes in TVET programmes.

Curriculum Delivery in NCE Metalwork Technology

Curriculum delivery in the Nigeria Certificate in Education (NCE) Metalwork Technology programme is fundamentally hands-on and practical-oriented, designed to equip pre-service technical teachers with essential psychomotor skills for teaching junior secondary school basic technology and related trades. According to the National Commission for Colleges of Education (NCCE) minimum standards (revised editions, including 2012 and 2020 updates), the programme emphasizes competencies in key areas such as metal machining, sheet metalwork, forging, welding, foundry practices, metal fabrication, and basic tool handling. These practical components are intended to dominate instruction, with students engaging in workshop-based activities to develop trade-related skills like problem-solving, precision measurement, material selection, and safe equipment operation. The goal is to produce graduates who can competently teach and practice metalwork, fostering self-reliance, employability, and alignment with industrial needs in Nigeria's evolving manufacturing sector.

However, delivery often suffers when resources are limited, resulting in a pronounced theory bias that undermines the programme's core objectives. In many North-Western Nigerian polytechnics and colleges of education, inadequate funding, outdated or non-functional equipment (lathes, milling machines, arc welders), and shortages of consumables (welding rods, cutting fluids, abrasives) force instructors to prioritize lectures and theoretical explanations over practical demonstrations and student-led projects. This shift diminishes hands-on experience, leading to superficial skill acquisition, reduced student confidence in performing real-world tasks, and poor retention of psychomotor competencies. Studies highlight that such constraints contribute to graduates' skill gaps, low pass rates in practical examinations, and challenges in meeting industry demands for competent fabricators and technical educators.

Recent curriculum revisions have compounded these issues while attempting modernization. Sabo (2021) notes that the NCCE minimum standards (2020 revised edition) reduced overall graduation credit units from 118 (in the 2012 version) to 94 for the entire NCE (Technical) programme, including general and pedagogical courses. Specifically for Metalwork Technology, trade-specific credits dropped from 64 to 48, a 21% reduction without proportional adjustments to content delivery

mechanisms. While the revision aimed to streamline the curriculum, promote trade specialization, entrepreneurship, and relevance to basic education, it has inadvertently intensified pressure on already strained resources. With fewer credits allocated to practical modules like foundry and machining, instructors face difficulties covering essential psychomotor outcomes effectively, especially in under-equipped workshops. This reduction creates a mismatch between expected practical depth and available instructional time and facilities, further entrenching theory-dominated approaches. The credit reduction in the revised NCE (Technical) minimum standards (from 64 to 48 credit units for metalwork technology, a 21% cut in trade-specific content) has significant implications for curriculum delivery. It creates substantial gaps in coverage of essential practical topics, limiting depth in hands-on training and potentially weakening graduates' competence in trade-related skills like machining, forging, and foundry work.

Sabo (2021) suggests this reduction exacerbates challenges in achieving intended practical skill outcomes, as the condensed content widens the mismatch between traditional lecture-based methods and required hands-on proficiency, contributing to poorer student performance and retention in subjects like metal foundry.

While Sabo (2021) primarily offers intrinsic analysis highlighting the need for trade specialization, entrepreneurship alignment, and relevance to basic education without explicit solutions in cited references, subsequent studies (Adamu et al., 2024) build on this by recommending innovative pedagogies like problem-based learning to mitigate gaps and enhance practical skill retention despite reduced credits.

Addressing these challenges requires targeted interventions, such as increased budgetary support for workshop upgrades, integration of modern technologies (basic CNC or simulation tools where feasible), and enhanced instructor training in adaptive teaching strategies. Without such measures, curriculum delivery will continue to fall short of producing fully competent metalwork technology graduates capable of contributing to Nigeria's industrialization goals.

Theoretical Framework

The Input-Process-Output (IPO) Systems Theory, derived from general systems theory, views educational programmes as dynamic systems where inputs (resources like supervisory practices, instructional materials, and equipment) interact through processes (teaching, monitoring, and practical activities) to produce outputs (effective curriculum delivery, skill acquisition, and graduate competence). In TVET contexts,

inadequate inputs disrupt practical processes, yielding suboptimal outputs such as theory-biased instruction and skill gaps.

This study directly relates to the IPO model: supervisory practices, instructional materials, and equipment availability serve as critical inputs influencing the process of NCE Metalwork Technology curriculum delivery in North-Western Nigerian polytechnics. Deficiencies in these inputs (irregular supervision, scarce consumables, non-functional machines) hinder hands-on processes, resulting in low delivery effectiveness, reduced psychomotor skills, and misalignment with industrial demands consistent with empirical findings of moderate supervision and low resource levels leading to fairly low programme outcomes.

Methodology

Design and Population

Descriptive survey; population: 210 staff in NCE Metalwork departments (federal/state polytechnics).

A multi-stage sampling technique was used for the study. At the first stage, a purposive sampling technique (PST) was used to justify the polytechnics that offer the NCE Metalwork Technology programme as Federal Polytechnic Kaduna, Nuhu Bamalli Polytechnic Zaria, Kano State Polytechnic Kano, Hassan

Usman Katsina Polytechnic, Katsina State, and Waziri Umaru Federal Polytechnic Birnin Kebbi State. However, other sample sizes were portrayed in Table 1 below. This selection was purposely carried out based

on the federal and state polytechnics offering the programme only. So, the selection was based on the purpose of the study.

Table 1: Population and Sample Size which was proportionally carried out

Category	Population	Sample Size	Percentage	Sampling Technique
Federal Polytechnics	120	80	67%	Stratified random
State Polytechnics	90	60	67%	Stratified random
Lecturers	150	100	-	-
Technologists/Administrators	60	40	-	-
Total	210	140	67%	-

Sample via Taro Yamane (95% confidence)

Instrument and Reliability

5-point Likert questionnaire was used for the study; sections on variables; Cronbach's $\alpha = 0.87$.

Data Collection and Analysis

Administered 2025; analyzed with means, SD, Pearson r, t-test (SPSS).

Results and Discussion

Demographic Profile

Respondents: 65% lecturers, 29% technologists, 6% administrators; 70% male; experience 5–15 years.

Table 2: Mean Ratings of Variables (N = 140)

Variable	Mean	SD	Decision/Remark
Supervisory Practices (frequency, feedback)	3.12	0.78	Moderate
Instructional Materials Availability	2.38	0.92	Low
Equipment Availability and Functionality	2.21	0.85	Low
Curriculum Delivery Effectiveness (practical emphasis, skill acquisition)	2.65	0.81	Fairly Low

Detailed Analysis with Respondent

Supervision: Moderate due to "irregular NBTE visits and departmental heads overburdened" (Lecturer, Kano Polytechnic). Materials: Low "Consumables like electrodes often out of

stock for months" (Technologist, Katsina). Equipment: Low "Only 40% of lathes functional; no modern CNC". Delivery: Hindered "We teach theory mostly; students lack hands-on confidence" (Lecturer, Kaduna).

Hypothesis Testing

Table 3: Pearson Correlation Results

Hypothesis	R	p-value	Decision
H01: Supervision & Delivery	0.58	0.000	Reject H01
H02: Materials/Equipment & Delivery	0.64	0.000	Reject H02

Significant positive relationships ($p < 0.05$).

Independent t-test: Federal vs. State institutions ($t = 3.41, p = 0.001$), federal slightly higher means.

Discussion of Findings

The findings of this study reveal moderate supervisory practices ($M = 3.12, SD = 0.78$), low availability of instructional materials ($M = 2.38, SD = 0.92$), and critically low equipment availability and functionality ($M = 2.21, SD = 0.85$) in North-Western Nigerian polytechnics offering the NCE Metalwork Technology programme. These factors collectively contribute to fairly low curriculum delivery effectiveness ($M = 2.65, SD = 0.81$), characterized by limited practical training, reduced student psychomotor skill acquisition, and over-reliance on theoretical instruction. The positive and significant correlations (supervision $r = 0.58, p < 0.001$; materials/equipment $r =$

$0.64, p < 0.001$) underscore that improvements in these areas directly enhance hands-on delivery and overall programme outcomes.

These results align closely with recent scholarship on resource-skill linkages in Nigerian TVET. Ogunbote (2024), in examining metalwork technology workplaces in tertiary institutions, identified outdated equipment, poor funding, and inadequate maintenance as major barriers to effective training, leading to skill deficiencies among graduates. Similarly, the 2025 study by Ogunbote et al. on adequate workshop tools in South-West universities of education demonstrated that resource scarcity negatively impacts skill development in automobile and

metalwork technology, with students in under-equipped settings showing lower proficiency in machining, welding, and fabrication, mirroring the low equipment ratings in the present North-West context. Raheef (2024) emphasized that the availability of facilities is essential for supporting teaching and learning processes in technical education, concluding that shortages hinder effective delivery and provoke negative public perceptions of TVET programmes. These studies collectively reinforce the input-process-output dynamics: insufficient resources (inputs) disrupt practical-oriented processes, yielding suboptimal skill outputs. While this study (focused on North-Western Nigerian polytechnics) finds supervisory practices moderately supportive but often inconsistent due to regional resource constraints, Ogunbote (2024) emphasizes challenges in implementing suitable metalwork workplaces in tertiary institutions nationwide, highlighting infrastructure deficits more broadly. Raheef (2024) underscores severe inadequacies in facilities and equipment availability impacting TVET teaching/learning, with stronger public skepticism toward technical education's value.

Nuances: This study's regional emphasis reveals supervisory practices as a partial mitigator of material shortages, whereas Ogunbote prioritizes workplace suitability/equipment modernization, and Raheef stresses broader facility gaps and

negative perceptions suggesting integrated supervision could bridge equipment deficiencies more effectively in North-West contexts than in general Nigerian settings.

Regional funding disparities exacerbate these challenges in the North-West compared to national averages. While federal interventions (TETFund allocations and recent World Bank-supported initiatives like IDEAS) have improved some southern and central zones, North-Western polytechnics often receive disproportionately lower shares due to historical inequities, security concerns disrupting supply chains, and competing priorities in education budgets. National TVET assessments indicate that northern zones, including the North-West, consistently lag in infrastructure investment, with many workshops relying on obsolete or non-functional lathes, welders, and grinders contrasting with better-resourced institutions elsewhere. This geographic imbalance perpetuates a cycle of theory-biased instruction, lower graduate employability, and misalignment with industrial demands in metal fabrication and related sectors.

Furthermore, respondent quotes from the study illuminate these realities: one lecturer noted, "Irregular supervision and lack of consumables force us to skip practical sessions," while a technologist added, "Many machines have been down for years due to no maintenance funds." These qualitative insights complement

the quantitative data, highlighting how supervisory lapses compound resource shortages, leading to inconsistent monitoring and feedback that could otherwise optimize limited facilities.

In broader terms, the findings contribute to ongoing discourse on TVET revitalization in Nigeria, aligning with calls for equitable resource distribution to achieve SDG 4 targets on quality education and skills. Without addressing these regional disparities through targeted funding, supervisory capacity building, and public-private partnerships, NCE Metalwork Technology programmes in the North-West risk continued underperformance, hindering national industrialization goals.

Summary of findings

There was a strong positive and significant correlation between supervisory practices and curriculum delivery effectiveness ($r = 0.58$, $p < 0.001$).

A strong positive and significant correlation existed between the combined availability of instructional materials and equipment and curriculum delivery effectiveness ($r = 0.64$, $p < 0.001$).

Improvements in supervisory practices, instructional materials, and equipment availability were found to significantly enhance hands-on curriculum delivery and overall programme outcomes.

Conclusion

Supervisory inconsistencies, material/equipment deficits severely impair NCE Metalwork curriculum delivery, perpetuating skill gaps and TVET underperformance in North-Western Nigeria.

Recommendations

Strengthen Supervisory Capacity and Frequency by the Curriculum Development Agency: The National Commission for Colleges of Education (NCCE), in collaboration with polytechnic managements, should implement mandatory, structured supervisory training programmes for departmental heads, workshop coordinators, and external monitors. This should include quarterly on-site monitoring schedules, standardized observation checklists, and timely, actionable feedback mechanisms. Such measures would directly address the moderate supervisory rating and capitalize on the $r = 0.58$ correlation to improve instructional quality and practical delivery.

Increase Targeted Funding and Resource Allocation for Instructional Materials and Equipment: Given the stronger correlation ($r = 0.64$) between materials/equipment availability and curriculum effectiveness, federal and state governments, through TETFund and special intervention funds, should prioritize ring-fenced grants for North-Western polytechnics. These should focus on procuring modern lathes, milling machines,

functional welding sets, safety gear, and regular replenishment of consumables (electrodes, cutting fluids, abrasives). Performance-based funding tied to improvements in workshop functionality and practical session hours is recommended to ensure accountability.

Establish Regular Maintenance and Inventory Systems: Polytechnics should institute dedicated workshop maintenance units with annual budgets and trained technical staff. Routine preventive maintenance schedules, spare parts stocking, and digital inventory tracking would prevent prolonged equipment downtime and sustain the positive impact of resource improvements on hands-on training outcomes.

Promote Public-Private Partnerships and Industry Linkages: Collaborate with local metal fabrication, welding, and manufacturing firms in Kano, Kaduna, and other industrial hubs to sponsor equipment donations, consumable supplies, and co-funded workshop upgrades. Industry experts could also serve as adjunct supervisors or guest instructors, reinforcing practical relevance and extending the benefits of enhanced supervision and resources.

Integrate Monitoring and Evaluation Mechanisms: NCCE/NBTE should develop a national TVET dashboard to track key indicators (supervisory visit frequency, equipment functionality rate, practical session coverage) across zones. Annual regional equity audits and

corrective interventions would help close the North-West gap and sustain long-term gains in curriculum delivery effectiveness.

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REVISITING THE TRADITIONAL EDUCATION SYSTEM IN NIGERIA: A CALL FOR REVIVAL AND REFORM

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Abstract:

Nigeria's indigenous education system, rooted in community participation, moral development, and vocational skills, predates colonial schooling and once played a vital role in preparing individuals for productive societal roles. However, Western-style education has largely displaced these traditional models, leading to the erosion of cultural identity, rising youth unemployment, and a widening skills gap. This paper revisited the core principles, goals, and pedagogical methods of Nigeria's traditional education system, emphasizing its holistic, inclusive, and context-specific approach to lifelong learning. Through comparative analysis, it highlighted how traditional education focused on character, community, and practical competence. Drawing on current challenges in Nigerian education, the study advocated for a blended reform strategy that integrates indigenous knowledge, mother-tongue instruction, apprenticeship models, and community participation into the formal curriculum. It was concluded that reviving and reforming traditional education practices can enrich the national education framework, strengthen cultural continuity, and better equip youth with the skills and values needed for sustainable development in a globalized world.

Introduction

Nigeria's contemporary education system, shaped by colonial and Western models, has often marginalized indigenous learning. However, before the arrival of Islam and Christianity, African communities had well-established systems of teaching that prepared young people for life in their society. Traditional education in Nigeria

consists of informal, home, and community-based learning that immerses children in cultural values, practical skills, and social responsibility. Although often overlooked today, this system ensured that nearly every individual acquired trade, moral grounding, and a sense of belonging. Its aims include preserving cultural heritage, adapting youths to their environment, and

instilling values critical to communal survival. In contrast, Western-style schooling introduced under colonialism emphasized literacy, abstract knowledge, and white-collar careers, but often failed to equip many Nigerians with practical skills or cultural identity. As Ibe-Moses and Okafor (2021) observed, even though modern education had advantages, “a scrutiny of traditional education could bring a balance to our failing educational system”.

The growing disconnection between home and school in Nigeria has far-reaching consequences. Many Nigerian youths, exposed solely to formal classroom instruction, lack vocational competencies and a strong cultural identity, contributing to rising unemployment and social vices (Odumade, 2014). Globalization and urbanization have further widened this gap, denying children access to indigenous systems of education rooted in oral traditions, practical skills, and communal values (Ajayi, 2016). Scholars and cultural experts have warned that Nigeria’s rich fables, taboos, and oral traditions are being “crushed under the weight” of foreign influences, as language and culture rapidly shift under external pressures (Abimbola, 2006; Olatunji, 2020). In response, UNESCO (2003) advocated for the integration of cultural heritage into national curricula, asserting that

education grounded in indigenous knowledge can “equip students with skills that are invaluable in the workforce while promoting life skills, inclusivity, and global readiness. Against this background, this study revisits Nigeria’s traditional education system by calling for revival and reform.

Concept of Traditional Education

Traditional Nigerian education, often called “indigenous” or “folk education,” refers to learning that takes place naturally within a child’s cultural context, outside formal schools. It is community-centered and multi-faceted: children acquire knowledge and skills by observing and participating in their daily routines. Andrew Adegga noted that “traditional or indigenous education is an educational system in which the individual learns the values, culture, norms, skills, language, and habits of their own society,” deriving lessons from everyday experiences and relationships. In effect, a child is “taught” by family and kin through tasks, stories, ceremonies, and play, rather than by a teacher in the classroom.

Omolewa (2007) noted that informal and vocational training are at its core: every person is “practically trained and prepared for his/her role in society,” with storytelling, proverbs, and myths serving as learning tools. He

argued that traditional African education, though not written or standardized, always aimed at “excellence and quality” in a broad sense, combining physical, intellectual, social, and spiritual development. This implies that a child might learn history, ethics, and mathematics through practical activities such as counting tasks while farming or understanding laws through folk tales. In short, the boundaries between the subjects were blurred and knowledge was deeply contextual.

Ibe-Moses and Okafor (2021) highlighted that traditional children’s play literally mirrored adult duties, such as boys pretending to herd cattle. As soon as a child is physically able, he or she begins contributing to the community, whether by gathering firewood or carrying water, while also learning about that task. Elders then refine this knowledge; for example, a boy helping on the farm will eventually be sent off to learn specific farming techniques or animal husbandry under the guidance of a skilled parent or relative. This apprenticeship model implies that education is embedded in work. Ibe-Moses and Okafor also noted that the child learns about the trade of the family from cradle to adult life, so education and livelihood are inseparable.

Seven Cardinal Goals of Traditional Education

Fafunwa (1974), a renowned Nigerian educator, distilled the underlying objectives of traditional African education into seven cardinal goals. These goals illustrate the holistic purpose of the system.

- *Physical development:* To develop a child’s latent physical skills (coordination, strength, agility).
- *Character building:* To cultivate integrity, discipline, and moral character.
- *Respect for authority:* To inculcate respect for elders and persons of authority.
- *Intellectual development:* To develop a child’s intellectual skills (reasoning and problem-solving).
- *Vocational training:* Provides specific vocational skills and fosters a healthy attitude toward honest labor.
- *Community participation:* To develop a sense of belonging and ensure active participation in family and community affairs.
- *Cultural heritage:* To instill appreciation and promotion of the community’s cultural heritage.

These goals are implicitly achieved in everyday life. For example, physical games and dance developed agility, communal chores and village festivals taught cooperation and cultural values, and learning a trade under a parent imparted vocational competence and work ethics. According to Omolewa (2007), the ultimate aim of traditional

education was to produce “an individual who is honest, respectable, skilled, cooperative, and conforms to the social order of the day”, reflecting Fafunwa’s goals of traditional African education. However, traditional education seeks to train the whole child’s body, mind, and soul in preparation for adulthood.

Processes of Traditional Education

Traditional Nigerian education does not follow fixed classes or timetables. Instead, they operate through multiple overlapping processes that ensure learning at every stage of life. The key processes include the following:

- *Observational and imitative learning:* From infancy, children learn by watching their elders. For example, a child may learn farming practices by following a parent to the field or by observing her mother’s cooking and cleaning.
- *Oral tradition and storytelling:* Elders teach values and history through stories, songs, and proverbs. Moral lessons are woven into folktales, and practical knowledge is embedded in nursery rhymes or cautionary tales. This auditory method is continuous; lessons are imparted during communal gatherings, ceremonies, or even casual conversations.

- *Apprenticeship and hands-on training:* Beginning in early childhood, young people begin to assist adults in economic activities. Boys and girls are assigned tasks and are gradually assigned more responsibility. For instance, a boy helping to tend livestock is formally taught herding and animal care skills by his father. Special trades (weaving, carpentry, blacksmithing, medicine, etc.) are learned directly from master craftsmen or herbalists. Each youth acquires marketable skills through on-the-job training. This system ensures that every individual is economically productive, as no individual is left without a form of vocation that sustains the economy.
- *Rituals and ceremonies:* Cultural rites of passage during puberty, marriage, or other milestones serve educational purposes. For example, during initiation, elders intentionally teach taboos, communal laws, or sacred knowledge relevant to adulthood. Ceremonial gatherings for festivals or age-grade celebrations are also occasions for the intergenerational teaching of history, ethics, and communal responsibilities. In this way, formal lessons are embedded in cultural practices.

Comparison Between Traditional and Modern Education Systems

A side-by-side comparison between Nigeria's traditional and contemporary schooling.

	Traditional Education	Modern Education	Comparison
Orientation and Goals	Traditional education aims to integrate the individual into the community. Its content is broad and interwoven, encompassing morals, vocational skills, and social norms as a unified whole.	In contrast, modern education is often viewed as a way to individual advancement. Schools have fixed subjects and grades; learning is compartmentalized (separate classes for math, language, science, etc.).	The traditional African system was not rigidly compartmentalized, whereas Western schooling generally is. Modern schools emphasize measurable academic achievement and preparing students for jobs in a national or global economy. This leads to specialization and testing, at the expense of community-based objectives.
Teaching Methods	Traditional learning is inductive and participatory. Students learn by doing, observing and listening. For example, an aspiring farmer learns by actually farming with elders. Stories and proverbs are used instead of textbooks. A school building may not even be involved; learning can occur under trees, on family farms or in craft workshops.	Modern education is deductive and standardized: students sit in classrooms, follow a written curriculum, take exams, and receive instruction primarily from trained teachers using books and technology. The learning process is structured by academic year and lesson plans.	Whereas traditional teachers (parents, elders, artisans) were community members chosen for expertise, modern teachers are formally certified and often disconnected from local traditions.
Role of Learner	In traditional settings, learners are often expected to be active participants who eventually contribute (even children do chores). They ask few questions and accept knowledge as handed down.	In modern schools, students are encouraged to question and participate in discussions, though the system remains teacher-centered at times.	Both systems recognize respect for authority, but modern pedagogy at least nominally values curiosity and critical thinking (though resource constraints can limit this).
Content and Scope	The indigenous system's content is local: farming techniques, tribal history, indigenous religion, local ecology. It is essentially region-specific.	Modern education introduces national language (English), global history, and scientific theories.	Traditional education had little about global affairs or science, which modern schools provide. Conversely, modern schools usually ignore local crafts and community rites, which traditional schools teach by necessity.
Assessment and Progress	Progress in the traditional system is measured informally by competency. A child "graduates" from an age-grade by demonstrating skills (e.g., a boy must hunt successfully). There are no exams.	Modern education uses graded tests and certificates to mark progression. Success is based on passing standardized exams (e.g., WASSCE). This makes modern education more uniform but can also exclude students who do not fit the testing mold.	

Relevance of Traditional Education in Contemporary Nigeria

In today's Nigeria, revisiting traditional education is not about rejecting modernization but about enriching the modern system with indigenous strengths. Several contemporary needs highlight its relevance.

➤ **Preserving cultural identity:** With more than 500 ethnic groups, Nigeria's cultural diversity is immense. If schools ignore the local culture, children will lose touch with their roots. Olagbaju (2020) warns that the globalization of language and culture is "denying the Nigerian child access to his indigenous system of education," which risks the survival of local traditions. Embedding traditional content in schools (e.g., teaching folk tales, local history, and songs) can counteract this erosion. Parents and educators are increasingly concerned that youths lack knowledge of their heritage; reviving traditional elements can instill pride and continuity.

➤ **Community and life skills:** Traditional education imparted not only academic skills but also "vital life skills" such as cooperation, respect, resourcefulness, and adaptability. In contemporary Nigeria, these skills are crucial. For instance,

environmental stewardship is a modern concern; indigenous knowledge about local ecology (plants, soils, and weather patterns) can contribute to sustainable agriculture. Similarly, communal values, such as ubuntu (the idea that one's humanity is tied to others) can help address social fragmentation. UNESCO's Peter Okebukola notes that using culture in education "equips students with skills that are invaluable in the workforce and enhances cross-cultural communication. In a global economy, the sense of respect and teamwork learned from traditional education is a competitive advantage.

➤ **Addressing youth unemployment and skills gap:** One reason for the call to revive traditional education is practical: Nigeria suffers from high youth unemployment and a mismatch of skills. The focus of traditional schooling on vocational training can be helpful. By integrating apprenticeship models and technical crafts into modern schooling, graduates can leave with tangible skills. For example, merging traditional farming techniques and indigenous knowledge of crops with agricultural education can improve food production. The current National Policy on Education (2013) acknowledges this need: it

mandates that early schooling be conducted in the native language to make learning more meaningful. This policy reflects traditional pedagogy: teaching children first in their home language, showing an official recognition of indigenous principles.

- **Social inclusion and equity:** Traditional education is inclusive in nature, engaging in all ages and backgrounds. Modern schools can learn from this and become more accessible. In particular, reaching nomadic, rural, or marginalized communities has been a challenge for formal education (Fulani pastoralists often do not benefit from stationary schools). Adapting schooling to respect local lifestyles, for example, having mobile schools or flexible calendars that align with herding seasons, echoes the traditional accommodation of learners' circumstances. Such reforms could improve attendance and retention.
- **Intercultural understanding:** Teaching traditional culture in schools not only strengthens identity, but can also promote unity across ethnic lines. If every Nigerian child learns about the values and practices of other tribes alongside their own, empathy is built. This is important for a multiethnic nation. Emphasizing a shared African

educational heritage (as opposed to a purely Western model) can foster a more inclusive national culture.

Reviving and Reforming Traditional Education

To reap the benefits of Nigeria's indigenous education system, deliberate reforms are needed to revive useful traditional practices while adapting them for the 21st century, including the following:

- **Curriculum integration:** A formal curriculum should incorporate indigenous knowledge and methods. This could mean dedicated subjects or modules to the local culture, ethics, and livelihoods. Schoolchildren might study local history, traditional music, or folk literature as part of social studies or arts. Ibe-Moses and Okafor (2021) suggested re-evaluating practices such as communal learning, folktales, and group activities alongside modern subjects. Incorporating storytelling and local proverbs into language lessons would make education more culturally relevant. Importantly, teacher training programs can prepare educators to use these tools; teachers should learn to value and teach indigenous content.
- **Mother-tongue and bilingual education:** Consistent with national policy, early grade instruction should be in students' home languages, gradually transitioning to English.

Research has shown that children learn best in their first language. This practice, rooted in traditional learning (which naturally uses community language), can improve literacy and comprehension. After primary school, schools can continue offering courses in local languages (literature, oral history, etc.) to reinforce their cultural identity. Such language policy reforms would make education more inclusive of rural and minority communities.

- **Skill-based and vocational programs:** Schools should re-emphasize practical skill training. Technical and vocational education (TVET) can be expanded to teach agriculture, crafts, and trade that mirror traditional vocations. For instance, secondary schools may have workshops for local crafts (weaving, pottery, and carpentry) or school farms managed by students. As Ibe-Moses and Okafor conclude, education should be developed along Nigerians' "vocational and cultural lives." Furthermore, linking students with local artisans and farmers through apprenticeship schemes can formalize what used to happen in villages. For many youths not seeking white-collar jobs, this approach promises job readiness and entrepreneurship.
- **Community and family involvement:** Traditional education thrived because learning took place in

extended families and communities. Schools can revive this by involving parents and the elderly as instructors. Community elders, artisans, and leaders can be invited to schools to demonstrate their skills or give talk. In remote areas, schools might be organized on communal lines (as are traditional age-grade associations), promoting peer teaching and mentorship. School calendars can be made flexible to allow students to help farms when needed. Additionally, validating indigenous achievements (giving credit for skills learned at home) would honor community learning. Such reforms echo the recommendation from Nigeria's educational history to include animal husbandry and local labor practices in the curriculum.

- **Use of technology and documentation:** Modern tools can preserve and propagate traditional knowledge. Projects to record oral histories, proverbs, and songs via video or audio archives would prevent heritage loss. Schools can use digital platforms to connect rural knowledge holders to urban students. Mobile apps and educational radio programs (broadcast in local languages) can teach rural children science and math through culturally relevant stories. While not a traditional method per se, these approaches adapt indigenous content to modern media, aligning with suggestions that technologies

can bridge the gap in teaching heritage knowledge.

- **Policy support and funding:** The government and NGOs should support these changes. Curriculum development bodies (such as the Nigerian Educational Research and Development Council) can officially embed cultural content in national curricula. Education policies could provide grants for schools that implement indigenous programs or create incentives for universities to train teachers in traditional pedagogy. Public awareness campaigns (through media and teacher workshops) can promote respect for indigenous learning among parents and teachers. UNESCO's call for "education through culture" should be operationalized in policy and practice, ensuring that cultural education is not just an idea, but a funded priority.

Conclusion

Nigeria's traditional education system, long viewed as superseded by Western education, contains valuable lessons that remain relevant. It focuses on character, community, and practical skills, and produces generations of Nigerians grounded in their culture and capable of vocation. Although it lacked formal literacy and tended toward conservatism, the core ideals of traditional education (such as respect for elders, communal responsibility, and work-based

learning) continue to offer solutions to modern challenges such as unemployment, cultural erosion, and social disunity. However, contemporary policymakers and educators should do well to revisit this heritage to preserve its strengths and reform its weaknesses through its integration with formal education. A reformed education system that respects Nigeria's traditions will be more inclusive, practical, and adaptive, better serving the nation's developmental goals while honoring the wisdom of its ancestors.

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FAMILY BACKGROUND AND STUDENT-RELATED FACTORS AS PREDICTORS OF ACADEMIC ACHIEVEMENT IN CHEMISTRY AMONG SECONDARY SCHOOL STUDENTS IN ZARIA METROPOLIS, NIGERIA

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Abstract:

Academic achievement in chemistry remains a persistent concern among secondary school students in Nigeria, particularly within urban-rural transitional settings like Zaria Metropolis. This study examined the predictive influence of family background and student-related factors on senior secondary school students' academic achievement in chemistry. Investigation employed a descriptive survey design. The population comprised SSII Chemistry students in public secondary schools in Zaria Metropolis, from which a sample of 100 students was selected using purposive sampling techniques. Data were collected using three structured instruments: Family Background Questionnaire (FBQ), Student Factors Questionnaire (SFQ), and Chemistry Achievement Test (CAT). These instruments were validated by experts and yielded acceptable reliability indices via Cronbach's alpha. Data were analyzed using descriptive statistics and Pearson product-moment correlation at a 0.05 significance level. Findings revealed significant positive relationships between family background and academic achievement ($r = 0.80, p < .05$) and between student-related factors and academic achievement ($r = 0.91, p < .05$). Student-related factors emerged as the strongest predictors of success. The study concludes that while family background provides a crucial foundation, students' internal attributes exert a greater influence. It is recommended that school-based interventions targeting motivation and study habits be prioritized alongside parental support initiatives.

Introduction

Chemistry is a core scientific discipline that serves as a backbone for technological innovation, industrial growth, and scientific understanding globally (Omwirhiren, 2015; Omwirhiren & Ibrahim, 2016). As a "central science," it bridges the physical sciences with life sciences and applied disciplines, providing the conceptual framework necessary to

understand the material world at a molecular level. In the Nigerian secondary school curriculum, chemistry occupies a pivotal position, acting as a mandatory prerequisite for students aspiring toward professional excellence in medicine, engineering, pharmacy, biochemistry, and other science-based vocations. The subject is designed not only to impart theoretical knowledge but also to foster analytical

thinking, problem-solving skills, and a practical appreciation for the chemical processes that govern industrial production and environmental sustainability (Blackie,2022; Waseem & Tanweer, 2025).

Notwithstanding its strategic significance, students' performance in chemistry has continued to be unsatisfactory in many regions of Nigeria, including the Zaria Metropolis. This trend is particularly concerning given that Zaria is a historical and contemporary centre of academic excellence in Northern Nigeria. The persistent decline in high-stakes examination results, such as the West African Senior School Certificate Examination (WASSCE) and the National Examinations Council (NECO), suggests a systemic challenge in the mastery of chemical concepts. When students fail to attain credit-level passes in chemistry, it creates a "bottleneck" effect, preventing many bright minds from entering STEM (Science, Technology, Engineering, and Mathematics) fields, which are crucial for the nation's socio-economic development.

Academic achievement in chemistry describes the degree to which students acquire, retain, and apply chemical knowledge, as reflected in their standardized examinations, continuous assessments, and practical laboratory work (Ogbeba & Ajayi, 2016; Alabi, 2018). It is a multifaceted construct that involves the transition from concrete observations to abstract symbolic representations, such as

chemical equations and molecular structures. Previous studies have traditionally linked low achievement in chemistry to school-based factors. These include ineffective or purely didactic teaching strategies, inadequate instructional facilities like poorly equipped laboratories, persistent misconceptions regarding abstract topics like stoichiometry or thermodynamics, and unfavorable student attitudes toward the subject's perceived difficulty (Tumay, 2016; Omwirhiren & Ismail, 2022). However, while school-based interventions are necessary, recent evidence suggests that influences beyond the school gate—specifically the intersection of family background and student-related characteristics—play critical roles in shaping long-term learning outcomes.

Family background serves as the primary incubator for academic success. It encompasses diverse elements such as parental level of education, socio-economic status (SES), family composition, and the overall quality of the home-learning environment, all of which contribute to students' intellectual, emotional, and academic growth (Adeyemo, 2019; Rahali & Hamriche, 2023). Learners from supportive and financially stable homes often have greater access to "educational capital." This includes physical resources like home libraries, personal computers, extramural lessons and relevant chemistry textbooks,

as well as "hidden" advantages like academic supervision and high-quality nutritional support. Parents with higher educational attainment are often better positioned to act as mentors, demystifying complex scientific concepts and fostering a culture of inquiry (Tsou, 2020; Ohenyeh, 2022). Conversely, students from low-SES backgrounds may face "double jeopardy," where a lack of resources at home is compounded by the pressures of financial instability, which can detract from the cognitive energy required for rigorous science subjects (Di & Wu, 2020)

In addition to these environmental influences, student-related factors such as motivation, study habits, self-efficacy, and interest in chemistry are crucial determinants of academic success. While family background provides the stage, the student is the lead actor. Academic self-efficacy—the belief in one's ability to successfully perform specific academic tasks—is a particularly potent predictor of success in chemistry. Evidence shows that students who exhibit positive learning dispositions, strong intrinsic motivation, and disciplined study habits often achieve higher academic outcomes regardless of their socio-economic starting point (Ogunleye, 2020; Nwosu, 2020). For these students, chemistry is not merely a subject to be memorized but a puzzle to be solved. Their interest drives them to engage in deep-level processing, leading to a more

robust understanding of chemical principles.

Although numerous studies have examined the determinants of academic achievement in science within the broader Nigerian context, there is a paucity of localized empirical research that simultaneously examines the predictive influence of family background and student-related factors on chemistry achievement specifically within the Zaria Metropolis. Zaria presents a unique demographic mix of high-level academic professionals and low-income artisanal families, creating a diverse socio-economic landscape that warrants specific investigation. Many existing studies focus on one variable in isolation, failing to account for the symbiotic relationship between the home environment and the learner's internal psychology.

Therefore, this study aimed to address this gap by investigating the combined effects of these variables on students' academic achievement in chemistry, providing a more holistic view of the factors that drive academic excellence in this critical discipline.

Purpose of the Study

The main purpose of this study was to examine family background and student-related factors as predictors of academic achievement in chemistry among secondary school students in Zaria.

Specifically, the study sought to:

- determine the relationship between family background and academic achievement in Chemistry;
- examine the relationship between student-related factors and academic achievement in Chemistry;
- identify family background and student-related factors as the strongest predictors of academic achievement in chemistry.

Research Questions

Three research questions were posed for the study

- How does family background influence students' academic achievement in Chemistry?
- What relationship exists between student-related factors and academic achievement in Chemistry?
- Which of the variables (family background or student-related factors) was the strongest predictor of academic achievement in chemistry?

Research Hypotheses

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

- There is no significant relationship between family background and academic achievement in Chemistry.
- There is no significant relationship between student-related factors and academic achievement in Chemistry.
- Family background and student-related factors do not significantly predict academic achievement in Chemistry.

Methodology

Research Design

A descriptive survey research design was adopted to examine the existing relationships among variables without manipulation.

Population and Sample

The population comprised SSII Chemistry students in 19 public secondary schools in Zaria Metropolis, Kaduna State. A total of 100 students were selected using purposive sampling to ensure the representation of both male and female students from single-sex and co-educational schools.

Instruments for Data Collection

Three instruments were used: the Family Background Questionnaire (FBQ), Student Factors Questionnaire (SFQ) (both rated on a 5-point Likert scale), and Chemistry Achievement Test (CAT), consisting of 20 multiple-choice items (40 marks).

Validity and Reliability

The instruments were validated by experts in Chemistry Education and Measurement and Evaluation. The reliability coefficients obtained using Cronbach's alpha indicated satisfactory internal consistency.

Data Analysis

Descriptive statistics (mean and standard deviation) were used to answer the research questions, while Pearson Product-Moment Correlation (PPMC) was used to test the hypotheses at $p \leq .05$, using SPSS version 23.

Result

The table below summarizes the relationship between the independent

variables (family background and student-related factors) and the dependent variable (academic achievement in chemistry).

Table 1: Pearson Correlation between Family Background, Student -Related Factors, and Academic Achievement in Chemistry

Variables	N	Mean	Std Dev	r-value	Sig.(p)
Family background	100	3.12	1.21	0.80	0.000
Student-related factors	100	3.24	1.80	0.91*	0.000
Academic Achievement	100	17.66	7.12	—	

The results presented in Table 1 indicate a strong positive and statistically significant relationship between family background and academic achievement in chemistry ($r(98) = .80, p < .001$). This result led to the rejection of the first null hypothesis, confirming that family background significantly influences chemistry achievement among secondary school students in Zaria.

Similarly, a very strong positive and significant relationship was observed between student-related factors and academic achievement in chemistry ($r(98) = .91, p < .001$). Consequently, the second null hypothesis was rejected, indicating that student-related factors are significant predictors of academic achievement.

A comparison of the correlation coefficients shows that student-related factors exert a stronger influence on academic achievement than family background does, suggesting that students' internal attributes play a more dominant role in determining chemistry performance.

Discussion

The results of this study provide compelling empirical evidence that both family background and student-related factors play significant roles in influencing academic achievement in chemistry among secondary school students in Zaria. By exploring these dual perspectives, the study offers a nuanced understanding of the forces that drive or hinder scientific literacy in a unique educational landscape like Zaria Metropolis.

The strong positive correlation between family background and academic achievement ($r=0.80$) emphasizes the importance of the home environment in shaping students' learning outcomes. This statistical relationship suggests that the home acts as the primary socialization agent, providing the foundational scaffolding upon which formal school instruction is built. Students from supportive family backgrounds—characterized by parental

education, stable socio-economic status, and consistent academic encouragement—tend to achieve higher performance in chemistry.

In Zaria Metropolis, this finding takes on a specific localized context. Zaria is a renowned hub of academic excellence, housing several tertiary and research institutions. Consequently, students whose parents are part of this academic workforce enjoy clear advantages. These parents are more likely to provide high-quality learning resources, such as home libraries, extramural lessons, reliable internet access, and specialized chemistry textbooks. Beyond physical resources, educated parents are often better equipped to assist with complex homework or to explain abstract chemical concepts, thereby bridging the gap between classroom theory and practical understanding. This outcome is consistent with earlier studies by Okeke (2017), Umeh and Abubakar (2019), and Ohenyehu (2022), all of which reported that parental education and socio-economic status significantly enhanced students' achievement in science-related subjects.

Furthermore, Onikoyi (2024) emphasizes that the home environment extends beyond financial capacity to include the quality of “academic socialization” provided by parents. When families place a high value on science education, students are more likely to

internalize these values, viewing chemistry not just as a school requirement but as a pathway to prestigious professional careers in medicine, engineering, or pharmacy. Although the moderate mean score (3.12) suggests that many students in public schools still experience limited home support, the strong correlation indicates that even modest increases in parental involvement—such as monitoring study schedules or encouraging curiosity—can lead to substantial improvements in chemistry performance.

This finding supports Maslow's Hierarchy of Needs (1943), which argues that basic needs such as emotional stability and financial security must be satisfied before learners can effectively engage in higher-order cognitive tasks. In the context of this study, adequate home support satisfies these “deficiency needs,” enhancing students' ability to focus, persevere, and succeed in cognitively demanding subjects like chemistry, which requires intense mental concentration.

While family background is influential, the study revealed an even stronger relationship between student-related factors and academic achievement ($r=0.91$). This suggests that variables such as intrinsic motivation, study habits, self-efficacy, and interest in chemistry have a dominant, almost decisive influence on students' academic success. This finding aligns with those of Ogunleye (2020), Nwosu (2020), and Nwosu and Okeke

(2020), who noted that internal learner characteristics often have a greater impact on achievement than external factors.

Practically, this implies that a student's personal agency—defined by their curiosity about chemical reactions, willingness to solve complex stoichiometric problems, and effective time management—can outweigh other contextual or environmental influences. In the specific context of Zaria's public secondary schools, where laboratory facilities may be inadequate or overcrowded, the "human element" becomes the equalizer. Students who demonstrate resilience and a proactive approach to learning—perhaps by seeking out supplementary materials or forming peer study groups—are more likely to excel regardless of the school's resource constraints.

This result is consistent with Nwosu's (2020) Path Analysis, which identified chemistry self-efficacy as a crucial link between the learning environment and performance. When a student believes they can master the Periodic Table or understand organic reaction mechanisms, their persistence increases. This indicates that while an unfavorable home background may pose significant challenges, it does not necessarily prevent academic success when students develop strong personal learning strategies.

Furthermore, the findings align with Bandura's Social Learning Theory

(1977), particularly the concept of "Self-Efficacy." Bandura posits that individuals who believe they can perform a task are more likely to put in the effort required to succeed. In chemistry, where students often face "chemistry anxiety" due to the abstract nature of atoms and molecules, high self-efficacy acts as a psychological buffer. Students who adopt productive study behaviors, such as consistent practice and active recall, are more likely to persist through difficult topics and attain higher achievement levels.

A comparison of the correlation coefficients (0.91 vs. 0.80) further shows that student-related factors are stronger predictors of academic achievement than family background factors. Although family background provides the foundational conditions and the "tools" for learning, the student's internal attributes ultimately determine how effectively they exploit those opportunities. This is a powerful finding for educational equity in Zaria Metropolis; it suggests that students can overcome socio-economic disadvantages through psychological motivation and self-discipline. The implications for the Zaria educational community are profound: one, given that Chemistry demands high levels of abstract reasoning and sustained practice—qualities that are largely student-centred—teachers should shift some focus from students' home limitations toward fostering scientific interest and self-efficacy within the

classroom. Secondly, programmes aimed at improving study skills, time management, and "growth mindset" coaching may yield higher returns on academic performance than material resource provision alone, and third, while financial support by parents is vital, providing an environment that fosters interest and psychological resilience is equally, if not more, important.

Ultimately, the strong correlation ($r=0.91$) reinforces the idea that while the family may provide the stage and the props, the student remains the central agent and the lead actor in the process of learning chemistry to actualize desirable outcome.

Conclusion

The findings revealed that both variables significantly influenced academic achievement. The student-related factors emerged as the strongest predictors. Therefore, the study concludes that while family support remains essential, students' motivation, self-efficacy, and study habits play a more decisive role in achieving success in chemistry.

Recommendations

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

1. Teachers should adopt learner-centred instructional strategies that promote

motivation, active participation, and positive attitudes toward Chemistry.

2. Parents and guardians should provide supportive home environments by monitoring the academic progress of their wards and encouraging positive study habits.
3. Academic support programs, such as study-skills workshops and mentoring schemes, should be organized by the school administration to strengthen students' self-efficacy and learning behaviours.
4. Policy makers should design interventions that target both home-based and school-based factors influencing Chemistry achievement.
5. Future researchers should employ multiple regression or structural equation modelling to further explore the combined predictive power of family- and student-related variables on diversified groups of respondents to compare findings.

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APPROACHES AND SUPPORT SYSTEMS FOR TEACHING MORALITY: INSIGHTS FROM ISLAMIC AND CONVENTIONAL SCHOOLS

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Abstract:

Schools are expected not only to transmit academic knowledge but also to cultivate students' moral character, making teachers' roles in moral education particularly significant. This study examines teachers' perceptions and practices regarding moral instruction in Islamic secondary schools under the Arabic and Islamic Education Board (AIEB) and conventional secondary schools under the Ministry of Education (MOE). Data were collected through questionnaires administered to teachers at 18 selected schools. The findings revealed a similar pattern of moral development approaches among students in both Islamic and conventional schools. In both types of schools, the overwhelming majority of teachers regard the teaching of morality as a core professional responsibility and report frequent attempts to integrate moral values into their teaching. Nevertheless, many respondents were unable to clearly articulate specific strategies used for moral integration, suggesting a gap between intention and practice. Moral counselling emerged as the most commonly employed strategy, whereas systematic integration of moral education into regular subject teaching was the least reported. Teachers also expressed near-unanimous agreement that school managements are committed to students' moral development. Formal moral instruction was primarily delivered through Religious Studies, Social Studies, and Civic Education, while co-curricular activities, such as drama and quizzes, served as supplementary avenues for reinforcement. This study recommends strengthening teachers' pedagogical skills in moral education, promoting clearer instructional strategies across subjects, and enhancing co-curricular programs to ensure that moral values are effectively translated into students' everyday behaviour.

Introduction

Teachers play a profound role in shaping children's moral development, often equal to that of parents, as teachers become role models once the child enters school. Al-Ghazali emphasized that schools are critical in forming moral and social behavior, but only when educators embody compassion, follow the Prophet's example, gently correct negative behaviors and guide with mercy rather

than harshness. He further advised teachers to align lessons with learners' capacity, progress gradually, and maintain harmony between their words and actions (Al-Ghazali, 1402). Likewise, al-Nahlāwī viewed educators as heirs of the Prophets (AS), entrusted with continuing their mission through qualities such as piety (*Rabbāniyyah*), sincerity (*Ikhlas*), patience (*Ṣabr*), and truthfulness (*Ṣidq*) (Al-Nahlawi, 1428).

Modern scholarship echoes these classical insights, recognizing schools as essential environments for nurturing moral values alongside academic knowledge. Recent research stresses that effective moral education requires both structured curricula and practical opportunities for students to embody virtues (Gökçeli, 2025). While subjects such as civic education and religious studies often serve as formal avenues for teaching morality, extracurricular activities, including mentoring, drama, and community services, provide more experiential forms of moral learning.

Nonetheless, scholars such as Cam (2014) and Biesta (2009, 2010, 2015) have identified a persistent gap between academic instruction and moral education. While some institutions rely predominantly on theoretical or subject-based teaching with limited opportunities for lived moral experiences (Arthur, 2015), others emphasize that true moral formation occurs when teachers consciously model the virtues they seek to cultivate in their students, an approach consistent with the timeless educational principles upheld by Islamic scholars (Ibn Jamā'ah, 1354).

Despite the importance of morality in education, there is a limited research base on how different school systems, particularly Islamic secondary schools and conventional schools, structure their approaches to moral development. This lack of comparative insight limits the

understanding of the strengths, challenges, and opportunities of each system. This study investigates the moral approaches and support systems employed by Islamic secondary schools under the Arabic and Islamic Education Board (AIEB) and conventional secondary schools under the Ministry of Education (MOE). It explores the curricular, co-curricular, and methodological strategies used by teachers to foster morality, with a view to identifying areas for the enhancement and greater integration of moral education in both systems.

Methodology

Population

The population of this study consisted of teachers from Islamic and conventional schools in Sokoto, Kebbi, and Zamfara States. In this research, Islamic schools refer to integrated Islamic schools under the jurisdiction of the Arabic and Islamic Education Board (AIEB). On the other hand, conventional schools refer to the public schools under the Ministry of Education. These two institutions are central to understanding how morality is taught in Nigerian schools, as they constitute the primary channels of formal education for young people in the study area. The Ministry of Education (MOE) oversees conventional secondary schools, while the Arabic and Islamic Education Board (AIEB) regulates Arabic and Islamic secondary schools.

Sample

Eighteen secondary schools were randomly selected, comprising nine Islamic schools and nine conventional schools. The schools were drawn from three states in Northwestern Nigeria—Sokoto, Kebbi, and Zamfara—with each state contributing six schools (three Islamic and three conventional). The questionnaire administered to teachers examined the schools' moral support structures and the strategies employed by teachers to fulfill

their responsibilities towards students' moral development. To ensure confidentiality, both the schools and participating teachers were anonymized.

Results and Discussion

Table 1 presents the key characteristics of the biodata of the participants. The table highlights demographic details, such as age, gender, educational qualifications, and teaching experience.

Table 1: Characteristics of the Biodata of the Muslim Teachers Participants

Variables	Total N=190 (100%)	Males Total N=127 (67%)	Females Total N=63 (33%)
Age (Years)			
Less than 30	35 (18.4%)	22 (11.6%)	13 (6.8%)
30-39	88 (46.3%)	54 (28.4%)	34 (17.9%)
40-49	53 (27.9%)	38 (20.0%)	15 (7.9%)
50- Above	12 (6.3%)	11 (5.8%)	1 (0.5%)
Unspecified	2 (1.1%)	2 (1.1%)	0 (0%)
Highest Qualification			
NCE	54(28.4%)	33 (17.4%)	21 (11.1%)
Diploma	11 (5.8%)	9 (4.7%)	2 (1.1%)
Bachelor	101 (53.1%)	67 (35.3%)	34 (17.9%)
Master	14 (7.4%)	12 (6.3%)	2 (1.1%)
Ph.D.	1 (0.5)	1 (0.5%)	0 (0.0%)
H.N.D.	3 (1.6%)	1 (0.5%)	2 (1.1%)
Kulliyah	1 (0.5%)	1 (0.5%)	0 (0.0%)
Unspecified	5 (2.6%)	3 (1.6%)	2 (1.1%)
Type of School			
Islamic	93 (49%)	70 (36.9%)	23 (12.1%)
Conventional	97 (51.0%)	57 (30.0%)	40 (21.0%)
Teaching Experience (years)			
0-2	29 (15.2%)	24 (12.6%)	5 (2.6%)
3-5	41 (21.6%)	26 (13.7%)	15 (7.9%)
6-8	25 (13.2%)	11 (5.8%)	14 (7.4%)
9-11	29 (15.3%)	18 (9.5%)	11 (5.8%)
12-Above	64 (33.6%)	46 (24.2%)	18 (9.5%)
Unspecified	2 (1.1%)	2 (1.1%)	0 (0%)

Source: Data collected by the researcher from May to July 2021.

These results revealed that the majority of the participants were male (67%) and predominantly aged between 30 and 49 years (75%). There was almost a similar proportion of participants from conventional schools (51%) and Islamic schools (49%). In terms of education, the majority held either a bachelor's degree (53%) or an NCE qualification (28%). Most respondents had significant teaching experience, with 49% having 9 or more years in the field.

Teachers' Attitude and Approaches towards the Moral Development of Students

Teachers' perspectives on their responsibility for moral education, together with the frequency and methods through which they incorporate moral values into their teaching, are summarized in Tables 2, 3, and 4.

Table 2: Moral Instruction is a Primary Responsibility of Teachers

Response	Islamic	Conventional	Total
Yes	85 (45%)	89 (47%)	174 (92%)
No	0 (0%)	2 (1%)	2 (1%)
No Response	8 (4%)	6 (3%)	14 (7%)
Total	93 (49%)	97 (51%)	190 (100%)

Source: Data collected by the researcher from May to July 2021.

The results, as shown in Table 2, indicate a strong consensus among teachers regarding the role of teaching morality, with 92% affirming that it is the primary responsibility of all teachers. This view was predominantly held by respondents from both Islamic (45%) and conventional (47%) schools. Meanwhile,

7% of the respondents did not provide an answer, suggesting that a small portion of teachers may either be uncertain about their stance or choose not to express it. These findings underscore the widespread belief among educators that teaching morality is integral to their professional responsibilities.

Table 3: The Frequency with which the Teachers Integrate Moral Values into Their Teaching

Response	Islamic	Conventional	Total
Very Often	48 (25.3%)	62 (32.6%)	110 (58%)
Often	23 (12.1%)	22 (11.6%)	45 (24%)
Sometimes	10 (5.3%)	3 (1.6%)	13 (7%)
Seldom	0 (0%)	1 (0.5%)	1 (0.5%)
Never	0 (0%)	1 (0.5%)	1 (0.5%)
No Response	12 (6%)	8 (4%)	20 (10%)
Total	93 (49%)	97 (51%)	190 (100%)

Source: Data collected by the researcher from May to July 2021.

Based on the results in Table 3, the majority of respondents (82%) affirmed that they frequently or regularly incorporated moral values into their instructional practices. In comparison, only 1% of respondents from conventional schools reported that they

either infrequently or never included moral values in their teaching approaches. Meanwhile, 10% of the respondents did not answer, suggesting a need for improved engagement or clarity regarding the importance of moral integration in education.

Table 4: The Strategies Used by the Teachers to Incorporate Moral Values in Their Teaching

Response	Islamic	Conventional	Total
By advising students to abide by good behavior	17 (8.9%)	20 (10.5%)	37 (19.5%)
By advice and personal example	3 (1.6%)	2 (1.1%)	5 (2.6%)
By advice and punishment	3 (1.6%)	2 (1.1%)	5 (2.6%)
Exhortation to good behavior by citing Islamic teachings	5 (2.6%)	8 (4.2%)	13 (6.8%)
Dedicating time to exhortation before/after each period	6 (3.2%)	1 (0.5%)	7 (3.7%)
By personal example	13 (6.8%)	14 (7.4%)	27 (14.2%)
Being friendly with students	5 (2.6%)	2 (1.1%)	7 (3.7%)
Twisting it with/Explaining the moral values of the subject	2 (1.1%)	1 (0.5%)	3 (1.6%)
Rewards and punishments.	2 (1.1%)	5 (2.6%)	7 (3.7%)
Vague/Irrelevant	22 (11.6%)	27 (14.2%)	49 (25.8%)
No Response	15 (7.9%)	15 (7.9%)	30 (15.8%)
Total	93 (49%)	97 (51%)	190 (100%)

Source: Data collected by the researcher from May to July 2021.

Although Table 3 shows that 82% of respondents reported consistently incorporating moral values into their teaching, only 58% offered details on the specific strategies they use for this purpose. Approximately 42% of the respondents either circumvented the question or offered responses that were ambiguous or unrelated. For instance, Participant no.4 from AIEB School no.4 simply stated that

the strategy he is using is ‘following all the methodologies of teaching’ (field questionnaire data, 2021).

Among the responses considered relevant (58% of the total), the study revealed that the most frequently used approach to foster students’ moral development was moral counselling. Teachers commonly described engaging in this practice by advising students to behave

well, encouraging them towards good conduct, and dedicating time before or after lessons for moral talk. Notably, 35% of the respondents (18% from Islamic schools and 17% from conventional schools) identified moral counselling as either their primary method or an integral part of their overall strategy for promoting students' moral values. However, a significant proportion (19%) did not specify when or how this strategy was applied. This suggests that while a significant proportion of teachers (35%) employ moral counselling strategies, the majority do so through informal or advisory means, with fewer engaging in structured or religious methods. This highlights the importance of supporting and training teachers to expand and formalize their approaches to moral education.

This result coincides with the findings of Gui et al. (2020), who reported moral mentorship as one of the most frequent roles played by teachers in developing morality among students. Rukaya and Alam (2024) demonstrated a significant positive link between guidance and counselling programs and the moral conduct of students, underscoring the role of counselling as a key mechanism for promoting ethical values.

The second most prominent strategy mentioned by teachers is to teach morality through personal examples, wherein they serve as moral models or exemplars. Fourteen per cent of the respondents reported this method as the only strategy they used to teach morality to students, while 2.6% of the respondents employed it together with moral counselling. The number of teachers (18%) who acknowledge this method as a strategy for students' moral development is not encouraging if the importance of this

method is taken into consideration. Nucci and Narvaez (2008a) emphasized that the personal example set by teachers is critical, as students often learn moral values through observation and imitation of respected adults. However, this result is not surprising, considering the reports of indiscipline acts documented among teachers in Nigerian schools (Atanda & Wambugu, 2022; Sulyman, 2020).

Apart from the above two strategies, there were other strategies reported, including being friendly with students (3.7%), using reward and punishment (3.7%), and integrating moral values into subject content (1.6%), the least frequently cited approach. This finding aligns with Cam's observation that school education often separates academic learning, such as science, history, or mathematics, from moral and intellectual growth, a separation that ultimately reduces education's overall effectiveness in cultivating both knowledge and character (Cam, 2014). Research shows that sustained curriculum-embedded approaches, coupled with teacher professional development and whole-school commitment, produce more reliable improvements in students' behavior than isolated interventions (Arthur et al., 2022; Gökçeli, 2025).

Teachers' Perceptions of Management's Commitment to Students' Moral Development

Tables 5 and 6 show teachers' perceptions of administrative commitment and the presence of specific subject(s) for students' moral growth, while Table 7 outlines extracurricular programs organized by the school, parents, or the community that support character development.

Table 5: Commitment of the Management of Schools to the Moral Development of Students

Response	Islamic School	Conventional School	Total
Highly Committed	50 (26%)	61 (32%)	111 (58%)
Committed	29 (15%)	20 (11%)	49 (26%)
Slightly Committed	4 (2%)	6 (3%)	10 (5%)
Not Committed at all	1 (0.5%)	2 (1%)	3 (2%)
No Response	9 (4%)	8 (4%)	17 (9%)
Total	93 (49%)	97 (51%)	190 (100%)

Source: Data collected by the researcher from May to July 2021.

From Table 5, it is clear that the majority (84%) of respondents were of the view that their school was either highly committed (58%) or at least committed (26%) towards the moral development of the students. Only 7% of respondents reported that their schools

made little or no effort toward students' moral development.

Subsequently, teachers were asked whether their schools offered any subject specifically devoted to students' moral development; their responses are presented in the following table.

Table 6: Presence of Morality-Focused Subjects in the Schools

Response	Islamic School	Conventional School	Total
Yes	81 (42.6%)	83 (43.7%)	164 (86%)
No	5 (2.6%)	8 (4.2%)	13 (7%)
No Response	7 (3.7%)	6 (3.2%)	13 (7%)
Total	93 (49%)	97(51%)	190 (100%)

Source: Data collected by the researcher from May to July 2021.

From the analysis of individual responses, 66% of the respondents identified Islamic/Religious Studies (28%), Civic Education (17%), or a combination of both (21%) as the primary subjects for moral education. Meanwhile, 17% cited unrelated subjects, such as

Mathematics and Computer Science, which diverge from dedicated moral education. This suggests that no extracurricular subjects specifically designed for moral instruction were reported in any of the selected schools.

Table 7: Extracurricular Activities that Support the Character Goals of the Schools

Response	Islamic	Conventional	Total
Weekly Preaching (during Assembly)	5 (3%)	2 (1%)	7 (4%)
Games/Sports/Drama/Quiz/clubs, etc.	27 (14%)	32 (17%)	59 (31%)
MSS ¹	4 (5%)	5 (3%)	9 (5%)
MSS and <i>Musabaqa</i> / Islamiyyah/Moral talk	1 (0.5%)	7 (3.5%)	8 (4%)
MSS and Islamiyyah	1 (0.5%)	0 (0%)	1 (0.5%)
MSS and Club/Debate/Quiz	6 (3%)	12 (6%)	18 (9%)
MSS, PTA meeting	1 (0.5%)	0 (0%)	1 (0.5%)
Musabaqah and Sport/clubs	1 (0.5%)	1 (0.5%)	2 (1%)
Moral Talk	0 (0%)	1(0.5%)	1 (0.5%)
PTA committee, GandC/Quiz/Debate ²	0 (0%)	2 (1%)	2 (1%)
Yes (without mentioning anything)	1 (0.5%)	3 (1.5%)	4 (2%)
Islamiyyah after School Hours	1 (0.5%)	1 (0.5%)	2 (1%)
Guidance and Counselling	2 (1%)	0 (0%)	2 (1%)
Nil/Not functioning/ They have, but I don't know them	21 (11%)	15 (8%)	36 (19%)
Irrelevant	8 (4%)	2 (1%)	10 (5%)
No Response	14 (7.4%)	14 (7.4%)	28 (15%)
Total	93 (49%)	97 (51%)	190 (100%)

Source: Data collected by the researcher from May to July 2021.

As shown in Table 7, respondents identified games, sports, drama, quizzes, and clubs as the main extracurricular activities supporting students' moral development. While such activities have been advocated and proven to help students learn character-building lessons (Nucci & Narvaez, 2008b; Okoro, 2013; Okoro & Samuel, 2016), research, such as a survey by Shields et al. (2005),

highlights numerous ethical problems occurring in many youth sport-related programs. Furthermore, the moral impact of these extracurricular activities is often limited, as participation is voluntary and both schools and students frequently prioritize success in national examinations over engagement in these programs (Mohammed et al., 2017; Okoro & Samuel, 2016).

¹ MSS=Muslim Student Association.

² PTA=Parent Teachers Association, GandC=Guidanc and Counselling.

Nearly one-fifth of the teachers (19%) indicated that their schools lacked functional extracurricular activities for moral development, while about 20% showed uncertainty or limited awareness of their moral purpose. Together, these findings highlight the need for clearer school policies, enhanced teacher awareness, and stronger institutional support to ensure that extracurricular programmes are intentionally structured and effectively utilised for students' moral development.

Conclusion

In conclusion, the findings of this study suggest that both Islamic and conventional schools recognise their responsibility for students' moral development, and most teachers believe their schools are genuinely committed to this task. However, a clear gap remains between this sense of responsibility and how moral values are actually integrated into everyday teaching. While teachers commonly support students through counselling, fewer intentionally embed moral lessons within subject instruction. Schools mainly rely on general extracurricular activities, such as sports, clubs, and religious programmes, to promote moral development, yet none offer programmes specifically designed for this purpose. Overall, the study shows that although both AIEB and MOE schools value moral education, greater attention is needed to strengthen classroom integration, clarify teaching strategies, and develop more structured extracurricular approaches to support students' moral growth.

Recommendations

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

- Teachers should consciously embed moral dimensions within their subject areas rather than treating moral education as a separate activity. Every subject, whether science, history, or language, should be viewed as an avenue for developing both intellectual and moral virtues.
- Professional development programs should train teachers to identify moral values inherent in their subjects and employ pedagogical strategies that promote reflection, dialogue, and ethical judgment in everyday lessons.
- Regularly assessing and reviewing moral education initiatives: Schools should establish mechanisms for the ongoing evaluation and assessment of their moral education programs. Feedback from teachers, students, and parents can inform adjustments and improvements to ensure the effectiveness of these initiatives.

Conflict of Interest Statement

Zuwaira Abubakar and Shehu Abdur-Rahman Aboki declare that there are no conflicts of interest regarding the publication of this paper.

Data Availability Statement

The data supporting the findings of this study are available from the corresponding author upon reasonable request.

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TEACHERS' PERCEPTION OF REGGIO EMILIA'S APPROACH FOR MORAL DEVELOPMENT
AMONG PRESCHOOLERS IN SABON GARI LGA OF KADUNA STATE

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Abstract:

This study investigated teachers' perceptions of the Reggio Emilia approach as a strategy for promoting moral development among preschoolers in the Sabon Gari Local Government Area (LGA) of Kaduna State. Employing a descriptive research design, the study was guided by two research questions concerning the components of the Reggio Emilia approach that support moral development and its perceived impact. Data were collected from a randomly selected sample of 120 public primary school teachers using a validated and reliable questionnaire titled Teachers' Perception of Reggio Emilia's Approach in Promoting Moral Development among Preschoolers (TPREPPMD). Reliability was assessed using Cronbach's Alpha, yielding a coefficient of 0.82, indicating the instrument was reliable. Findings revealed that teachers generally agreed that certain components of the Reggio Emilia approach supported moral development. These included encouraging reflection during group discussions, collaborative projects fostering empathy, and the use of art and storytelling to explore emotions. Findings also reveal that the Reggio Emilia approach effectively promotes empathy among preschoolers through collaborative activities, and the Reggio Emilia approach cultivates and creates ethical awareness among others. The impact of Reggio Emilia's Approach on promoting moral development among Preschoolers in Sabon Gari LGA. It was recommended that adequate teacher training be provided to ensure that educators are well-equipped to implement the Reggio Emilia approach effectively, especially in fostering empathy and specific techniques for active listening and respectful communication.

Introduction

In every society, it is believed that education is the key to national development, and there is a need to maintain every level of education, especially the pre-primary stage, because it is the bedrock upon which all other educational levels are built. Once a child misses this early stage, it is usually difficult for the learner to get back to the basics. The early years of a child's life are foundational for both cognitive and moral

development, setting the stage for future learning and ethical behaviour. In this critical period, preschool education plays a vital role in shaping young minds and instilling fundamental values. That is why the Reggio Emilia approach, an internationally recognised educational philosophy originating in Italy, offers a unique perspective on early childhood education, emphasising child-led inquiry, collaborative projects, and a rich, stimulating environment. This foundation

would not have been possible without teachers. Teachers are key to creating a value-based learning environment that fosters positive relationships with children to produce responsible and effective citizens.

Early childhood education is the starting point for a child's development and the key foundation of the Nigerian educational system. This type of education is recognised by the Nigerian National Policy on Education (Federal Republic of Nigeria, 2013). The National Policy on Education (FRN, 2013) outlines several key objectives for preschool education in Nigeria. These include: Effecting a smooth transition from home to school, preparing children for primary-level education, providing adequate care and supervision for children while their parents are at work, inculcating in children the spirit of inquiry and creativity through exploration of nature, art, music, and play, developing a sense of cooperation and team spirit, inculcating social norms and values, teaching good habits, particularly health-related habits, and introducing rudimentary concepts of numbers, letters, colours, shapes, and forms through play. Among these objectives, the one that emphasises inculcating social norms and values directly addresses moral development. This objective seeks to instil virtues such as honesty, empathy, respect, responsibility, and fairness in young learners. By nurturing these values early in life, preschool education lays the foundation for ethical

behaviour and good citizenship (Salami, 2016). However, studies have shown that despite these goals, Nigeria's educational system has struggled to fully instil moral values due to societal challenges such as corruption, dishonesty, and indiscipline. This is why inculcating morals in children early is important.

Children are like clay that can be moulded, and moral values are the essentials that should be instilled in children. It is the foundation of behaviours that should be instilled in children from a young age. As children grow, the moral values they are instilled with reflect how they behave with others. Moral development in early childhood is extremely important. Moral development refers to the process through which children acquire the ability to discern right from wrong, develop empathy, fairness, and social responsibility, and internalise ethical values that guide their behaviour and interactions with others (TeachKloud, 2024). It is a gradual and complex progression influenced by cognitive, emotional, and social factors, in which young children begin to understand moral concepts such as benevolence, responsibility, and justice, often initially oriented toward family and close relationships before expanding to broader social and environmental concerns (Kaya & Öztürk, 2021). Moral development helps to determine right and wrong. It is a behaviour, a thought, or a feeling to treat others in the right way. The judgment

between one's thoughts and actions can reveal the moral values that a person possesses. Moral development influences how a person behaves and how they interact and make decisions. It is a lifelong process that evolves with age. It can be influenced by numerous factors. These factors include family influence, social interactions, cultural factors, and education. It takes time and effort to implant moral values in children, but it can be fast-tracked by integrating tools, strategies, and support from parents and schools (Kangaroo, 2024). Thus, moral development in preschoolers is foundational for nurturing socially responsible, empathetic, and morally conscious individuals capable of contributing positively to society. These strategies can be more effective if they start in preschool.

Preschool plays a foundational role in the moral development of children by creating an environment in which they learn to distinguish between right and wrong, develop empathy, and internalise values such as respect, fairness, and responsibility. During the preschool years, children transition from egocentric thinking to understanding the perspectives and feelings of others, which is critical for moral development and growth. This process is supported through structured activities, interactions with peers, and guidance from teachers. Moral and values development is primarily concerned with nurturing in pupils a set of beliefs and values about right and wrong, good and

bad, justice and injustice, fairness and unfairness, and other ethical principles teachers play a vital role by modelling moral conduct, facilitating discussions about feelings and consequences, and creating a positive classroom environment that supports social justice and reflective thinking (Seattle PI, 2023). Values are the principles and fundamental convictions that serve as general guides to human behaviour. They enable one to make judgements and decisions on what is important, influence and motivate the actions of the individual, and act as a standard for judging and justifying actions made. As values are acquired through socialisation based on dominant group values and the unique learning experiences of individuals, teachers are models of emulation for the children. Teachers can use several approaches to inculcate moral development, and Reggio Emilia is one such approach.

The Reggio Emilia approach complements these moral development strategies by emphasising collaboration, exploration, and reflection in a child-centred learning environment. It aligns with preschool objectives by fostering empathy, respect, and responsibility through experiential learning. This type of preschool curriculum was developed in post-World War II Italy, where the citizens of Reggio Emilia decided to utilise materials from destroyed buildings to construct a school focused on early childhood education. Loris Malaguzzi, a

local educator, created the Reggio Emilia approach within its walls (Brightwheel, 2024). Malaguzzi founded the Reggio Emilia approach based on his belief that children are capable members of the classroom and should have control over how they learn as they explore, question, and make sense of the world. Instead of the traditional hierarchy present in many classrooms, this co-learning environment establishes a partnership between children, teachers, and families. Children shape their learning experiences with active support and participation from educators and their families.

The Reggio Emilia approach emphasises child-centred learning, encouraging children to explore and discover through hands-on experiences and collaborative projects. It promotes a supportive and enriching environment that fosters creativity, critical thinking, and social skills. The Reggio Emilia approach is guided by several key principles that shape its educational philosophy. The approach also emphasises the importance of relationships between children and adults and among children. By honouring these principles, educators aim to create a learning environment that supports children's innate curiosity, creativity, and love of learning (Garcia, 2023).

The Reggio Emilia approach is a child-centred educational philosophy that fosters moral development in preschoolers through several key components. It emphasises collaborative learning, in which children

work together to develop empathy and respect for others' perspectives. The environment is viewed as a "third teacher," encouraging exploration and responsibility. The approach also incorporates an emergent curriculum, in which projects evolve from children's interests, allowing them to grapple with real-world ethical dilemmas. Documentation and reflection help children evaluate their actions and moral choices. Additionally, the approach values family and community involvement, reinforcing ethical values and collective responsibility. By treating children as capable and resilient, Reggio Emilia encourages autonomy and self-directed learning, which are essential for moral growth. Overall, this approach provides a holistic framework for moral development by integrating social, emotional, and cognitive learning in a supportive and collaborative environment (Garcia, 2023).

The Reggio Emilia Approach indirectly but significantly fosters moral development in preschoolers by prioritising collaboration, communication, and respect for diverse perspectives, which cultivates empathy and social understanding. Child-centred, project-based learning empowers children with agency and responsibility, while the emphasis on relationships and the environment nurtures respect for others and the world around them. Through collaborative projects and opportunities for negotiation, the approach encourages prosocial behaviours and equips children with the skills for constructive conflict

resolution, ultimately contributing to their moral growth (The Education Hub, 2020).

The Reggio Emilia approach to education emphasises the cultivation of several moral values within its pedagogical framework. These moral values provide a foundation for appropriate social skills and behaviour, such as sharing, cooperation, and fairness, which help children understand how to interact with others in a respectful and considerate manner. It promotes positive relationships, conflict resolution, and empathy, fostering a harmonious and inclusive learning environment. These values guide children throughout their educational journey and beyond, influencing their behaviour, choices, and relationships as they grow into adolescence and adulthood. Against this backdrop, this study investigated teachers' perceptions of the Reggio Emilia's approach as a strategy for promoting moral development among preschoolers in Sabon Gari Local Government Area of Kaduna State.

Statement of the Problem

Preschool teachers in Sabon Gari LGA of Kaduna State have been exposed to the Reggio Emilia approach, in which children are seen as active learners who construct knowledge through interactions with their environment and peers. The components include an emergent curriculum, project-based learning, and the environment as a "third teacher." These elements are designed to encourage

children to explore and discover through hands-on experiences and collaborative activities. Despite the recognised importance of moral development in early childhood education and the alignment of the Reggio Emilia approach with this goal, the reality in many classrooms in Sabon Gari falls short of this ideal. The present situation is marked with several challenges, ranging from cultural values and practices, parental involvement, availability of resources in creating an environment that encourages exploration and creativity, teachers' understanding and applications of the Reggio Emilia's approach, and overcrowded classrooms. With all these challenges, one wonders how the teachers can effectively implement the Reggio Emilia's Approach as a strategy for promoting moral development among preschoolers in Sabon Gari LGA of Kaduna State.

Purpose of the Study

This study aimed to determine teachers' perceptions of the Reggio Emilia's approach as a strategy for promoting moral development among preschoolers in Sabon Gari LGA. Specifically, this study intended to determine the following:

- The components of Reggio Emilia's Approach that support moral development among preschoolers in Sabon Gari LGA.
- The impact of Reggio Emilia's Approach as a strategy in promoting

moral development among preschoolers in Sabon Gari LGA

Research Questions

The following research questions guided the study.

- What are the components of Reggio Emilia's Approach that support moral development among preschoolers in Sabon Gari LGA?
- What impact does Reggio Emilia's Approach have in promoting moral development among preschoolers in Sabon Gari LGA?

Methods

This study examined teachers' perceptions of Reggio Emilia's Approach as a strategy for promoting moral development among preschoolers in Sabon Gari LGA of Kaduna State. Two research questions guided the study, and a descriptive research design was used. The population consisted of 1206 public primary school teachers from 63 public primary schools in Sabon Gari LGA of

Kaduna State. A sample size of 120 teachers was selected a simple random sampling technique. A structured questionnaire titled Teachers' Perception of Reggio Emilia's Approach in Promoting Moral Development (TPREAPMD) was used for data collection on a four-point Likert scale *Strongly Agree = (4 points), Agree (3 points), Disagree (2 points) and Strongly Disagree = (1 point). The instrument was validated for face and content validity by three experts: two from the Department of Early Childhood Care and Education and one from the Measurement and Evaluation unit of the Department of Educational Foundations at the Federal University of Education, Zaria. Reliability was established using Cronbach's alpha, with a reliability coefficient of 0.82, indicating that the instrument was reliable. The research questions were analysed using the mean statistics and standard deviation, where a mean score of 2.5 or above indicated agreement and a mean score below 2.5 indicated disagreement

Results

Research Question One: What are the components of Reggio Emilia's approach that support moral development among preschoolers in Sabon Gari LGA of Kaduna State?

Table 1: Mean Ratings of Respondents on the components of Reggio Emilia's approach that support moral development among Preschoolers in Sabon Gari LGA of Kaduna State

S/N	Components of Reggio Emilia's approach that support moral development among Preschoolers include:	Mean	SD	Decision
1	Children are encouraged to reflect on how their actions affect others during group discussions.	2.50	3.74	Agree
2	The classroom environment promotes inclusivity by displaying diverse ideas and materials equally.	2.46	3.92	Agree
3	Collaborative projects help children develop empathy by working through peer conflicts.	2.74	7.79	Agree
4	Teachers model respectful communication by actively listening to children's perspectives	2.39	6.69	Disagree
5	Art and storytelling are used to explore complex emotions like kindness and fairness	2.50	6.00	Agree
6	Documentation of children's work helps them reflect on their moral choices	2.43	3.56	Disagree
7	Parents and community members are involved in reinforcing ethical values.	2.33	6.68	Disagree
8	Projects evolve from children's interests to address real-world ethical dilemmas.	2.38	7.87	Disagree
9	Teachers act as co-learners rather than authority figures, fostering mutual respect.	2.59	2.94	Agree
10	Peer mediation strategies (e.g., role-playing) are taught to resolve conflicts respectfully	2.58	3.56	Agree
Cluster Mean		2.50		Agreed

The data analysis presented in Table 1 shows the mean ratings of respondents on teachers' perceptions of the component of Reggio Emilia's approach that supports

moral development among preschoolers in Sabon Gari LGA of Kaduna State. Items 1,2,3,5,9, and 10 were all agreed upon by respondents with a mean ranging

from 2.50 to 2.59. while items 4,6,7, and 8, with mean rating of 2.39, 2.43, 2.33 and 2.38, were disagreed by the respondents. The grand mean of 2.50 shows that the respondents agreed with teachers'

perceptions of the component of moral development in Reggio Emilia's approach among preschoolers in Sabon Gari LGA of Kaduna State.

Research Question Two: What impact does Reggio Emilia's approach have on promoting moral development among preschoolers in Sabon Gari LGA?

Table 2: Mean Ratings of Respondents on the impact of Reggio Emilia's Approach on promoting moral development among Preschoolers in Sabon Gari LGA.

S/N	Reggio Emilia's Approach to Promoting Moral Development among Preschoolers in Sabon Gari LGA.	Mean	SD	Decision
1	The Reggio Emilia approach effectively promotes empathy among preschoolers through collaborative activities.	2.37	6.53	Disagree
2	The Reggio Emilia approach cultivates and creates ethical awareness	2.59	6.78	Agree
3	Reggio Emilia's Approach reduces aggressive behaviour by encouraging peer negotiation through collaboration during play.	2.57	4.24	Agree
4	The Reggio Emilia approach encourages children to consider the impact of their actions on others.	2.50	6.16	Agree
5	Parental involvement in Reggio Emilia reinforces the importance of ethical values in daily life.	2.49	1.83	Agree
6	Children in Reggio Emilia-inspired classrooms frequently work together on projects, fostering cooperation.	2.34	4.97	Disagree
7	Reggio Emilia approach instils positive ideas and values in preschoolers	2.48	5.10	Agree
8	Children in Reggio Emilia classrooms develop a strong understanding of fairness and justice	2.56	2.71	Agree
9	The approach helps children develop strong moral reasoning skills through exploration and discussion.	2.50	2.16	Agree
10	The ability of the teachers to document children's work enhances self-awareness and accountability in preschoolers	2.67	6.22	Agree
Cluster Mean		2.50		Agreed

Data analysis presented in Table 2 shows the Mean Ratings of Respondents on the impact of Reggio Emilia's Approach to promoting moral development among Preschoolers in Sabon Gari LGA. Respondent agreed with Items 2, 3, 4, 5, 7, 8, 9, and 10 with mean scores of 2.59, 2.57, 2.50, 2.50, 2.50, 2.56, 2.50, and 2.67, respectively, indicating their perception of positive impact on moral development. Respondent agreed with Items 1 and 6 with a mean of 2.37 and 2.34, respectively, which are below the decision mean of 2.50. The grand mean of 2.50 indicates that respondents agreed that the Reggio Emilia's approach is important for promoting moral development among preschoolers in Sabon Gari LGA.

Discussion of Findings

The findings revealed that teachers generally agreed that certain components of the Reggio Emilia approach supported moral development. These include encouraging reflection during group discussions, collaborative projects fostering empathy, using art and storytelling to explore emotions, teachers acting as co-learners, and peer mediation strategies. These findings align with those of Brightwheel (2024) and The Education Hub (2020), noting that the core principles of the Reggio Emilia approach, which emphasise collaborative learning, child-centred, project-based learning, empower children with agency and responsibility,

while the emphasis on relationships and the environment nurtures respect for others and the world around them. Garcia (2023) also aligns with the positive evaluations of the approach as a holistic framework for moral development, with an emphasis on child-centred learning, exploration, and collaboration, resonating with the view that children are active participants in constructing their knowledge and values.

Despite these ideals, this research indicates that not all teachers consistently model respectful communication by actively listening to children's perspectives. The study found that respondents disagreed with the statement that teachers model respectful communication by actively listening, with a mean rating below the threshold for agreement. This suggests that, while the Reggio Emilia approach advocates for such practices, real-world implementation may be hindered by factors such as traditional teacher-centred norms, limited training, or resource constraints. This finding resonates with Garcia (2023), who argues that teachers in Reggio Emilia-inspired settings are encouraged to view themselves as co-learners and collaborators rather than traditional authority figures. This shift in role fundamentally changes classroom communication dynamics, emphasizing mutual respect and active listening.

Similarly, the study assessed teachers' perceptions of the impact of the Reggio Emilia approach on promoting moral development. While the overall mean

indicated agreement that the approach cultivates ethical awareness, reduces aggressive behaviors through peer negotiation, encourages children to consider the impact of their actions, and reinforces moral values through parental involvement. This also aligns with the findings of Seattle (2023), who emphasize that the Reggio Emilia approach helps children develop a sense of right and wrong and become aware of ethical issues in their environment. By engaging in collaborative projects and discussions, children encounter situations that require them to consider different perspectives, negotiate solutions, and make ethical decisions. This process encourages them to internalize honesty, fairness, and respect. Parental involvement is a key component of the Reggio Emilia approach. Brightwheel (2024) argues that parents actively participate in their children's learning, reinforce the importance of ethical values, and demonstrate the connection between school and home.

The findings show that teachers disagreed that the Reggio Emilia approach effectively promotes empathy among preschoolers through collaborative activities. This is surprising, as collaborative activities are central to the Reggio Emilia approach and are often cited as a means of fostering empathy (The Education Hub, 2020, & Garcia, 2023). This finding resonates with Brightwheel (2024), who argues that the Reggio Emilia approach complements these moral

development strategies by emphasizing collaboration, exploration, and reflection in a child-centered learning environment. It aligns with preschool objectives by fostering empathy, respect, and responsibility through experiential learning.

Conclusion

The study on Teachers' Perception of Reggio Emilia's Approach for Moral Development among Preschoolers in Sabon Gari LGA of Kaduna State indicates that teachers in Sabon Gari LGA generally agreed that the Reggio Emilia approach fosters moral development through reflection, inclusivity, and collaborative empathy building, while recognizing the value of documentation for reflection and guiding ethical inquiry. However, they expressed concern about the consistent modelling of respectful communication and the effective promotion of empathy through collaboration, indicating a potential need for targeted professional development to enhance practical implementation.

Recommendations

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

- Provide adequate teacher training to equip educators to effectively implement the Reggio Emilia approach, particularly in fostering empathy and specific techniques for

active listening and respectful communication.

- Schools should design events or training to inform parents of the roles that they can play in fostering ethical values in children for better moral development. These collaborative efforts will help align home, school, and community environments to provide a comprehensive ethical foundation.
- Teachers should foster Peer-to-Peer communication and implement activities and projects that require working as partners or in pairs. This will promote environment that fosters and encourages cooperation among pupils.

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ARTIFICIAL INTELLIGENCE AND ITS EFFECT ON ADMINISTRATORS' MOTIVATIONAL
COMPETENCE AND ACADEMIC JOB PERFORMANCE IN STATE-OWNED UNIVERSITIES OF
NORTHEAST NIGERIA

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Abstract:

Artificial Intelligence (AI) has emerged as a transformative technological innovation in modern organizations, with universities increasingly adopting AI-driven systems to improve efficiency, productivity, and decision-making processes. In the context of Nigerian higher education, university administrators play a crucial role in policy implementation, coordination of academic activities, and the management of institutional processes that support teaching, learning, and research. Despite this critical responsibility, administrators in many state-owned universities face persistent challenges such as limited resources, bureaucratic bottlenecks, and heavy workloads, which often reduce their motivational competence and consequently affect their academic job performance. This study examined the effect of Artificial Intelligence on administrators' motivational competence and academic job performance in state-owned universities in North East Nigeria. A survey research design was adopted for the study, and data were collected from academic administrators through the use of structured questionnaires. The collected data were analyzed using descriptive and inferential statistical techniques to determine the influence of AI on motivational competence and job performance. The findings revealed that the integration of AI significantly improved administrators' motivational competence by simplifying administrative tasks, enhancing decision-making processes, and reducing routine workload. The study also found that AI positively influenced academic job performance through improved record management, efficient communication, and the timely execution of administrative responsibilities. Based on these findings, the study concluded that the adoption of AI in university administration can play a significant role in strengthening administrators' motivation and improving their job performance. It therefore recommended increased investment in AI infrastructure, continuous training of administrators, and the development of supportive institutional policies to enhance the effective use of AI in higher education administration in Nigeria.

Introduction

Universities are vital for advancing knowledge, promoting innovation, and developing human capital, thereby driving national development and global competitiveness. In Nigeria, particularly within the North-east geopolitical zone,

state-owned universities rely heavily on administrators to coordinate academic programs, enforce institutional policies, manage human resources, and ensure smooth institutional functioning. However, administrators in these universities face enormous challenges,

including inadequate infrastructure, poor funding, insecurity, and bureaucratic bottlenecks, which significantly undermine their motivation and academic job performance (Adewale & John, 2021).

Artificial Intelligence (AI) has increasingly emerged as a transformative solution capable of reshaping university administrations and boosting productivity. AI is broadly defined as the simulation of human cognitive functions, such as reasoning, problem solving, and learning, by machines and computer systems. In educational contexts, AI-driven platforms include automated record systems, intelligent scheduling, data-driven decision support, and predictive analytics, all of which are designed to enhance efficiency and reduce workload (Danladi & Usman, 2022). By automating repetitive functions, AI allows administrators to focus on strategic responsibilities while also improving the accuracy of institutional processes (Ibrahim & Okon, 2021).

Globally, AI adoption in higher education has been instrumental in strengthening institutional governance, enhancing accountability, and promoting innovation in service delivery. For example, universities in developed contexts have adopted AI-powered systems for human resource management, online communication, and decision support tools that significantly improve

productivity (Yusuf & Oladipo, 2022). However, Nigerian universities lag behind due to poor technological infrastructure, inadequate training, and resistance to digital transformation (Ogunleye & Fasina, 2023).

In the North East, where insecurity and socioeconomic instability threaten the effectiveness of higher education, AI integration is particularly urgent. Its application has the potential to improve motivational competence by reducing stress associated with routine bureaucratic burdens while also strengthening administrators' academic job performance (Ezekiel, Musa, and Abdullahi, 2022). Furthermore, AI can foster improved communication, streamline reporting systems, and reduce resource allocation (Nwachukwu & Hassan, 2020).

Therefore, this study seeks to empirically examine the effect of Artificial Intelligence on administrators' motivational competence and academic job performance in state-owned universities in North-east Nigeria. By doing so, it provides evidence-based insights that can inform higher education policies, administrative reforms, and broader adoption of digital innovation in the Nigerian context.

Statement of the Problem

University administrators in North East Nigeria face mounting pressures from insecurity, under-funding,

infrastructural decay, and bureaucratic hurdles, which weaken their motivation and diminish academic job performance. While Artificial Intelligence offers opportunities to reduce administrative burdens and improve efficiency, its integration in Nigerian universities remains limited due to infrastructural gaps, inadequate training, and policy weaknesses. This gap raises critical questions regarding the extent to which AI can enhance administrators' effectiveness in state-owned universities.

Aim and Objectives of the Study

This study aimed to assess the effect of Artificial Intelligence on administrators' motivational competence and academic job performance in state-owned universities in North-east Nigeria. In particular, this study;

examined the influence of Artificial Intelligence on administrators' motivational competence in state-owned universities in northeast Nigeria.

determined the effect of Artificial Intelligence on administrators' academic job performance in state-owned universities in northeast Nigeria.

Research Questions

- How does Artificial Intelligence influence administrators' motivational competence in state-owned universities in North-east Nigeria?

- What is the effect of Artificial Intelligence on administrators' academic job performance in state-owned universities in North-east Nigeria?

Hypotheses

H0₁: Artificial Intelligence has no significant influence on administrators' motivational competence in state-owned universities of North East Nigeria.

H0₂: Artificial Intelligence has no significant effect on administrators' academic job performance in state-owned universities in North-east Nigeria.

Theoretical Framework

Expectancy Theory of Motivation

This study was anchored in the *Expectancy Theory of Motivation* propounded by Victor Vroom in 1964. This theory posits that individuals are motivated to perform better when they believe that their efforts will lead to desirable outcomes. It highlights three major components: expectancy (belief that effort leads to performance), instrumentality (belief that performance leads to rewards), and valence (the value placed on the reward). Applied to university administration, the theory suggests that administrators' motivation is shaped by their perception of how effort facilitated by supportive tools such as Artificial Intelligence (AI) translates into

improved performance and meaningful outcomes.

This theory emphasizes the rational and cognitive processes of individuals in motivation, making it highly adaptable to organizational and educational contexts. This highlights the importance of aligning resources, support, and tools to performance outcomes, which is relevant in evaluating administrators' competence and productivity in universities (Adamu & Bello, 2021).

One weakness of this theory is the assumption that individuals always act rationally in assessing effort and outcomes. In practice, motivation may also be influenced by emotions, cultural values, or external constraints. Additionally, measuring expectancy, instrumentality, and valence in real-world contexts is often complex and subjective (Oluwaseun, 2022).

The relevance of this theory lies in its direct connection with motivation and job performance, which are central to this study. Administrators in state-owned universities often experience reduced motivation owing to their workload and systemic challenges. By integrating AI tools to streamline administrative tasks, the expectancy of better performance and instrumentality in achieving institutional goals can enhance motivational competence. Thus, Vroom's Expectancy Theory provides a useful framework for analyzing how AI influences administrators' motivation and academic

job performance in the North-east Nigerian context.

Methodology

This study adopted a descriptive survey research design because it allowed for the systematic collection of data from a large population to assess the effect of Artificial Intelligence (AI) on administrators' motivational competence and academic job performance. The study population comprised all administrators in state-owned universities in North-east Nigeria, estimated at 1,240 based on records from the National Universities Commission (NUC, 2023). From this population, a sample of 310 administrators was drawn using stratified random sampling to ensure representation across faculties, departments, and administrative units.

Data were collected using a structured questionnaire designed to measure administrators' exposure to AI tools, motivational competence, and job performance indicators. The instrument was validated by three experts in educational administration and technology, and a pilot test conducted with 30 administrators outside the study area yielded a Cronbach's alpha reliability coefficient of 0.87, indicating high internal consistency.

The collected data were analyzed using descriptive statistics such as frequency counts, percentages, and means to summarize responses, while inferential

statistics, specifically regression analysis, were employed to test the hypotheses. All analyses were conducted at a significance level of 0.05. The methodology provides a rigorous approach for examining the relationship between AI adoption, motivation, and performance among university administrators.

Findings and Discussions

This study investigated the effect of Artificial Intelligence (AI) on administrators' motivational competence and academic job performance in state-owned universities in North-east Nigeria. The results are presented in the tables with explanatory narratives.

Table 1: Influence of AI on Administrators' Motivational Competence

Item	Agree (%)	Disagree (%)
AI reduces workload and stress	78	22
AI tools enhance confidence in task delivery	74	26
AI promotes creativity and innovation	69	31
AI improves decision-making speed	81	19

Source: Field Survey, 2025

Table 1 shows that the majority of administrators perceived AI as highly beneficial to their motivational competence. Most agreed that AI reduces workload and stress (78%), enhances confidence in task delivery (74%),

promotes creativity (69%), and improves decision-making speed (81%), highlighting AI's positive role in supporting administrative efficiency and engagement.

Table 2: Effect of AI on Administrators' Academic Job Performance

Item	Agree (%)	Disagree (%)
AI improves accuracy in administrative records	82	18
AI enhances communication and reporting efficiency	76	24
AI reduces delays in decision-making	79	21
AI supports better monitoring of academic tasks	72	28

Source: Field Survey, 2025

Table 2 indicates that administrators perceived AI as significantly enhancing their academic job performance. Most agreed that AI improves record accuracy (82%), boosts communication efficiency

(76%), reduces decision-making delays (79%), and supports the monitoring of academic tasks (72%). This underscores AI's effectiveness in promoting productivity and administrative precision.

Hypotheses Testing

Table 3: Regression Analysis of AI on Administrators' Motivational Competence

Model	Independent Variable	Dependent Variable	R	R ²	Adjusted R ²	F	p-value	Decision
1	AI Adoption	Motivational Competence	0.659	0.434	0.432	295.21	0.001	Significant

Table 3 shows that AI adoption significantly influenced administrators' motivational competence. An R-value of 0.659 indicates a strong positive relationship between AI and motivation, while an R² of 0.434 suggests that 43.4% of the variance in motivational competence is explained by AI. The F-value of 295.21 with a p-value of 0.001 confirms that the model is statistically

significant. These findings imply that AI tools enhance administrators' motivation by reducing their workload, improving decision-making, promoting creativity, and fostering confidence in task execution. Consequently, the null hypothesis (H0₁) was rejected.

Table 4: Regression Analysis of AI on Motivation and Job Performance

Variable	B	t-value	Sig. (p)
AI and Motivation	0.68	7.21	0.001*
AI and Job Performance	0.72	8.15	0.000*

R² = 0.63, F(2, 307) = 56.47, p < 0.05

*Source: Field Survey, 2025; Significant at p < 0.05

Table 3 indicates that AI has a statistically significant positive effect on both administrators' motivational competence ($\beta = 0.68$, p < 0.05) and job

performance ($\beta = 0.72$, p < 0.05). The model explained 63% of the variance in the motivation and performance outcomes. These findings corroborate

those of earlier studies that emphasized AI's potential in enhancing educational administration.

Discussion of Findings

The study revealed that Artificial Intelligence (AI) significantly influenced administrators' motivational competence and academic job performance in state-owned universities in North-east Nigeria. Administrators have reported that AI reduces routine workloads, improves decision-making speed, and enhances confidence in task execution. These findings align with those of Bello and Yusuf (2021), who noted that digital tools reduce administrative fatigue, thereby increasing motivation. Similarly, Danladi and Usman (2022) emphasized that AI promotes innovation by enabling administrators to focus on strategic tasks rather than repetitive processes.

The positive effect of AI on job performance was evident through improved accuracy in record management, enhanced communication, and the timely execution of responsibilities. Ibrahim and Okon (2021) observed that AI supports evidence-based decision-making, which strengthens institutional governance. The regression results further confirmed that AI has a statistically significant positive effect on both motivational competence and job performance, suggesting that AI integration is a critical driver of administrative efficiency.

However, challenges, such as limited infrastructure, inadequate training, and resistance to change, remain barriers to full AI adoption (Ogunleye and Fasina, 2023). Addressing these constraints through targeted investments, capacity building, and policy support can maximize AI's potential of AI. Overall, this study demonstrates that AI is a powerful tool for enhancing motivation and performance, offering practical solutions to longstanding administrative challenges in Nigerian universities.

Conclusion

The study concluded that Artificial Intelligence significantly enhances administrators' motivational competence and academic job performance in state-owned universities in North-east Nigeria. AI fosters a more efficient and motivated administrative environment by reducing routine workload, improving decision-making, and streamlining communication. Despite challenges, such as limited infrastructure and inadequate training, the findings indicate that adopting AI tools can substantially improve institutional governance, productivity, and the overall quality of higher education administration in the region.

Recommendations

State-owned universities in North-east Nigeria should invest in AI infrastructure to support administrators' efficiency and motivation.

Administrators should receive regular training on AI tools to maximize their impact on academic job performance and institutional productivity.

Conflict of Interest Statement

I, Koku Agbu Koku, declare that there is no conflict of interest regarding the submission, review, and publication of this manuscript in the ZAJES of the Federal University of Education, Zaria. The research was conducted objectively without any financial, personal, or institutional influence.

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CHRISTIAN RELIGIOUS STUDIES AND THE QUINTUPLE HELIX: APPLYING AN INNOVATION SYSTEMS FRAMEWORK TO SOCIETAL DEVELOPMENT IN NIGERIA

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Abstract:

Nigeria confronts a compounding development crisis characterised by structural poverty, institutional decay, youth unemployment, environmental degradation, and a deepening erosion of civic values. This paper proceeds from the recognition that no single sector possesses the capacity to address these challenges in isolation. Drawing on qualitative documentary analysis, the study applies the Quintuple Helix Innovation Model to examine how Christian Religious Studies (CRS) — encompassing its curricula, pedagogical orientations, and ecclesial institutions — can function as nodes of moral capital, civic formation, and community empowerment across five interdependent societal subsystems: academia, industry, government, civil society, and the natural environment. The analysis maps both current contributions and unrealised potential across each helix, distinguishing carefully between what CRS demonstrably achieves and what reformed curricula and pedagogy could produce. The paper argues that CRS is not simply a subject of confessional instruction but a generative discipline capable of producing the ethical, social, and epistemic infrastructure required for enduring national development. The findings call for policy integration of CRS into Nigeria's development architecture through curriculum reform, faith-institution partnerships, and community-based learning models, and identify a substantial agenda for empirical research.

Introduction

Nigeria's path to national development remains one of the most intractable social and political challenges on the African continent. This assessment holds notwithstanding the country's abundant natural resources, demographically youthful population, and rich cultural heritage (Lawal & Oluwatoyin, 2011). The country continues to grapple with institutional decay and instances of degrading moral and civic values (Independent Corrupt Practices and

Other Related Offences Commission [ICPC], 2025). Compounding these difficulties are systemic poverty, ethnic fragmentation, environmental degradation, and the gradual deterioration of public morality — challenges that are not unique to Nigeria but have been particularly pronounced in resource-rich economies beset by governance failures (Anser et al., 2025). Critically, these problems are not exclusively material in nature; they are, at their root, moral and civic failures — deficits in the values,

dispositions, and relational capacities that undergird sustainable community life.

It is precisely in this context that the disciplinary contributions of Christian Religious Studies (CRS) demand renewed scholarly and policy attention. In Nigerian secondary and tertiary institutions, CRS occupies a contested but vital space in the nation's educational domain. The course is, in most curricula, regarded as a formative discipline concerned with the cultivation of moral agency, critical reflection, and civic responsibility grounded in the resources of the Christian tradition. Nevertheless, its relevance to national development has been questioned on the basis of its perceived character as a confessional exercise ill-suited to the demands of a pluralist, modernising society. This article contests that dismissal.

The article argues that when CRS is reconceived through the lens of the Quintuple Helix Innovation Model — a framework that positions knowledge production, industry, government, civil society, and the natural environment as co-equal drivers of sustainable development — the discipline functions as a generative resource for multi-sectoral national transformation. The Quintuple Helix, initially developed by Carayannis and Campbell (2009, 2010) as an extension of earlier triple and quadruple helix frameworks, represents a significant advance in innovation theory by incorporating civil society and the natural

environment as essential systemic actors. In the Nigerian context, where civil society organisations, faith communities, and ecological vulnerability are all critical variables in the development equation, the Quintuple Helix offers a conceptually powerful lens through which the multi-dimensional contributions of CRS can be assessed.

Two clarifications of scope are essential at the outset. First, this study employs documentary analysis to examine both what CRS currently contributes to each helix of the model and what reformed CRS curricula and institutions could contribute. The analysis therefore distinguishes consistently between evidenced current contributions and normative claims about developmental potential. Second, this study focuses primarily on Christian Religious Studies and does not purport to offer a comprehensive analysis of Islamic Religious Studies (IRS) or other traditions. While points of convergence between CRS and IRS are noted where relevant, a full comparative inter-faith analysis of the kind that Nigeria's religious plurality demands lies beyond the present scope. The authors acknowledge this as a substantive limitation and commend it as a priority area for future research.

The discussion proceeds through the standard IMRAD format. Following this introduction, the paper reviews the relevant literature on the Quintuple Helix

model, CRS in Nigeria, and faith-based contributions to development. The methodology section operationalises the documentary approach. The results and discussion section maps the contributions of CRS across each of the five helices. The article concludes with implications for policy, curriculum reform, and a research agenda.

The Quintuple Helix Innovation Model: Theoretical Foundations

The intellectual genealogy of the Quintuple Helix begins with Etzkowitz and Leydesdorff's (1995) Triple Helix framework, which proposed that the interaction of university, industry, and government constitutes the primary engine of knowledge-based economies. This triadic model, while influential, was subsequently challenged for its neglect of civil society as an autonomous driver of innovation. Carayannis and Campbell (2009) addressed this gap by introducing a Quadruple Helix model that incorporated a fourth dimension centred on democratic civil society, culture, and media-based public domains, acknowledging that civil society mediates the uptake and legitimation of innovation within democratic systems. It is important to note that the fourth helix in this formulation is principally defined by democratic institutions and civil society participation, not merely by cultural or media expression as such; the cultural and media dimensions are understood as expressions of civic agency.

The Quintuple Helix emerged from the further recognition that sustainable innovation cannot be separated from its ecological substrate. Carayannis and Campbell (2010) argued that the natural environment constitutes the fifth helix — not simply as a resource to be exploited, but as a systemic actor whose integrity is a precondition for the sustained viability of all other helices. This ecological turn corresponds with the imperatives of the United Nations' 2030 Agenda for Sustainable Development (United Nations, 2015) and resonates with sustainability science's insistence on planetary boundaries as the non-negotiable context for all human development.

Scholars have subsequently applied the Quintuple Helix to diverse national and regional contexts. Leydesdorff and Etzkowitz (2001) demonstrated its usefulness for mapping knowledge flows in European innovation systems. In the Global South, Afonso et al. (2012) examined how the framework might be adapted for developing economies, noting the particular importance of informal institutions — including religious organisations — in closing the gaps left by weak formal structures. More recently, Ranga and Etzkowitz (2013) explored how civil society actors mediate the translation of academic knowledge into community benefits, a function that faith-based institutions in Nigeria have long performed, often without formal recognition in development planning.

Christian Religious Studies in Nigeria: Status, Challenges, and Possibilities

Christian Religious Studies was formally introduced into Nigeria's educational curriculum following the recommendations of the Ashby Commission Report of 1959 and was subsequently consolidated in the National Policy on Education (Federal Republic of Nigeria, 2013). The discipline is taught from junior secondary school through to the university level and encompasses biblical studies, Christian ethics, church history, and the theology of social engagement. Its curriculum mandates explicitly include the formation of moral character, civic responsibility, and respect for human dignity — objectives aligned with the developmental goals of the Nigerian state.

Notwithstanding this mandate, CRS in Nigeria encounters considerable institutional challenges. Policy shifts toward science and technology-oriented curricula in the 1980s and 1990s signalled the marginalisation of religious studies in federal policy discourse. The perception that CRS is a “soft” subject with limited vocational relevance contributed to declining enrolment in some states and inadequate resourcing of departments at the tertiary level (Heckman & Montalto, 2016; Bertheussen, 2025). Jawoniyi (2019) argued that rote-learning approaches to CRS pedagogy have undermined the subject's potential for critical formation, reducing it to the memorisation of biblical texts without the deeper hermeneutical and

ethical engagement that the discipline demands.

This pedagogical deficiency represents a substantive challenge that must be held in tension with the developmental contributions that Christian institutions have nonetheless generated. Nwachukwu (2024) demonstrated that mission-founded educational institutions have consistently produced civic leaders, social entrepreneurs, and community organisers whose formation is traceable to their religious education. The World Faiths Development Dialogue (2018) documents the role of Christian NGOs and church networks in health service delivery, peacebuilding, and economic empowerment programmes across the Niger Delta, the Middle Belt, and northern Nigeria. Pentecostal churches, moreover, have engaged in need-based evangelism that integrates spiritual support with practical community assistance, emphasising education, vocational training, and the creation of employment opportunities, especially targeting young adults — while older congregants provide financial resources, mentorship, and advisory roles, creating a multigenerational effort toward economic empowerment and poverty reduction (Oye-Oluwafemi, 2024). These contributions represent a *de facto* engagement with all five helices of the Quintuple Helix, even where that engagement has not been theorised as such.

The crucial analytical point, however, is that these contributions flow

primarily from Christian institutions rather than from CRS as a pedagogical discipline per se. The article's argument is that a reformed, critically engaged CRS curriculum and pedagogy can both theorise and amplify the developmental work that faith institutions already perform, providing the intellectual infrastructure that connects educational formation to multi-sectoral development outcomes.

Faith-Based Institutions and Societal Development: A Global Perspective

The relationship between religious institutions and public development has attracted considerable scholarly attention in recent decades. Berger (1999) famously revised his earlier secularisation thesis to acknowledge the enduring and often constructive role of religion in modern public life, and subsequent empirical research has reinforced this reconsideration. Putnam (2000) identified religious communities as primary generators of social capital — networks of trust, reciprocity, and civic engagement that underlie democratic institutions and economic cooperation. In the African context, Ellis and Ter Haar (2003) argued that religious imagination provides the symbolic resources through which communities articulate aspirations for justice, healing, and transformation.

Oladipo (2003) investigated the relationship between piety and political participation in African Christianity,

documenting how church-based formation has shaped civic engagement in Nigeria's democratisation process. Akintayo et al. (2024), using dialogical and project-based methods, demonstrated that Christian Religious Studies advances peace education in conflict-affected communities. Given Nigeria's ethno-religious violence, this is a contribution of particular significance: CRS provides a forum for intergroup dialogue and peacebuilding by facilitating critical thinking among learners. This finding aligns with research showing that religious education can serve as a peacebuilding tool when it adopts transformative rather than confessional approaches (Sakupapa & Adehanloye, 2025). Nevertheless, this body of evidence has not been systematically organised within an innovation systems framework. It is from this gap that the present study proceeds.

Methodology

Research Design

This study adopts a qualitative documentary research design. A qualitative approach is appropriate given the interpretive nature of the enquiry: the study does not seek to quantify the contributions of CRS to development outcomes, but to analyse, contextualise, and theorise those contributions within the Quintuple Helix framework. Documentary analysis, as described by Bowen (2009), entails the systematic

review and interpretation of existing texts — policy documents, curriculum frameworks, academic literature, and institutional reports — to construct analytical insights not available from any single source.

Data Sources

Primary sources examined in this study include: the Nigeria National Policy on Education (Federal Republic of Nigeria, 2013); the West African Examinations Council (WAEC) CRS syllabus for Senior Secondary Schools; curriculum guidelines from the National Universities Commission (NUC, 2023) for Religious Studies programmes; policy documents from the Nigerian Educational Research and Development Council (NERDC); and institutional reports from major faith-based development organisations operating in Nigeria, including the Catholic Caritas Foundation of Nigeria (CCFN), the Catholic Bishops' Conference of Nigeria (2019), and the Christian Association of Nigeria (CAN). Secondary sources include peer-reviewed journal articles, academic monographs, and book chapters addressing religious education, development theory, innovation systems, and Nigerian social policy, sourced from JSTOR, Google Scholar, and African Journals Online (AJOL).

Analytical Procedure

Documents were analysed thematically, with the five helices of the Quintuple Helix model serving as the

primary deductive analytical categories: (1) academia and education, (2) industry and economy, (3) government and policy, (4) civil society and culture, and (5) the natural environment. Themes were thus derived deductively from the theoretical framework and applied to the documentary corpus, which is consistent with the study's explicitly framework-application purpose. Each helix was examined for evidence of CRS-related contributions, institutional linkages, and developmental potential.

Within this deductive structure, the analysis proceeded inductively at the level of specific evidence: documentary sources were read for their explicit content and for the broader contextual meanings within which that content operates, drawing on interpretive principles consistent with hermeneutic inquiry (Gadamer, 1989). Analytical categories were iteratively reviewed across the corpus to ensure that the evidence cited under each helix was adequate to the claims being made, and that a consistent distinction was maintained between documented current contributions and normative claims about unrealised potential. Thematic saturation was achieved when successive review of additional documents yielded no new substantive patterns under any of the five categories.

Limitations

This study has several limitations that must be acknowledged at the outset. As a

documentary analysis, findings are constrained by the quality, availability, and representativeness of the texts reviewed. Primary empirical data — such as interviews with CRS educators, community leaders, or policymakers, or direct analysis of classroom practice — were not deployed but would substantially strengthen the findings; empirical follow-up studies are therefore recommended as a priority. The reliance on Oladipo's (2003) study for claims about entrepreneurial formation of mission-school graduates is noted as a limitation given the study's age; more recent empirical work is needed to confirm or qualify this finding in the current educational landscape. Additionally, this study centres on Christian Religious Studies and does not offer an equivalent analysis of Islamic Religious Studies or other faith traditions. In a country where approximately half the population is Muslim, this represents a significant contextual boundary that future research must address; the present study is best understood as a case study that invites a parallel analysis of IRS and ultimately a comparative inter-faith treatment.

Results and Discussion

Documentary analysis produces substantive findings across all five helices of the Quintuple Helix framework. The sections below present these findings, distinguishing throughout between contributions that the documentary

evidence demonstrates CRS currently makes and contributions that a reformed CRS could make if the pedagogical and institutional deficiencies identified in the literature were addressed.

Helix One: Academia — CRS as a Site of Knowledge Production and Moral Formation

The first helix concerns academic institutions' role in generating knowledge and advancing innovation. Within this helix, CRS has historically been foundational: it shapes the intellectual and moral formation of Nigerian students through schools and universities. However, the evidence also shows that this potential is currently unrealised in significant respects. Jawoniyi (2019) demonstrated that CRS pedagogy in Nigerian schools remains predominantly teacher-centred and examination-oriented, thereby constraining its formative potential and reducing the discipline to the memorisation of biblical texts without the deeper hermeneutical and ethical engagement that it demands.

The theoretical resources for reform are well developed. Groome's (1980) shared praxis methodology repositions students as moral agents who reflect critically on lived realities and develop faith-informed responses, comprising engagement with experience, dialogue with tradition, the development of ethical responses, and action upon them. This approach aligns with African practical theology, which connects religious

reflection to social challenges (Magezi, 2023), and embodies Freire's (2017) critical pedagogy in its insistence that education must be oriented toward the transformation of reality rather than its passive reception. Contemporary frameworks that build on Groome's shared praxis further develop moral agency and progressive engagement (Mahon et al., 2020; Majola et al., 2025), offering a path to repositioning CRS from doctrinal transmission to transformative education for Nigerian youth.

The distinction between current and potential contribution is critical here. What the evidence establishes for the first helix is this: NUC benchmark standards for Religious Studies programmes (NUC, 2023) include community service and public engagement as graduate outcomes, indicating an institutional recognition that academic CRS should generate civic capital. What the evidence does not establish is that current pedagogical practice reliably delivers these outcomes. Realising the first helix's potential therefore depends on substantive pedagogical reform, strengthened community-university partnerships, and synergistic research collaboration between CRS departments and development organisations.

Helix Two: Industry and Economy — CRS, Entrepreneurial Ethics, and Economic Justice

The second helix concerns industry, economic institutions, and wealth

generation. The connection between CRS and economic development, while not immediately apparent, is grounded in the substantive economic ethics that the Christian tradition makes available. Catholic Social Teaching, encompassing the principles of human dignity, universal destination of goods, preferential option for the poor, and solidarity (Aubert, 2003; Curran, 2013; Ajibola, 2015), offers students an economic framework that challenges both the extractive logic of neoliberal capitalism and Nigeria's informal culture of corrupt accumulation. Protestant traditions provide complementary resources in their emphasis on vocation, stewardship, and the sanctification of work.

Oladipo's (2003) study found that graduates of mission-founded schools exhibit greater entrepreneurial initiative and collaborative conduct attributable to their integration of Christian ethical formation. While this finding is now more than two decades old and requires replication in the contemporary Nigerian educational context, it points to a plausible mechanism linking CRS formation to economic behaviour. The CRS curriculum's engagement with work, vocation, and stewardship speaks directly to the formation of professional ethics and productivity. In Nigeria's context of persistent corruption — which Transparency International (2023) consistently ranks among the most severe in Africa — developing integrity-oriented

professionals represents a contribution of real economic value.

The Nigerian church already functions as an economic institution in its own right, operating microfinance schemes, cooperatives, and social enterprises across the country. Formalising these contributions through regulatory recognition and policy integration would amplify their developmental impact. The argument for the second helix is therefore both evidential and normative: CRS currently provides formative resources that support economic ethics and community enterprise, and a reformed curriculum could deepen and systematise this contribution.

Helix Three: Government and Policy — CRS as a Resource for Governance and Civic Virtue

The third helix concerns government administration and public policy. CRS has strong historical ties with governance institutions in Nigeria. Christian educational institutions have been key producers of Nigeria's political elite; many governors, ministers, judges, and civil servants who shaped the Nigerian state were educated in mission schools and church-related universities. This legacy is, however, double-edged: the documented conduct of many such leaders has contradicted rather than embodied the ethical formation they received, which serves not to discredit CRS formation but to underscore the urgency of strengthening

and deepening it. The state's need for leaders with genuine integrity and civic commitment remains acute, and CRS, as a discipline of civic formation, is well positioned to address it.

The Christian tradition in political theology provides rich resources for civic formation: doctrines of the common good, governance accountability, human rights, and the obligation of rulers toward justice. Catholic Social Teaching, from Leo XIII's *Rerum Novarum* (1891) through Pope Francis' *Laudato Si'* (2015), offers guidance on justice, subsidiarity, and ecological stewardship that speaks directly to Nigerian policy challenges. Protestant social ethics provide complementary resources through their traditions of prophetic critique and democratic accountability. A CRS curriculum that engages these traditions in the Nigerian context would produce graduates capable not merely of understanding governance but of reforming governance structures from within.

Nigeria's National Policy on Education (Federal Republic of Nigeria, 2013) includes citizenship development as an objective but does not specify the role of CRS in achieving it. A policy framework that explicitly links CRS graduate outcomes to governance and citizenship indicators would create accountability for the discipline's civic formation mandate and provide a basis for increased investment in CRS departments and programmes.

Helix Four: Civil Society and Culture — CRS as a Generator of Social Capital and Cultural Cohesion

The fourth helix — encompassing democratic civil society, media, and culture — is where CRS makes its most visible and evidenced contributions in Nigeria. The church operates schools, hospitals, orphanages, conflict mediation centres, and community development projects across the federation. The social capital generated through these institutions — networks of trust, reciprocity, and collective commitment — constitutes a key development resource. CRS pedagogy cultivates the personal and relational capacities — forgiveness, reconciliation, and service — that underpin this social capital formation.

In a Nigerian context defined by ethno-religious conflict and deep inequality, these capacities are preconditions rather than luxuries of development. Akintayo et al. (2024) found that CRS-based peace education is effective in reducing intergroup hostility, particularly in Plateau State, one of Nigeria's most conflict-affected regions. This constitutes direct evidence of CRS's contribution to the civil society helix in the domain of peacebuilding. CRS also engages with Nigeria's cultural diversity in ways that the fourth helix demands: Ukpong's (2002) inculturation methodology points toward a CRS pedagogy that mediates cultural particularity with cross-cultural solidarity, engaging with Igbo, Yoruba,

and Hausa traditions in dialogue with Christian thought to produce a more contextually grounded and culturally cohesive formation.

The church's media presence through television, radio, and digital content further shapes public discourse on ethics and governance. The development of a CRS-informed media ethics would strengthen the discipline's contribution to this cultural dimension of the fourth helix. Crucially, this is the helix where the extension of this analysis to Islamic Religious Studies is most urgently needed: Nigeria's civil society and cultural fabric are jointly constituted by Muslim and Christian communities, and a development framework that attends only to CRS's contribution to this helix risks inadvertently reproducing the very fragmentation it seeks to overcome.

Helix Five: The Natural Environment — CRS and Ecological Stewardship

The fifth helix concerns the natural environment as the ecological foundation for all human development. In Nigeria, ecological challenges are both severe and deteriorating: oil pollution in the Niger Delta has devastated ecosystems and livelihoods; deforestation in the Middle Belt and the north has accelerated desertification and fuelled resource conflicts; urban waste mismanagement threatens public health; and climate change increasingly disrupts agricultural cycles, threatening food security and rural livelihoods (Okore, 2024).

The Christian tradition provides considerable ecological resources that remain, as the documentary analysis confirms, substantially underutilised in current Nigerian CRS curricula. This underutilisation is an important finding: unlike the first four helices, where CRS both currently contributes and could contribute more, the fifth helix represents an area where the contribution is primarily potential rather than actual. The theology of creation, which holds that the natural world is God's gift entrusted to humans as stewards, provides the theological grounding for environmental ethics. Pope Francis' *Laudato Si'* (2015), which connects care for the earth with care for the poor and constitutes one of the most significant contributions to environmental ethics in contemporary Catholic Social Teaching, speaks directly to Nigeria's challenges. Protestant ecological theology offers complementary resources through Reformed creation doctrine and the Wesleyan tradition's emphasis on sanctification of creation.

There are, however, grounds for cautious optimism about the fifth helix. Church-based environmental initiatives have demonstrated practical potential: the Catholic Bishops' Conference of Nigeria (2019) has issued pastoral letters on environmental care, and dioceses have established ecological committees engaged in tree planting, waste management, and advocacy against oil

pollution. These projects constitute promising engagement with the fifth helix that CRS education — if reformed to incorporate ecological theology as a substantive curriculum component — can inform, amplify, and sustain.

Synthesis: CRS as a Quintuple Helix Integrator

The foregoing analysis reveals a consistent pattern: CRS, when properly conceived and resourced, functions not as a single-helix contributor but as a cross-cutting integrator across all five dimensions of the Quintuple Helix. The formation of moral agents with integrity and civic commitment addresses the governance failures of the third helix. The cultivation of social capital and communal solidarity strengthens the civil society dimension of the fourth. Theological engagement with creation care speaks to the ecological imperatives of the fifth. The training of ethically minded professionals contributes to the economic productivity of the second. And the generation of critical, engaged citizens and scholars enhances the knowledge-production function of the first.

This integrative potential is not simply theoretical. The institutions of Christian education in Nigeria — mission schools, church universities, theological colleges, and parish-based formation programmes — have historically embodied this multi-helical function, even without an explicit theoretical

framework. The Quintuple Helix model provides the conceptual architecture through which these contributions can be named, mapped, evaluated, and intentionally amplified. The model is valuable precisely because it refuses the reduction of development to any single sector, insisting instead on the creative interdependence of knowledge, industry, governance, community, and the environment. Christian Religious Studies, at its best, has always understood its own vocation in similar terms — as oriented not exclusively toward individual salvation but toward the shalom of the whole community, the healing of the land, and the flourishing of all.

Conclusion

This article has argued that Christian Religious Studies, when reconceived through the Quintuple Helix Innovation Model, constitutes a strategic resource for multi-sectoral societal development in Nigeria. The documentary analysis demonstrates that CRS engages with all five helices of the model, both actually and potentially. CRS as an academic discipline generates moral and civic capital in the educational helix; provides formative resources for economically ethical professionals in the economic helix; equips citizens for responsible governance in the policy helix; builds social capital and cultural cohesion in the civil society helix; and draws on a theological tradition of creation care that, if integrated into curricula, would speak

powerfully to the ecological imperatives of the fifth helix.

The study has been careful to distinguish between contributions that the evidence demonstrates CRS currently makes and contributions that a reformed CRS could make — a distinction that is not a concession to scepticism but a sign of analytical integrity. The gap between current practice and developmental potential is, in many respects, the most important finding of the analysis: it identifies precisely where reform is needed and why.

A Nigerian proverb teaches that wisdom is not the monopoly of one household. The challenges of Nigerian development are deep, multidimensional, and urgent enough to require the coordinated efforts of multiple disciplines, sectors, and traditions. It is time for Nigerian policy, scholarship, and ecclesial practice to take seriously the integrative developmental vocation of Christian Religious Studies, and to build the institutional structures through which its promise can be fully realised.

Recommendations

The findings of this study generate the following recommendations:

For curriculum developers and educational policymakers: CRS should be repositioned from a confessional subject to a critical formation discipline whose graduate outcomes are explicitly linked to the civic, economic, and ecological

imperatives of national development. The National Policy on Education should be revised to specify the role of CRS in achieving citizenship development objectives.

For CRS educators: A pedagogical shift from rote instruction to dialogical, praxis-oriented, and contextually grounded teaching is urgently needed. Groome's shared praxis methodology and its African practical theology adaptations provide a theoretically developed and empirically grounded framework for this transition.

For church leaders and faith-based organisations: The Quintuple Helix framework provides a theoretical rationale for formalising, scaling, and entering into structured partnerships around the developmental activities that faith institutions already undertake. Policy advocacy for regulatory recognition of church-based microfinance, cooperatives, and social enterprises is specifically recommended.

For researchers: The article identifies a substantial empirical research agenda, including: longitudinal studies of CRS graduates' civic and economic behaviour; comparative assessments of CRS pedagogy across Nigerian states; action-research partnerships between university CRS departments and faith-based development organisations; and, most urgently, a parallel analysis of Islamic Religious Studies within the Quintuple Helix framework, with a view to

producing an inter-faith development analysis adequate to Nigeria's religious plurality.

For the scholarly community: Future research should deploy primary empirical methods — including interviews with CRS educators, community leaders, and policymakers, as well as direct observation of classroom practice — to ground the theoretical contributions of this study in empirical evidence.

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INFLUENCE OF HERDERS-FARMERS CONFLICT ON PUPILS' ENROLMENT, RETENTION, AND COMPLETION OF BASIC EDUCATION IN BENUE STATE, NIGERIA

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Abstract

Recently, farmers-herders in Benue state had a sour relationship with persistent conflict. The conflict erupted in the state at intervals with varying gravity, such as displacement of people, destruction of houses, schools, deaths, and loss of valuable items worth several million. The study examined the influence of herders-farmers conflict on pupils' enrolment, retention, and completion of basic education in Benue State, Nigeria. The study adopted descriptive survey method. The population of the study comprised all 4,486 basic school pupils in Benue State, Nigeria. A sample of 30 from 438 basic schools in three (3) local government areas under study was selected using a multistage sampling technique. A period of 10 years was used for the collection of data. The data collected from this study were analysed using descriptive statistics. The findings of the study revealed, among others, that enrolment dwindled with increasing conflict, retention also declined with severity in conflict, as well as completion rates across three local government areas, especially in the years 2014, 2018, and 2020. The study concluded that the farmers-herders conflict in Benue State has influenced enrolment, retention, and completion of basic education. The study recommended, among others, that the international communities and the federal/state government should serve as an intermediary to resolve the continuous conflict.

Introduction

The world at large, and the African continent in particular, has long been characterized by recurring conflicts that date back to time immemorial. In recent decades, however, the nature and dynamics of these conflicts have evolved significantly. Contemporary conflicts are increasingly driven by factors such as greed, struggles for political dominance, competition over scarce resources, and the defense of cultural or ideological values. As a result, achieving peaceful coexistence within and among nations has become more complex and challenging than ever

before. Nigeria serves as a prime example of a nation deeply affected by persistent and multifaceted conflicts. These conflicts are often rooted in ethnic diversity, religious differences, political rivalries, and economic interests. Historical records indicate that Nigeria experienced numerous ethnic and communal conflicts even before gaining independence; however, the frequency and intensity of these conflicts have escalated dramatically over the past six decades (Adegami & Uche, 2015; Nwankwo, 2015).

The evolution of ethnic conflicts in Nigeria can be traced from internal rivalries

among groups to more overt and violent external confrontations. These conflicts are closely linked to struggles over political power, access to economic resources, land ownership, and socio-cultural dominance (Egbefo & Salihu, 2014). Ethnic and communal violence has had far-reaching consequences on the nation's economic stability, physical infrastructure, and human well-being. Despite numerous interventions by government agencies, community leaders, and private organizations, these conflicts have persisted, often yielding little or no lasting solutions (Joshua, 2017). The diversity inherent in many African states, rather than serving as a source of strength, has frequently manifested as a source of division and conflict, leading to the characterization of Africa as the "Problem Child of the World" (Onuoha, 2012).

Globally, many nations continue to grapple with different forms of conflict, resulting in significant loss of lives, destruction of property, and widespread insecurity. While it is noteworthy that the total number of war-related deaths has declined globally—from over 200,000 annually in the mid-20th century to about 84,000 between 1946 and 2016 (United Nations, 2020)—violent conflicts remain a persistent challenge. These conflicts are increasingly characterized by the involvement of non-state actors such as ethnic militias, insurgent groups, and terrorist organizations. Such groups often operate against state authority, contributing

to widespread destruction, displacement of populations, and breakdown of law and order. Furthermore, violent conflict has been identified as a major driver of terrorism, with over 90% of terrorism-related deaths occurring in countries experiencing ongoing conflict (UN Report, 2020).

In Nigeria, one of the most pressing contemporary conflicts is the recurring clash between farmers and herders, particularly involving cattle rustling and disputes over land use. These conflicts have significantly undermined community security and stability (Aun, 2019). They have also contributed to food insecurity and the displacement of large populations, thereby affecting various sectors, including education. The most prominent of these conflicts involve Fulani pastoralists and farmers from different ethnic backgrounds such as the Zarma, Hausa, and Mawri groups, especially in northern Nigeria. While some disputes within agro-pastoral communities are resolved peacefully through local authorities, others escalate into violent confrontations with devastating consequences (Blench, 2010).

Benue State, located in North-Central Nigeria, has been particularly affected by these conflicts. Historical records reveal that no decade since Nigeria's independence has been free from conflict in Benue State (Aun, 2022). The state has witnessed numerous tragic events stemming from ethnic tensions, political disagreements, and religious differences.

Created in 1976 during the military regime of General Murtala Muhammed, Benue State derives its name from the River Benue, the second-largest river in Nigeria. It shares boundaries with several states, including Nasarawa, Taraba, Kogi, Enugu, Ebonyi, and Cross River, and also has an international border with Cameroon. With a population of over 4.2 million people as recorded in the 2006 census, the state is predominantly agrarian and is widely known as the “food basket of the nation.” Its major ethnic groups include the Tiv, Idoma, and Igede, alongside several minority groups (National Human Development Report, 2018).

Despite its agricultural richness, Benue State has been severely impacted by farmer-herder conflicts, which have disrupted farming activities and threatened livelihoods. One of the most significant consequences of these conflicts is the alarming rise in the number of out-of-school children. Globally, UNESCO (2018) reports that over 258 million children are out of school. In Nigeria, this figure has risen dramatically, reaching approximately 40.8 million, up from earlier estimates of 10 to 20 million (Akinpelu, 2021). Benue State alone accounts for about 603,803 out-of-school children, representing 29% of the affected population, placing it among the top ten states with the highest rates in the country (Akinpelu, 2021).

This situation has been partly attributed to the implementation of the

anti-open grazing law in 2017 by the Benue State House of Assembly. The law, which restricts open grazing by herders, has been met with resistance, leading to increased violence, destruction of property, and loss of lives. These conflicts have disrupted communities, destroyed schools, and forced families to flee their homes, thereby limiting children’s access to education.

The factors contributing to the rise in out-of-school children in Benue State are multifaceted. While the farmer-herder conflict plays a significant role, other contributing factors include poverty, child labor, early marriage, kidnapping, natural disasters, teenage pregnancy, long distances to schools, insecurity, gender inequality, disability, cultural practices, and religious beliefs. These factors collectively create barriers to education, making it difficult for children to enroll in and complete their schooling.

Education remains one of the most effective tools for reducing poverty and inequality in any society. It provides the foundation for sustainable development and economic growth (Domikel & Edward, 2014). Primary education, in particular, is critical as it equips individuals with basic literacy and numeracy skills, which are essential for personal and societal development (Bruns et al., 2003). It is the most accessible level of education globally and serves as the cornerstone for lifelong learning and development.

However, conflict has a direct negative impact on school enrolment, retention, and completion. In areas affected by violence, parents often prioritize the safety of their children over education. In Benue State, particularly in local government areas such as Guma, Logo, and Ukum, school attendance has been severely disrupted due to ongoing conflicts. Many children are forced to relocate, while others are kept at home for safety reasons, leading to low enrolment and high dropout rates (Ololo, 2017).

School enrolment refers to the number of pupils admitted into schools within a given period (Oguche et al., 2016). It is a key indicator of the viability and sustainability of educational institutions. Declining enrolment rates can lead to the closure of schools, particularly in rural areas where resources are already limited. In conflict-affected regions, the situation is even more dire, as existing students withdraw and new admissions decline drastically.

Retention, on the other hand, refers to the ability of schools to keep students enrolled until they complete their education. High retention rates indicate stability, while high attrition rates signal systemic challenges. In Benue State, many parents are forced to transfer their children to safer areas or withdraw them entirely due to insecurity. This disruption not only affects academic progress but also undermines the overall educational system.

Statement of the Problem

The herder-farmer conflict remains one of the localized conflicts that has existed and distorted the peace of people for years in Nigeria, having its source from land resources. Despite many years of efforts to resolve the conflict through corporate social organizations and government mediation, committees of enquiry, law courts, decrees and peace enforcement, the conflict still remains to be resolved. Traditional peaceful coexistence between herders and farmers has recently turned into quarrels and fights, resulting in mistrust and suspicion. Accordingly, both herders and farmers have lived together for decades, with issues bordering land resource amicably resolved. The process of ensuring peace was built on traditional rulers and institutions. The prolonged nature of the conflict and the frequent eruption of violent conflict in this area questioned the state and nature of education in the area. That is, with the conflict, it is possible that the state and nature of education in the area are interrupted, given that families/children are displaced along with their parents or relations and teachers. Despite the use of several indigenous and other methods to resolve the conflict, it remains unresolved, and this is observed to have negative consequences on the basic schools in the Benue state, particularly in areas like Guma, Logo, and Ukum, which serve as the study area.

The peaceful coexistence and harmonious inter-group relations between the herders-farmers in the past have intensified with increasing escalation of violence due to cutthroat competition for land and water resources which are central to the socio-economic survival of both parties. The specific farmers' populated towns and villages with intense herder-farmer conflict include Jootar, Vaase, Ayilamo, Anyiin, Sev-av, Gbajimba, Agasha and Iorza where some schools have been closed permanently while others open only when the conflict subsides. The persistent violent conflicts between farmers and herders in Benue state have led the conflicting parties to acquire arms and recruit ethnic militias for self-defence. The use of sophisticated firearms makes the conflicts more dangerous with the unimaginable destruction of the affected communities, particularly in Anyiin, Ayilamo, Sev-av, Jandekyula, Iorza, Agenke, and Agasha, among others, with the death of about 3,000 people between 2014 and 2018 in all the aforementioned communities.

Accordingly, there are different academic works on conflict and farmer/herder conflict (David, 2010; Blench, 2010; & Nwanko, 2015), but none of these works have focused on the variables of the present study, namely enrolment, retention and completion in Benue state. For instance, David (2010) conducted a study on grading Nigeria's progress in education, where some states,

including Benue were affected by conflict in recent days. Blench (2010) studied pastoralists and cultivators in Nigeria to be broad but not specific to education, and the findings revealed that traditional methods of conflict resolution are more effective. Nwankwo (2015) carried out a study on rhetoric and realities of managing ethno-religious conflict: the Nigerian experience also pointed out consequences of conflict and emphasized that all parties must discourage the primordial sentiments in communities expressed by ethnic and religious groups. However, none of the above studies focused on school enrolment, retention and completion in the Benue state, which is a gap this study intends to fill. This study, therefore, examines enrolment, retention, and completion of basic school pupils over a period of 10 academic sessions in Benue state, using Guma, Logo and Ukum local government areas that have the highest occurrence of herders-farmers conflict in the state.

Purpose of the Study

This study investigated the influence of herder-farmer conflict on pupils' enrolment, retention, and completion of basic education in Benue State, Nigeria. Specifically, the study;

- assessed the influence of herders-farmer conflict on pupils' enrolment in basic education in Benue state, Nigeria.
- examined the influence of herders-farmer conflict on pupils' retention in

basic education in Benue State, Nigeria.

- investigated the influence of herder-farmer conflict on pupils' completion of basic education in Benue State, Nigeria.

Research Questions

This study provided answers to the following questions:

- What is the influence of herders-farmer conflict on pupils' enrolment in basic education in Benue State, Nigeria?
- How does farmer-herder conflict influence pupils' retention in basic schools in Benue State, Nigeria?
- How does herder-farmer conflict affect pupils' completion of basic education in the Benue State, Nigeria?

Methodology

The research design for this study was an ex-post facto design (causal comparative). Bello (2016) sees ex-post facto research as non-experimental research in which pre-existing groups are compared to see whether independent variables have caused a change in the dependent variable. The population of this study comprised 4,486 basic schools in Benue State, Nigeria (UBEC, 2019). Multi-stage sampling procedure was used to sample the population required for this study. A purposive sampling technique was used to select three local government areas, Guma, Logo and Ukum, where conflicts between farmers and herders are

predominant and incessant. There were 438 public primary schools in the three local government areas. Simple random sampling technique was used to select 10 schools from each local government, resulting in a total of 30 schools sampled for the study. The research instrument used in this study was a Proforma. The researcher went to the Benue State Ministry of Education Board to get data on "Pupils' Enrolment, Retention and Completion of Basic Schools in Benue State, Nigeria". The profoma was used to collect year-by-year data for the duration of the study (2012-2021), showing the rate of enrolment, retention and completion of basic education in the state before, during and after the conflict. Based on the information gathered about each of the basic schools from the State Ministry of Education regarding the concerned basic schools. Descriptive statistics were used to analyze the data and the results are presented in tables and graphs for easy interpretation and presentation of the data.

Results

Number of pupils enrolled in Basic schools in Guma, Logo, and Ukum local government areas of Benue State, Nigeria, from 2012/2013-2021/2022.

From the figure, it is evident that the number of basic school pupils' enrolment in Guma, Logo and Ukum fluctuates with the conflicting years. Overall, the conflict affected the enrolment of basic school pupils in 2014, 2018, and 2020, with all

three local governments suffering a significant decline in enrolment in the above-mentioned years.

Number of pupils retained in Basic schools in Guma, Logo, and Ukum local government areas of Benue State, Nigeria, between 2012 / 2013 – 2021 / 2022 Academic Sessions

From the figure above, it can be seen that the retention level fluctuates, especially for the 2014/2015, 2018/2019, and 2020/2021 academic sessions, with the figures decreasing to as low as 2451, 3577 and 2892 respectively.

Number of pupils who completed Basic schools in Guma, Logo and Ukum local government areas of Benue State, Nigeria between 2012/2013—2021/2022

As seen above, the information on the completion of basic schools in the 30 selected basic schools in the three local government areas of Guma, Logo, and Ukum fluctuates at yearly intervals, especially in the conflict persistent years of 2014/2015, 2018/2019, and 2020/2021.

Discussion

The first finding of the study revealed that the number of basic school pupils' enrolment in Benue State decreases in proportion to the conflict severity years, especially in the years 2014/2015, 2018/2019, and 2020/2021. This is in tandem with Aun (2021), who stated that school enrolment depends on certain factors such as availability, accessibility and affordability. This implies that if

there are schools in an area void of conflict, such schools will become inaccessible as the school facilities may be destroyed, burnt down and inhabited by bandits or refugees. This finding also agrees with Avav (2002), Igudia (2018), Pev (2014), Orunoye (2014), and Varella (2020), who found that conflict, be it ethnic, communal, or whatsoever, affects enrolment by causing displacement of learners from their locations that are near the school communities and the schools themselves been shut down temporarily or converted to homes to house displaced citizens.

The second finding of the study revealed that the retention of basic school pupils decreased in line with the years of conflict severity in the study area as was evident in years 2014, 2018 and 2020. This finding corroborates the studies of Alubo (2006), Oguche, Haruna, and Ikanni (2016), Aluaigba (2012;2015), and Akinpelu (2021) who in different studies but with similar findings affirmed that conflict brings untold hardship to people that some have to relocate to nearby cities, withdraw their children or wards to other schools due to fear of the unknown and even if others insist on staying, the schools may not be accessible hence some teachers may have been killed or seek transfer to other schools or locations on the basis of insecurity. That is, some of the pupils who were enrolled in the basic schools in Benue State have left the schools on the basis of insecurity or on

account of losing their sponsors or transfer of parents from the said areas to other locations that are devoid of conflict. In addition, this finding is in agreement with the findings of Shamyekina (2006) and UNECO (2010) that conflict increases the rate of dropouts and reduces academic survival or attainment due to displacement, death, hardship, looking for or engagement in work, joining military or militancy, and other challenges that may accompany the conflict. Accordingly, it is believed that this situation may be applicable to the farmer-herder conflict in the study area of Benue state.

The last finding of the study revealed that the number of basic school pupils who completed basic education in Benue fluctuated, as they dwindled during the years when the conflict was more severe. This finding is in agreement with Bolarinwa, Oluwakemi and Folorunso (2012), Opiki and Adeleke (2015) Shakya (2011) Ukertor (2016) Ololo (2017), and Aun (2020) who stated in separate studies that conflict results to denied or decreased to schools by prevents opening of schools, threatening children's security which led some to refuse to return to school or education, damaging or destroying educational infrastructures, increasing teachers and learners absenteeism, destruction of learning facilities, killing of parents and or teachers, increased poverty rate, dwindled economy, and what have you. These factors contribute

to the inability of pupils to complete their basic education within the stipulated time or throughout their lifetime since some of their sponsors may have been killed or their sources of income or livelihood destroyed. In contrast, this finding contradicts the studies of Miguel and Roland (2016) and Swee (2019), who stated that there was no significant difference in the completion of basic education in Bosnia and Herzegovina and that even the bombed areas were not found to have low levels of literacy but claimed that, this was attributed to aid and resources distributed after the conflict.

Conclusion

This study examined the influence of herders-farmers conflict on pupils' enrolment, retention and completion of basic schools in Benue State, Nigeria. Based on the findings of the study, it was concluded that herders-farmers conflict influences school enrolment, retention and completion as was evident in this study, especially in the persistent years of 2014/2015, 2018/2019, and 2020/2021. The data gathered revealed fluctuating figures on enrolment, retention, and completion in the study area, especially in the three years mentioned above. Some of the schools in the conflict-affected communities shut down, pending the return of peace and normalcy, while others moved to nearby areas, thus not allowing them to access education the way they should. Other areas saw total destruction of their homes and schools as

well as killing their parents or sponsors who made it impossible for them to enroll or become unable to complete their basic education.

Accordingly, it can be deduced or inferred that the herders-farmers conflict in the Benue state, just like every other conflict, has had grave consequences on the enrolment, retention, and completion of basic education of learners, as is evident in the study area. The plethora of studies shown above proved that conflict of whatever form has a negative impact, as was the case with the Benue state of Nigeria for the herder and farmers conflict where houses, schools and school properties, farmlands, and even lives were destroyed, and some teachers sought transfer to other locations.

Recommendations

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

- There should be ways of stopping or reducing the influence of the herders-farmers conflict by the state government by providing a lasting solution to the conflict that has taken a new dimension and is on the verge of poisoning the harmonious and smooth relationship between the herders-farmers in the state through intervention by international communities, federal and the state government as an intermediary so as not to allow the continuous decline in the number of basic school pupils.

- There should be strategies for retaining basic school pupils to ensure they are safe and willing to remain in school, even if they are relocated or moved to refugee camps. Other places where refugees camp during conflict are provided with educational facilities or educational aids to help school-age children not miss out on the teaching-learning process just like their counterparts in the non-conflict areas of the state or the nation at large so that their enrolment would not be affected.
- The pressing issues that always result in conflict should be urgently addressed by the state government and well-meaning individuals to ensure the successful completion of basic education by the basic school pupils who were enrolled and retained, regardless of any situation.

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REIMAGINING AFRICAN HIGHER EDUCATION FOR FINTECH INNOVATION

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Abstract

The rapid growth of the financial technology (fintech) sector has exposed a significant skills gap that African higher education institutions must urgently address. As financial services transition into digital models, there is increasing demand for graduates equipped with both technical expertise and entrepreneurial agility. This article introduces a pedagogical framework grounded in three pillars: integrating digital competence across all disciplines; cultivating an entrepreneurial mindset through experiential and project-based learning; and establishing sustained partnerships among academia, industry, and government. The framework is theoretically anchored in the European Digital Competence Framework (DigComp), Kolb's experiential learning cycle, and effectuation theory from entrepreneurship education. Drawing on a secondary analysis of peer-reviewed mixed-methods research, the article synthesises qualitative and quantitative evidence to assess the current positioning of African higher education institutions and propose concrete directions for repositioning. A central component of this framework is a commitment to digital equity, with particular attention to gender disparities and the structural barriers facing students from under-resourced backgrounds. The article argues that, by prioritising innovation-focused pedagogy over traditional knowledge transmission, African universities can play a pivotal role in enhancing economic resilience across the continent. Limitations of the secondary analysis approach are acknowledged, and directions for future primary research are identified.

Introduction

The intersection of technology and finance represents a critical locus of economic transformation in the twenty-first century, positioning African higher education institutions at the forefront of this disruption. While traditional curricula have left many institutions inadequately prepared, there remains significant potential for responsive reform (Woldegiorgis & Chiramba, 2025). The rapid development of financial technology—encompassing mobile banking, blockchain-based payment

systems, AI-driven credit assessment, and digital insurance platforms—has fundamentally altered the competencies required of graduates in the financial sector. For the purposes of this article, the term "fintech" denotes this constellation of digital financial services, while acknowledging that the taxonomy is contested in the scholarly literature and represents an evolving and partial account of a rapidly developing sector. The traditional separation between finance education and information technology is

increasingly untenable; universities are now required to produce professionals proficient in both domains.

Addressing this challenge requires more than minor curriculum changes. African universities must fundamentally shift from knowledge transmission to fostering analytical flexibility, innovative problem-solving, and an entrepreneurial mindset suited to the fintech sector (Nyongesa & Van Der Westhuizen, 2025; Vorster & Botha, 2025). The continent's young population and widespread use of mobile technology offer a unique opportunity to bypass outdated financial infrastructure and provide a skilled workforce ready to seize the opportunities this transition presents.

This article does not advocate the uncritical adoption of Western pedagogical models. Applying imported frameworks without considering African contexts, resource constraints, and cultural realities is both limiting and ineffective (Arek-Bawa & Reddy, 2024). Balancing local relevance with global competitiveness is essential. Closing the digital skills gap also requires strong industry engagement to ensure that classroom instruction matches and anticipates employer needs (Domingo et al., 2024). Without this alignment, even well-designed curricula may produce graduates who are technically skilled but not professionally prepared.

Crucially, the gender dimension of digital skills gaps in African higher education warrants attention from the

outset. The underrepresentation of women in technology-related programmes—documented across Sub-Saharan Africa (Woldegiorgis & Chiramba, 2025; Domingo et al., 2024)—means that any fintech education framework not explicitly designed with gender equity in mind risks replicating structural exclusions in digital form. Gender-responsive policies must therefore be treated as an architectural feature of reform, not an addendum.

This article is structured as follows: a literature review situates the argument within current academic debates; the methodology section clarifies the secondary analysis approach employed; findings are presented and analysed; and the article concludes with a proposed framework for institutional reform, an acknowledgement of the study's limitations, and specific directions for future research.

Literature Review

The scholarly conversation on reforming African higher education for the digital economy is rich and growing, though unevenly distributed across disciplines and geographic contexts. A notable limitation of the existing evidence base—which this article inherits—is a geographic concentration on South African institutions (Woldegiorgis & Chiramba, 2025; Arek-Bawa & Reddy, 2024; Maimela & Mbonde, 2025; Xulu, 2024). South Africa's institutional context—including its comparatively

developed higher education infrastructure, its distinct post-apartheid equity frameworks, and its regulatory environment—differs substantially from much of West, East, and Central Africa. Where South African evidence is cited in what follows, readers should exercise caution about generalising findings to the broader continental picture; the applicability of these studies to other African contexts remains an open empirical question. The review organises existing scholarship around four key themes: digital competence, experiential learning, industry-academia partnerships, and inclusive access.

Digital Competence as a Cross-Disciplinary Imperative

Scholars have increasingly argued that digital competencies should not be treated as peripheral skills confined to information technology departments, but rather embedded as core instructional outcomes across all disciplines (Arek-Bawa & Reddy, 2024; Domingo et al., 2024). This position reflects a broader recognition that the boundaries between professional domains are dissolving: an accountant who cannot interpret algorithmic credit models, or a marketing professional who lacks data analytics fluency, is increasingly at a disadvantage in contemporary labour markets. Akberdina and Vlasov (2024), in their comparative study of digital education indices across African cities, found considerable disparities in digital

readiness that correlated strongly with institutional investment in technology infrastructure and faculty development—a finding with direct implications for curriculum policy. These findings resonate with the European Digital Competence Framework (DigComp), which provides a principled taxonomy of the digital competences required for full participation in digital societies and which several scholars have proposed as a contextually adaptable reference point for curriculum reform in developing-world university settings (Domingo et al., 2024).

Experiential Learning and Pedagogical Transformation

The pedagogical literature has given considerable attention to experiential learning as a mechanism for bridging the gap between theoretical knowledge and the practical demands of fintech environments. Nyongesa and Van Der Westhuizen (2025) demonstrated that digital teaching tools, when mindfully integrated into higher education curricula, lead to measurable improvements in student participation and educational outcomes. Project-based learning, collaborative digital platforms, and industry-embedded internships have been identified as distinctly effective modalities for fintech education because they replicate the iterative, team-based problem-solving that characterises actual fintech work environments (Vorster & Botha, 2025).

These findings align with Kolb's (1984) experiential learning cycle, in which learning is understood as an iterative process moving through concrete experience, reflective observation, abstract conceptualisation, and active experimentation. Fintech education, with its emphasis on live project environments and industry-embedded internships, maps closely onto the Kolbian model: students encounter real financial technology problems (concrete experience), reflect on what they observe, develop theoretical models, and test them in subsequent project cycles. Curriculum designers wishing to deploy this framework should attend not only to the provision of experiential activities but also to the reflective scaffolding—mentorship, structured debriefing, and formative assessment—that transforms experience into durable learning.

Industry-Academia Partnerships

The role of industry-academia partnerships is well-documented. Liu, Chan, and Chimhundu (2024), in a systematic mapping of fintech research across 518 articles, identified academic institutions' partnerships with fintech firms as one of the most viable avenues for ensuring that educational content remains current and employer-relevant. Croitoru et al. (2025), analysing the linkages between financial literacy and higher education through bibliometric methods, similarly found that partnerships with financial technology

providers enhanced both learner participation and the functional applicability of financial learning programmes. These findings align with Xulu's (2024) argument that digitalisation in African universities cannot be achieved through institutional effort alone—it requires sustained external collaboration.

Qian, Yunus, and Rafiq (2024), in a systematic review of digital innovations in higher education, concluded that meaningful digitalisation requires not only curriculum redesign but also institutional culture change—faculty professional development, leadership commitment, and structural support for interdisciplinary collaboration. This finding aligns with Maimela and Mbonde's (2025) work on artificial intelligence in South African universities, which cautioned that technology adoption without accompanying pedagogical transformation risks becoming superficial. As Liu et al. (2024) note, fintech is not a passing trend, but a structural reorganisation of global financial services; universities that fail to prepare graduates for this reality will leave them unable to participate in the sector's most dynamic opportunities.

Inclusive Access and Digital Equity

On the question of inclusive access, the literature is both clear and urgent. Domingo et al. (2024), in a geopolitical analysis of digital skills cooperation with Africa, found that donor-driven digital skills initiatives too often bypass the most

marginalised communities, reinforcing rather than reducing prevalent inequalities. Woldegiorgis and Chiramba (2025) similarly documented how socioeconomic and communicative barriers continue to limit access to higher education for historically disadvantaged students in South Africa—a pattern broadly indicative of institutional disparities across the continent, though the specific mechanisms differ significantly between national contexts.

The gender dimension of digital exclusion is particularly pronounced. Across Sub-Saharan Africa, women are systematically underrepresented in science, technology, engineering, and mathematics (STEM) programmes and in the technology sector more broadly (Domingo et al., 2024). These structural inequalities are not self-correcting: without deliberate recruitment strategies, mentoring programmes, and financial support mechanisms targeting women, fintech education reform will disproportionately benefit those already advantaged. The implication for the framework proposed in this article is unambiguous: gender-responsive design is not optional.

Critical Assessment of the Literature

While the literature reviewed above provides substantial support for the framework developed in this article, several limitations warrant acknowledgement. First, much of the evidence on student outcomes and

programme effectiveness is drawn from South African settings with specific institutional characteristics that may not obtain elsewhere on the continent. Second, the quantitative studies cited frequently report aggregate findings without disaggregating by gender, socioeconomic status, or geographic context—a methodological limitation that obscures important variation. Third, several studies rely on self-reported outcome measures (e.g., student perceptions of digital competence), which are susceptible to social desirability bias and may not accurately reflect actual capability. Future research should address these gaps through multi-country, longitudinal designs with objective outcome measures.

Methodology

This article is a secondary analysis—also termed an integrative literature review—drawing on peer-reviewed mixed-methods research reports, systematic reviews, and bibliometric analyses published in the core area of fintech education and digital curriculum reform in African higher education. This methodological approach is appropriate to the article's primary aim, which is to synthesise existing evidence in order to propose a theoretically grounded and practically oriented framework for institutional reform, rather than to generate new primary data. Secondary analysis of this kind is a well-established mode of scholarly contribution, particularly where

the aim is to develop generalisable frameworks from a body of primary studies (Pregoner, 2024; Zhang & Browne, 2026).

The principal sources informing this analysis are mixed-methods research reports that integrate qualitative and quantitative approaches to assess how African higher education institutions are currently positioned—and how they might be repositioned—to produce fintech-ready graduates (Pregoner, 2024; Zhang & Browne, 2026). The choice of mixed-methods sources is deliberate: fintech education reform involves both measurable outcomes (enrolment figures, employability rates) and interpretive dimensions (faculty perceptions of pedagogical change, students' lived experiences of digital learning). Neither quantitative nor qualitative methods alone can adequately capture this complexity (Vebrianto et al., 2020).

The qualitative data drawn upon in the reviewed studies was generated through semi-structured interviews and focus group discussions with three categories of participants: academic staff and institutional administrators responsible for curriculum design; students enrolled in business, finance, and technology-related programmes; and representatives of fintech firms and industry associations operating across West and Southern Africa. In the primary studies, these conversations were designed to surface the strengths and weaknesses of existing programmes, to understand how different stakeholders conceptualise the relationship between

education and industry, and to identify the structural and cultural barriers that impede meaningful reform. Interview data were subjected to thematic analysis in accordance with established procedures for qualitative research in educational contexts.

The quantitative data drawn upon was generated through structured survey instruments administered to students across purposively selected samples of African universities with documented commitments to digital education initiatives. Surveys measured self-assessed digital competency, readiness for fintech employment, attitudes toward entrepreneurship, and perceptions of the sufficiency of current curricula. Purposive sampling in the primary studies ensured that samples represented the diversity of African higher education contexts—including institutions in Anglophone and Francophone Africa, public and private universities, and institutions with varying levels of technological infrastructure.

Documentary analysis of university curriculum frameworks, institutional strategic plans, and technology investment policies provided a third layer of evidence in the reviewed studies, enabling assessment of the extent to which institutional commitments to digital transformation were reflected in formal planning documents.

As a secondary analysis, this article is subject to certain methodological constraints that must be acknowledged. Specific quantitative claims reported in the Findings section—including the 75 percent

confidence figure and the 30 percent enrolment increase—derive from findings reported in secondary sources rather than from data collected by this author; they are cited and attributed accordingly. Readers seeking to assess the reliability of these findings are encouraged to consult the primary sources cited. This article does not claim to have conducted independent empirical research; its original contribution lies in the theoretical synthesis, the construction of the three-pillar framework, and the integration of equity and gender considerations into a coherent model for institutional reform.

Results and Findings

The findings drawn from the reviewed literature indicate substantial progress alongside persistent challenges in the reform of African higher education for fintech readiness. The evidence is organised here around three dimensions: pedagogical outcomes, institutional enrolment patterns, digital equity, and the gap between strategic commitment and implementation.

Pedagogical Outcomes

Survey data reported by Arek-Bawa and Reddy (2024), drawn from digitally transformed teacher education programmes in South Africa, indicate that over 75 percent of students enrolled in programmes that integrate theoretical instruction with practical digital applications reported increased confidence in their digital skills. While

this figure is drawn from a South African teacher education context rather than from fintech programmes per se, the finding is consistent with broader evidence from project-based learning research and is cited here as indicative rather than definitive. Students who participated in project-based learning activities using fintech tools to address real-world financial problems demonstrated stronger analytical abilities and higher levels of professional self-efficacy than peers in conventionally instructed courses (Nyongesa & Van Der Westhuizen, 2025; Vorster & Botha, 2025). Faculty members engaged in structured professional development programmes also reported greater confidence in delivering digitally enriched instruction, underscoring that investment in human capital—rather than technology infrastructure alone—is the primary driver of effective change.

Enrolment Patterns

Croitoru et al. (2025), in their bibliometric study of fintech-related higher education, report evidence of a 30 percent increase in enrolment in fintech and digital financial services programmes over recent years at institutions with formal fintech partnerships. While increased enrolment does not guarantee quality outcomes, it reflects a real shift in student demand that institutions are beginning to address. The largest enrolment gains occurred at institutions with formal partnerships with fintech companies, offering students

internships, co-designed curriculum modules, and access to live project environments (Liu et al., 2024; Croitoru et al., 2025). It should be noted that these data were not disaggregated by gender or socioeconomic background in the primary sources; this represents a gap that future research should address.

Digital Equity

Findings on digital equity are concerning. Focus group data from Woldegiorgis and Chiramba (2025) and Domingo et al. (2024) reveal ongoing disparities in access to digital learning tools across geography, gender, and socioeconomic status. Students from rural or under-resourced backgrounds faced consistent challenges with internet connectivity, hardware availability, and technological familiarity. Women students reported specific barriers to participation in technology-intensive programmes, including lack of role models, hostile pedagogical environments, and financial constraints. These findings support Domingo et al.'s (2024) warning that digital skills initiatives may reinforce existing inequalities and emphasise the need to integrate equity—including gender equity—into fintech education reform from the outset rather than treating it as an afterthought.

The Strategy-Implementation Gap

Analysis of institutional strategic plans (Qian et al., 2024; Maimela & Mbonde, 2025) revealed a significant gap

between stated commitments and actual implementation. Although most institutions identified digital transformation as a strategic priority, fewer than half had established dedicated funding streams for technology infrastructure, faculty development, or industry partnerships. This disconnect between commitment and resourcing constitutes a major structural barrier to sustained reform.

Discussion

The findings sustain a set of interrelated arguments about the conditions under which African higher education can successfully re-engineer itself for the fintech era. The discussion organises these arguments around three analytical themes—pedagogy and curriculum, institutional architecture, and systemic equity—before presenting the three-pillar framework that integrates them.

Pedagogy and Curriculum

The evidence is unambiguous on one point: technology adoption without pedagogical transformation is insufficient. Installing digital technologies in classrooms does not produce digitally capable graduates. What produces such graduates is a systematic reconceptualisation of how learning is organised—a move from passive reception of information toward active problem-solving, iterative design, and coordinated inquiry. This is precisely what Kolb's

(1984) experiential learning cycle prescribes, and it is what project-based learning and experiential internship programmes operationalise. These are not merely a pedagogical fashion; they are, as Nyongesa and Van Der Westhuizen (2025) demonstrate, the mechanisms through which fintech competencies are developed.

This has consequences for curriculum design that extend well beyond adding a digital skills module to existing programmes. It requires rethinking the sequencing of learning, the role of assessment, and the relationship between academic knowledge and professional practice. Digital competence must be embedded across all disciplines—not concentrated in a single department, but integrated in finance, economics, law, management, and even the arts and humanities, all of which are touched by the digital transformation of financial services. Akberdina and Vlasov (2024) found that institutions adopting this cross-disciplinary approach produced graduates who were more adaptable and more readily absorbed into fintech work environments than those from narrowly specialist programmes. The DigComp framework provides a practically useful reference for specifying what these cross-disciplinary digital competences should comprise, adapted to specific disciplinary contexts.

Institutional Architecture and Industry Partnerships

Industry-academia partnerships are not supplementary to fintech education; they are

constitutive of it. Without sustained engagement with fintech firms, curriculum designers are reduced to approximating industry requirements, often with a lag of several years. With such engagement, programmes can be designed in genuine consultation with employers, updated in real time as the sector evolves, and supplemented by the live project experience that no classroom simulation can fully replicate (Liu et al., 2024).

Croitoru et al. (2025) demonstrate that the institutions producing the most fintech-ready graduates are those with formal, sustained partnership frameworks—not ad hoc relationships dependent on the enthusiasm of individual faculty members, but institutionally embedded collaborations with clear governance structures, joint objectives, and mutual accountability. Reproducing these structures across African universities will require institutional leadership, policy support, and, in many cases, regulatory reform to enable universities to enter into the contractual arrangements with industry that such partnerships demand.

Systemic Equity and Inclusive Access

A framework that produces fintech-ready graduates from well-resourced urban institutions, while leaving students in under-resourced rural universities without access to the tools or training they need, does not constitute reform—it constitutes the reproduction of privilege in digital form. Woldegiorgis and Chiramba (2025) have documented the depth of these

inequalities in the South African context, and—with due caution about direct extrapolation—the patterns they describe share structural characteristics with institutional disparities documented in West Africa (Domingo et al., 2024) and East Africa (Akberdina & Vlasov, 2024).

The gender dimension deserves particular emphasis. Women's underrepresentation in African STEM and technology fields is not incidental but reflects deeply embedded structural barriers: the absence of female role models in leadership positions, pedagogical environments that marginalise women's participation, and financial constraints that disproportionately affect women students. Addressing these barriers requires gender-responsive policies that actively recruit and support women in fintech-related programmes; targeted mentoring and networking initiatives; and financial aid mechanisms designed to reach students from low-income backgrounds. These are not exclusively educational interventions—they require policy engagement well beyond the limits of individual universities. But universities can and should advocate for such investment, recognising that their own capacity to deliver equitable fintech education depends on the broader ecosystem within which they operate.

The Three-Pillar Framework with a Digital Equity Foundation

Drawing the preceding analysis together, this article proposes a framework for fintech-oriented

curriculum reform in African higher education organised around three interdependent pillars, each grounded in established educational theory, and all built upon a foundational commitment to digital equity.

The first pillar—digital competence integration—draws theoretically on the DigComp framework and holds that digital literacy must be embedded as a core instructional outcome across all disciplines, not confined to technology departments. The second pillar—entrepreneurial mindset cultivation—is anchored in Kolb's experiential learning cycle and effectuation theory (Sarasvathy, 2001), operationalised through project-based learning, hackathons, and industry-embedded internships that replicate the iterative problem-solving of fintech work environments. The third pillar—industry-academia partnership—draws on the systematic evidence of Liu et al. (2024) and Croitoru et al. (2025) and insists on formalised, institutionally embedded partnerships rather than ad hoc collaboration.

Underlying these three pillars is the fourth condition: a non-negotiable commitment to digital equity that refuses to design programmes for those already advantaged while excluding others. This condition is not a fourth pillar in the sense of an optional addition; it is the foundation upon which the entire framework rests. A framework that neglects equity will reproduce inequality at scale, regardless of how well it

performs along the other three dimensions. Gender equity, in particular, must be built into each pillar: digital competence curricula should include content on gender and technology; experiential learning programmes should include structured support for women participants; and industry-academia partnerships should set explicit targets for women's representation.

Conclusion

This article has argued that closing the skills gap between African higher education graduates and the competencies the fintech sector demands requires neither the wholesale adoption of imported models nor the piecemeal addition of digital modules to unchanged curricula. It requires a coherent, integrated framework: digital competencies embedded across all disciplines in accordance with the DigComp framework; experiential learning anchored in Kolb's cycle that connects the classroom to the workplace; and sustained industry-academia partnerships formalised at the institutional level. These three pillars, resting on a non-negotiable foundation of digital equity and explicit attention to gender, constitute the framework this article proposes.

The article's original contribution lies in the theoretical synthesis of this framework, the explicit integration of gender-responsive design as an architectural feature rather than an addendum, and the critical interrogation of the existing evidence base—including its

geographic concentration on South African institutions and its reliance on self-reported outcome measures.

Several limitations of this article must be acknowledged. As a secondary analysis, it is constrained by the scope and quality of the primary studies on which it draws. The evidence base is geographically skewed toward South Africa, and the generalisability of findings to West, East, and Central African contexts remains uncertain. The specific quantitative claims reported in the findings section derive from cited primary sources and should not be read as independent empirical results. Furthermore, the framework proposed is, by design, generalisable; its adaptation to any specific institutional context will require contextual analysis that lies beyond the scope of this article.

The following directions for future research are proposed. First, multi-country, longitudinal studies using objective outcome measures (rather than self-report) are needed to assess the long-term employability and career trajectories of graduates from fintech-integrated programmes. Second, gender-disaggregated analyses of enrolment, completion, and employment outcomes are needed to understand whether equity-focused interventions are achieving their intended effects. Third, comparative studies of institutions that have successfully implemented formal industry-academia partnerships are needed to identify the governance mechanisms and policy conditions that enable such structures to

sustain themselves. Fourth, research on the transferability of South African evidence to Francophone African and East African higher education contexts is a significant gap that deserves dedicated scholarly attention.

The global fintech sector is advancing rapidly. Each graduating cohort lacking digital and entrepreneurial skills represents not only missed individual opportunities but a macroeconomic loss for countries needing a digitally skilled workforce to drive growth and reduce poverty. Closing that gap will require institutional leaders to commit not just in strategic plans but in funding, governance reform, and partnership-building; it will require policymakers to invest in digital infrastructure and equity mechanisms; and it will require industry partners to move from ad hoc engagement to formalised, mutually accountable collaboration. The framework proposed here is a principled starting point for that work—not a finished product, but a scaffold for the sustained institutional effort that genuine reform demands.

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