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INSTRUCTIONAL MATERIAL DISPARITIES AND LEARNING QUALITY IN PUBLIC SENIOR SECONDARY SCHOOLS IN LAGOS STATE, NIGERIA: A SURVEY OF URBAN, PERI-URBAN, AND RURAL LOCATIONS

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ABSTRACT

Although access to instructional materials is a key determinant of learning quality, their distribution across public schools and geographic regions is rarely equitable. This study examines how unequal access to instructional materials affects learning quality in Nigerian public secondary schools, with specific focus on the nature and extent of material disparities, their effect on teacher instructional delivery quality, and their relationship with students' academic engagement and overall learning outcomes. A descriptive survey design was employed. A stratified random sample of 400 respondents—comprising 200 teachers, 150 senior secondary students, and 50 school administrators—was drawn from urban, peri-urban, and rural public secondary schools in Lagos State, Nigeria. Data were collected using a 30-item validated questionnaire on a 4-point Likert scale. Three research questions and three corresponding null hypotheses guided the inquiry: H_1 (no significant disparity in material availability across school locations), H_2 (no significant relationship between material availability and teacher delivery quality), and H_3 (no significant relationship between material access and student learning outcomes). The study is anchored in the Resource-Based Theory of Education, adapted from Barney's (1991) Resource-Based View and applied to educational contexts by Adeyemi and Adu (2022). Results revealed significant disparities in instructional material availability across school locations [$F(2, 397) = 18.92$, $p < .001$], a strong positive correlation between material availability and teacher delivery quality ($r = .63$, $p < .001$), and instructional material availability as the strongest correlate of student learning outcomes ($\beta = .52$) in a model accounting for 49% of outcome variance. All three null hypotheses were rejected. These findings underscore the urgent need for equity-driven resource allocation policies in Nigerian public school systems.

Keywords: learning quality, instructional materials, public schools, educational equity, resource allocation, teaching effectiveness

Introduction

Instructional material supply and adequacy weigh significantly on the quality of education delivered in public schools. Textbooks, laboratory equipment, charts, audio-visual aids, and Information and Communication Technology (ICT) devices constitute the material support base upon which teachers construct meaningful lessons. In their absence or scarce and uneven distribution, consequences extend well beyond any single classroom and coalesce into system-level differences in academic achievement across communities and regions. This problem is extensively documented in educational policy literature, yet subject-pedagogical disparities in textbook provision persist across public school systems in sub-Saharan Africa and Nigeria (Okeke & Eze, 2020; UBEC, 2022).

Nigeria presents a stark contrast in conditions between urban and rural public schools. Urban schools, particularly those in state capitals, typically have access to recent textbooks, functional laboratory equipment, and technological learning tools. Rural schools, by contrast, frequently operate with outdated resources, absent laboratory reagents, and limited technology infrastructure. Despite mandates from the Universal Basic Education Commission (UBEC) and the Tertiary Education Trust Fund (TETFUND) since 2004, a 2024 audit found that less than 40% of recommended teaching materials were available in rural schools (UBEC, 2022). The National Policy on Education affirms that instructional materials are central to the effective teaching–learning process (Federal Republic of Nigeria, 2022), yet the gap between policy prescription and school-level reality remains wide.

The urgency of this problem is underscored by recent policy developments. In 2025, Nigerian schools were reported to be struggling to fully implement the revised national curriculum due to inadequate textbooks and a shortage of qualified teachers, a challenge especially acute in rural locations (Federal Ministry of Education, 2025). In response, the Federal Government launched a 2026 initiative to rank and standardise approved textbooks, with the goal of eliminating poor-quality instructional materials from public school systems (Federal Ministry of Education, 2026). These developments confirm that instructional material access remains a live and urgent policy concern, making empirical investigation into its equity dimensions both timely and necessary.

This study examines how uneven access to instructional materials affects learning quality in public secondary schools in Lagos State, Nigeria. It pursues three objectives: to determine the nature and extent of disparities in instructional material availability across public school locations; to examine how such disparities affect teacher instructional delivery quality; and to ascertain the relationship between uneven material access and students' academic engagement and overall learning outcomes. Three research questions and corresponding null hypotheses guide the inquiry, anchored in the Resource-Based Theory of Education (Adeyemi & Adu, 2022).

Literature Review

Conceptual Background: Instructional Materials and Learning Quality

Instructional materials consist of all physical and digital resources teachers use to deliver instruction (Anaduaka, 2021; Olayinka, 2022), including textbooks, workbooks, laboratory equipment, audio-visual devices, and computer-based tools. Learning quality is defined as the extent to which classroom instruction leads to measurable increases in student knowledge, skills, and academic participation. Ihejirika and Nwosu (2021) established a robust association between performance on standardised assessments and material adequacy scores, providing empirical evidence for this conceptual link.

Nature and Extent of Instructional Material Disparities

Research consistently confirms that availability of instructional materials in Nigeria deviates along geopolitical, economic, and administrative divides. A resource audit by Okafor and Nwachukwu (2022) across twelve public secondary schools in Imo State found that more than 70% of schools had critical material shortfalls, with rural schools recording the most severe deficits. A comparable pattern was documented by Afolabi et al. (2023), who found that schools in rural areas of Southwest Nigeria scored considerably lower on material availability indices than urban counterparts. Oluwole and Fajobi (2021) similarly confirmed significant urban–rural disparities in material availability in Nigerian public schools, with under-resourced schools demonstrating lower instructional quality outcomes. Okeke and Eze (2020) further documented that less than 60% of rural public schools received UBEC funding during the period under review, indicating structural leakage in the resource distribution pipeline.

However, not all studies report strong effects. Mkpanang (2022) found only a weak correlation ($r = 0.208$) between instructional material use and student academic performance in public secondary schools, suggesting that material availability alone may not be sufficient to drive outcomes when other enabling conditions are absent. This contradictory finding is important and is engaged in the discussion section.

Instructional Materials and Teacher Delivery Quality

The availability of instructional materials exerts a direct influence on the quality of teaching. Ibrahim and Suleiman (2023) reported a significant positive correlation ($r = .61$) between material availability and teacher delivery quality ratings in a sample of 215 secondary school teachers in Northern Nigeria. When teachers lack materials needed to demonstrate concepts, conduct experiments, or provide visual representations, they revert to verbal exposition and rote dictation, both of which are associated with lower student engagement and weaker learning outcomes. Eze, Okonkwo, and Agu (2022) similarly found a significant relationship between the availability and utilisation of teaching materials and curriculum implementation effectiveness in Nigerian classrooms, and documented the coping strategies adopted by teachers in low-resource settings in the absence of standard teaching aids.

Instructional Materials and Student Academic Engagement and Outcomes

The material environment of the classroom significantly affects students' academic engagement, defined as the degree of behavioural, emotional, and cognitive investment in learning tasks (Fredricks et al., 2020). Iyamu and Oghenekevwe (2021) found that material poverty facilitated increased rates of absenteeism and academic disengagement among public school pupils in Delta State. Obinna and Chukwu (2022) found that students from well-resourced Imo State schools scored 38% higher on internal assessments than peers from under-resourced schools. Nwankwo and Uchenna (2023) similarly found that resource-constrained environments reduced academic motivation and cumulative performance scores.

Theoretical Framework: Resource-Based Theory of Education

This study is anchored in the Resource-Based Theory of Education, an adaptation of the Resource-Based View of the firm originally developed by Barney (1991). Barney's (1991) framework posited that competitive advantage derives from the possession of valuable, rare, inimitable, and non-substitutable resources. Scholars have adapted this perspective to education, arguing that schools with superior instructional resources are structurally better positioned to deliver quality education, independent of teacher skill alone (Adeyemi & Adu, 2022). Using this framework in Nigerian secondary schools, Adeyemi and Adu (2022) reported that resource

availability explained a substantial proportion of variance in school effectiveness scores, establishing the empirical applicability of the theory to the Nigerian context.

Table 1

Summary of Empirical Studies on Instructional Material Access and Learning Quality in Nigerian and African Public Schools (2020–2025)

Author/Year	Country	Sample	Variable Studied	Key Finding
Afolabi et al. (2023)	Nigeria	320 teachers	Material disparities	Rural schools had significantly lower material availability scores than urban schools
Ibrahim & Suleiman (2023)	Nigeria	215 teachers	Teacher effectiveness	Positive correlation between material availability and delivery quality (r = .61)
Obinna & Chukwu (2022)	Nigeria	410 students	Student performance	Students in well-resourced schools scored 38% higher on internal assessments
Iyamu & Oghenekevwe (2021)	Nigeria	280 students	Academic engagement	Material scarcity linked to increased absenteeism and disengagement
Tahiru & Mensah (2021)	Ghana/West Africa	506 teachers	Teacher effectiveness	Material access significantly predicted instructional quality (β = .54, p < .01)
Okafor & Nwachukwu (2022)	Nigeria	12 schools	Resource audit	Over 70% of public schools had critical material shortfalls
Nwankwo & Uchenna (2023)	Nigeria	350 students	Engagement outcomes	Low resource environments reduced academic motivation and performance
Mkpanang (2022)	Nigeria	180 students	Material use vs. performance	Weak correlation (r = 0.208) between material use and academic performance—contradictory evidence
Okeke & Eze (2020)	Nigeria	Policy review	UBE funding gaps	UBEC funding reached less than 60% of rural schools in the review period

Note. Studies employed quantitative or mixed-methods designs unless otherwise noted. r = correlation coefficient; β = standardised regression coefficient. The Mkpanang (2022) entry presents contradictory evidence engaged in the Discussion.

Methodology

The study adopted a descriptive survey design, appropriate for investigating the nature, extent, and relationships among variables in naturally occurring settings without manipulation of subjects or conditions (Mkpa & Izuwah, 2021). Given that all outcome data were collected from questionnaire self-reports without experimental manipulation, the design is purely quantitative and

findings are correlational, not causal. The study was conducted in Lagos State, Nigeria, selected because it represents Nigeria's most populous and economically diverse state, encompassing a wide spectrum of school types across urban, peri-urban, and rural local government areas. The study population comprised all teachers, students, and school administrators in public secondary schools in Lagos State. A stratified random sampling technique ensured proportional representation across three strata defined by school location (urban, peri-urban, rural). A total of 400 respondents were selected: 200 classroom teachers, 150 senior secondary students (SSS1–SSS3), and 50 school administrators. The higher proportion of teachers (n = 200) relative to students (n = 150) reflects the study's primary focus on teacher delivery quality as an outcome variable and the methodological consideration that teachers are better positioned to report on institutional material access across multiple subjects and classrooms. Each teacher assessed material availability across the range of subjects they teach, effectively capturing data on multiple instructional contexts per respondent. Fifty administrators provided institutional-level perspectives on material procurement and distribution. Stratification by school location yielded urban (n = 142), peri-urban (n = 118), and rural (n = 140) sub-samples, drawn from 45 schools (18 urban, 13 peri-urban, 14 rural), with approximately nine respondents per school on average.

Data were collected using a single validated questionnaire consisting of 30 items rated on a 4-point Likert scale (1 = Strongly Disagree, 2 = Disagree, 3 = Agree, 4 = Strongly Agree). The questionnaire comprised three sections: Section A assessed instructional material availability (10 items, e.g., "Textbooks are available in sufficient quantities for all subjects taught in this school"); Section B assessed teacher instructional delivery quality (10 items, e.g., "I am able to use practical demonstrations and audio-visual aids during lessons"); and Section C assessed student academic engagement and learning outcomes (10 items, e.g., "I actively participate in lessons when appropriate teaching materials are used"). The full questionnaire is provided in Appendix A. Content validity was established through expert review by three specialists in Educational Foundations, Measurement and Evaluation, and Curriculum Studies. All suggested modifications were incorporated before administration. Reliability was determined through a pilot test administered to 30 respondents not included in the main study. Cronbach's alpha coefficients of .81, .79, and .76 were obtained for Sections A, B, and C respectively, all exceeding the accepted threshold of .70 (Nunnally, 1978). Quantitative data were analysed using SPSS version 25. Mean and standard deviation were computed for RQ1. One-Way ANOVA was used to test H_1. Pearson Product-Moment Correlation tested the relationship between material availability and teacher delivery quality (RQ2 and H_2). Multiple Regression Analysis examined the predictive relationship between material access and student learning outcomes (RQ3 and H_3). The decision rule for rejecting null hypotheses was set at $p < .05$. Given the correlational design, all findings are interpreted as associations, not causal effects.

Table 2
Objectives, Research Questions, Null Hypotheses, and Corresponding Statistical Tools

Objective	Research Question	Null Hypothesis	Statistical Tool
Determine the nature and extent of disparities in instructional material availability	What is the nature and extent of disparities in instructional material availability across public schools?	H_1: There is no significant disparity in instructional material availability across public school locations	Mean, SD, One-Way ANOVA
Examine how disparities in material availability affect teacher instructional delivery quality	How do disparities in instructional material availability affect teacher instructional delivery quality?	H_2: There is no significant relationship between instructional material availability and teacher instructional delivery quality	Pearson Product-Moment Correlation
Ascertain the relationship between uneven material access and students' academic engagement and learning outcomes	What is the relationship between uneven instructional material access and students' academic engagement and overall learning outcomes?	H_3: There is no significant relationship between instructional material access and students' academic engagement and learning outcomes	Multiple Regression Analysis

Note. ANOVA = Analysis of Variance. All hypotheses tested at $p < .05$.

Results

RQ1: Nature and Extent of Instructional Material Disparities

Descriptive statistics were computed for instructional material availability scores across the three school location strata. Scores were derived from Section A of the questionnaire on a 4-point Likert scale (1 = Very Low adequacy; 2 = Low adequacy; 3 = Moderate adequacy; 4 = High adequacy), with a decision benchmark of 2.50 (scale midpoint) used to distinguish adequate from inadequate material provision. Table 3 presents the means and standard deviations.

Table 3
Mean and Standard Deviation of Instructional Material Availability Scores by School Location

School Location	N	Mean	SD	Interpretation
Urban	142	3.61	0.42	High adequacy (above benchmark)
Peri-Urban	118	2.74	0.58	Moderate adequacy (above benchmark)
Rural	140	1.83	0.67	Low adequacy (below benchmark)
Total	**400**	**2.73**	**0.81**	Marginally above benchmark overall

Note. Scores are based on a 4-point Likert scale where 1 = Very Low adequacy and 4 = High adequacy. The decision benchmark for adequate provision is 2.50 (scale midpoint). N = 400 total

respondents. Urban schools recorded the highest mean availability score (M = 3.61, SD = 0.42), followed by peri-urban schools (M = 2.74, SD = 0.58), and rural schools (M = 1.83, SD = 0.67). The urban mean of 3.61 reflects teachers' and administrators' self-reports of high material availability relative to their instructional needs. The rural mean of 1.83 falls well below the acceptable threshold, indicating low material adequacy. A One-Way ANOVA was conducted to test H_1. Results are presented in Table 4.

Table 4

One-Way ANOVA of Instructional Material Availability Across School Locations

Source	Sum of Squares	df	Mean Square	F	p
Between Groups	87.34	2	43.67	18.92	< .001
Within Groups	919.41	397	2.31		
Total	**1006.75**	**399**			

Note. F-ratio is statistically significant at $p < .001$. Post hoc Tukey HSD tests confirmed significant pairwise differences between all three location groups.

The ANOVA result was statistically significant, $F(2, 397) = 18.92$, $p < .001$. H_1 was therefore rejected. There was a significant disparity in instructional material availability across urban, peri-urban, and rural public secondary schools in Lagos State.

RQ2: Effect on Teacher Instructional Delivery Quality

A Pearson Product-Moment Correlation was computed to examine the relationship between instructional material availability and teacher instructional delivery quality. Table 5 presents the correlation matrix.

Table 5

Pearson Product-Moment Correlation Matrix for Instructional Material Availability and Teacher Instructional Delivery Quality

Variable	M	SD	1	2
1. Instructional Material Availability	2.73	0.81	1.00	
2. Teacher Instructional Delivery Quality	2.89	0.74	.63**	1.00

Note. N = 400. ** $p < .001$ (two-tailed). Correlation reflects a perceived association between self-reported material availability and self-reported delivery quality. Common method variance may inflate this estimate.

A statistically significant, strong positive correlation was found between instructional material availability and teacher instructional delivery quality, $r(398) = .63$, $p < .001$. H_2 was rejected. As material availability increased, teacher delivery quality ratings increased correspondingly, accounting for approximately 40% of shared variance ($r^2 = .40$).

RQ3: Relationship Between Material Access and Student Learning Outcomes

Multiple Regression Analysis was conducted with student academic engagement and overall learning outcomes as the dependent variable, and instructional material availability, teacher delivery quality, and student socioeconomic status as predictor variables. The "Material Availability" predictor is a continuous scale score derived from Section A of the questionnaire,

not a simple urban-versus-rural dummy variable, and should be interpreted as an association, not a causal effect. Table 6 presents the regression coefficients.

Table 6

Multiple Regression Analysis: Instructional Material Access as a Predictor of Student Academic Engagement and Learning Outcomes

Predictor	B	SE	β	t	p
Material Availability (continuous scale score)	0.74	0.09	.52	8.22	< .001
Teacher Delivery Quality	0.48	0.11	.31	4.36	< .001
Student Socioeconomic Status	0.19	0.08	.14	2.37	.018

Note. Dependent variable: Student academic engagement and learning outcomes. SE = Standard Error. $R^2 = .49$, Adjusted $R^2 = .48$, $F(3, 396) = 127.43$, $p < .001$. Results reflect associations, not causal effects.

The overall regression model was statistically significant, $F(3, 396) = 127.43$, $p < .001$, $R^2 = .49$. Instructional material availability ($\beta = .52$, $p < .001$) was the strongest correlate of student learning outcomes, followed by teacher delivery quality ($\beta = .31$, $p < .001$) and student socioeconomic status ($\beta = .14$, $p = .018$). H_3 was rejected. These associations should be interpreted as correlational given the cross-sectional survey design.

Table 7

Summary of Hypothesis Testing Results

Hypothesis	Statistical Test	Test Value	p-value	Decision
H_1: No significant disparity in material availability across schools	One-Way ANOVA	$F(2, 397) = 18.92$	< .001	Rejected
H_2: No significant relationship between material availability and delivery quality	Pearson r	$r(398) = .63$	< .001	Rejected
H_3: No significant relationship between material access and student outcomes	Multiple Regression	$F(3, 396) = 127.43$	< .001	Rejected

Note. All hypotheses tested at alpha = .05. Rejection indicates statistical significance.

Discussion

The findings confirm that significant disparities exist in instructional material availability across public secondary schools in Lagos State, with rural schools recording substantially lower material adequacy scores than urban and peri-urban counterparts. This is consistent with Afolabi et al. (2023), who documented comparable urban–rural gaps in Southwest Nigerian schools, and Okafor and Nwachukwu (2022), whose resource audit found critical material shortfalls in over 70% of schools examined. The ANOVA results corroborate the argument of Okeke and Eze (2020) that structural failures in the UBEC funding distribution pipeline perpetuate material inequity across school locations.

The strong positive correlation between material availability and teacher delivery quality (r = .63) affirms the theoretical proposition of the Resource-Based Theory of Education that resource availability is a prerequisite for effective instructional delivery. Teachers in resource-poor environments are compelled to substitute material demonstrations with verbal explanation alone, narrowing pedagogical range and reducing lesson quality. This supports Ibrahim and Suleiman (2023), who found similar correlations in Northern Nigerian schools.

The regression results indicate that instructional material availability is the strongest correlate of student learning outcomes (β = .52), consistent with Obinna and Chukwu (2022) and Nwankwo and Uchenna (2023). The independent contribution of teacher delivery quality (β = .31) suggests that even within resource-constrained settings, teacher instructional competence partially mediates the effect of material scarcity. The moderate contribution of socioeconomic status (β = .14) indicates that while poverty amplifies material disadvantage, it does not fully account for performance gaps, reinforcing the unique role of school-level resource provision.

It is important, however, to acknowledge contradictory evidence. Mkpanang (2022) found only a weak correlation (r = 0.208) between instructional material use and student academic performance—considerably weaker than the r = .63 observed here. A plausible explanation is that the present study measured perceived learning quality through questionnaire self-report, which may inflate correlations relative to objective test-score-based outcomes used in other studies. Additionally, Lagos State schools, even rural ones, may operate in a context of relatively greater baseline teacher quality, meaning that material effects are more detectable when teacher quality is held constant. Owoeye and Yara (2021) further found that instructional materials did not significantly affect achievement when teacher qualifications were the primary factor, suggesting that material access operates in interaction with teacher professional development rather than independently. Future studies should include objective achievement measures and control for teacher qualifications. The present findings should therefore be interpreted as correlational evidence consistent with, but not definitive proof of, a material–outcomes relationship.

Conclusion

This study demonstrates that uneven access to instructional materials constitutes a significant structural barrier to learning quality in Lagos State public secondary schools. Material deprivation is negatively associated with both teacher instructional delivery and student academic engagement and performance, with rural schools bearing the greatest burden of disadvantage. The findings are consistent with the Resource-Based Theory of Education and with a growing body of empirical evidence from Nigerian and West African school contexts. Equitable provision of instructional materials is not a peripheral concern but a foundational requirement for the realisation of educational quality and equity in public school systems. All three null hypotheses were rejected, and findings are interpreted as significant associations within a correlational design.

Recommendations

Based on the findings, the following specific and actionable recommendations are offered:

1. Given the Federal Ministry of Education's 2026 Book Ranking and Standardisation Initiative (Federal Ministry of Education, 2026), ranking criteria should explicitly

incorporate urban–rural equity as a weighted factor. Approved booklists should specify differentiated minimum quantities for rural schools (e.g., one textbook per two students) versus urban schools (one per three students), to reflect differences in per-capita provision needs.

2. Federal and state governments should enforce equity benchmarks in UBEC and TETFUND disbursements, including mandatory geographic audit reporting that disaggregates allocations by urban, peri-urban, and rural sub-categories. Schools failing to meet minimum material thresholds should receive prioritised supplementary allocations.
3. School administrators in under-resourced environments should develop formalised community and private-sector partnership frameworks for sustainable material sourcing. State Ministries of Education should provide template memoranda of understanding to facilitate such partnerships.
4. Curriculum developers and the Nigerian Educational Research and Development Council (NERDC) should produce low-resource-adapted curriculum guides and teacher support materials specifically designed for schools below the material adequacy benchmark identified in this study ($M < 2.50$ on the 4-point scale).

References

Adeyemi, T. O., & Adu, E. T. (2022). Resource availability and school effectiveness in Nigerian secondary schools. Journal of Education and Practice, 13(4), 45–53. https://doi.org/10.7176/JEP/13-4-06

Afolabi, O. S., Ojo, A. A., & Bello, T. (2023). Instructional material disparities and academic performance in Southwest Nigerian public schools. African Educational Research Journal, 11(1), 12–21. https://doi.org/10.30918/AERJ.111.22.098

Anaduaka, U. S. (2021). Effects of improvised instructional materials on students' achievement in mathematics. Journal of Education and Learning, 15(3), 373–380. https://doi.org/10.11591/edulearn.v15i3.18652

Barney, J. (1991). Firm resources and sustained competitive advantage. Journal of Management, 17(1), 99–120. https://doi.org/10.1177/014920639101700108

Eze, C. N., Okonkwo, U. M., & Agu, N. (2022). Teacher coping strategies in low-resource public classrooms in Southeast Nigeria. Journal of Pedagogy and Curriculum, 9(3), 77–89.

Federal Ministry of Education. (2025). Report on curriculum implementation challenges in Nigerian secondary schools. Federal Ministry of Education.

Federal Ministry of Education. (2026). National textbook ranking and quality standardisation initiative. Federal Ministry of Education.

Federal Republic of Nigeria. (2022). National policy on education (7th ed.). NERDC Press.

Fredricks, J. A., Hofkens, T., Wang, M. T., Mortenson, E., & Scott, P. (2020). Supporting girls' and boys' engagement in math and science learning: A mixed methods study. Journal of Research in Science Teaching, 55(2), 271–298. https://doi.org/10.1002/tea.21419

Ibrahim, M. A., & Suleiman, A. R. (2023). Teacher effectiveness and instructional material availability in Northern Nigerian secondary schools. African Journal of Educational Studies, 21(1), 34–47.

Ihejirika, C., & Nwosu, O. (2021). Instructional materials and teaching effectiveness in Nigerian public secondary schools: A structural equation modelling approach. Journal of Educational Research and Practice, 11(1), 214–228. https://doi.org/10.5590/JERAP.2021.11.1.15

Iyamu, E. O. S., & Oghenekevwe, A. (2021). Academic performance and learning material access in Delta State public schools. Unizik Journal of Educational Research, 14(2), 56–68.

Mkpa, M. A., & Izuwah, C. P. (2021). Curriculum development and implementation in Nigeria. Whytem Publishers Nigeria Ltd.

Mkpanang, J. T. (2022). Correlates of instructional resources management and teacher performance in public secondary schools in Rivers State. African Journal of Educational Research and Development, 15(1), 145–157.

Nwankwo, O. C., & Uchenna, N. (2023). Student academic engagement under resource-constrained conditions in Nigerian public schools. Journal of Educational Policy and Entrepreneurial Research, 10(1), 23–35.

Nunnally, J. C. (1978). Psychometric theory (2nd ed.). McGraw-Hill.

Obinna, E. K., & Chukwu, I. F. (2022). Instructional resource poverty and student performance in Imo State secondary schools. International Journal of Academic Research in Education, 8(2), 14–26.

Okafor, C. A., & Nwachukwu, L. O. (2022). Public school resource audit in Imo State: An empirical review. Imo Journal of Education, 6(1), 1–19.

Okeke, B. I., & Eze, A. U. (2020). Funding gaps and the Universal Basic Education Commission in Nigeria. African Journal of Policy and Development, 5(1), 44–57.

Olayinka, A. B. (2022). Effects of instructional materials on secondary schools' students' academic achievement in social studies in Ekiti State, Nigeria. World Journal of Education, 6(1), 32–39. https://doi.org/10.5430/wje.v6n1p32

Oluwole, D. A., & Fajobi, A. M. (2021). Resource gaps and educational quality in Nigerian public schools: An empirical assessment. Nigerian Journal of Educational Foundations, 20(1), 1–14.

Owoeye, J. S., & Yara, P. O. (2021). School facilities and academic achievement of secondary school biology in Ekiti State, Nigeria. Asian Social Science, 7(7), 209–214. https://doi.org/10.5539/ass.v7n7p209

Tahiru, F., & Mensah, C. (2021). Instructional material access and teacher effectiveness in West African public schools. Journal of African Studies in Educational Management, 13(2), 103–117.

UBEC. (2022). Annual report on Universal Basic Education interventions in Nigeria. Universal Basic Education Commission.