

Empirical Paper

Unlocking Student Achievement: A Structural Analysis of Educational Cost, Teacher Competence, and Learning Outcomes in Lagos Private Schools

Yetunde Funmilola Dada^{1*}, Lateefat Oludare Yahya¹

Affiliations

¹Department of Educational Management, Lagos State University, Ojo, Nigeria

ORCID Identifiers

Yetunde Funmilola Dada
0009-0000-7411-5116

Abstract

Purpose: This study examined how educational cost and teacher professional competence influence learning outcomes in private junior secondary schools in Lagos State, Nigeria. It addresses the concern that high parental spending in private schools does not always produce stronger academic performance, highlighting the need to understand how teacher competence shapes this relationship.

Methodology: A correlational descriptive survey design was employed, drawing on Human Capital Theory and Rational Choice Theory. The sample consisted of 300 teachers and administrators selected from 30 private schools across six educational districts using stratified random sampling. Data were collected through the Educational Cost and Competence Questionnaire and Basic Education Certificate Examination results from 2021 to 2023. Descriptive statistics, Pearson correlation, multiple regression, and path analysis were used.

Results: Findings showed strong positive correlations among educational cost, teacher competence, and learning outcomes. Educational cost and teacher competence jointly explained 62.6% of the variance in student performance. Path analysis confirmed a partial mediation effect, demonstrating that financial investment improves learning outcomes more effectively when it enhances teacher professionalism and instructional quality.

Novelty and Contribution: The study provides new empirical evidence showing that educational spending affects achievement both directly and through teacher competence. By linking resource allocation with human capital development, the study extends theoretical understanding of how school finances translate into academic results in developing economies.

Practical and Social Implications: The study highlights the need for private schools to prioritize strategic resource allocation, continuous professional development, and performance-based incentives. The findings guide school managers, policymakers, and parents by showing that improved learning outcomes depend not only on financial investment but also on strengthening teacher competence as a central driver of educational quality.

Keywords: Educational cost, teacher professional competence, learning outcomes, private schools, economics of education

*Corresponding author

E-mail address: ylola2007@gmail.com

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1 Introduction

Oluwatayo et al. (2023) affirm that education remains a critical instrument for strengthening a nation's human capital and advancing socio-economic development. As global policy discussions continue to emphasize the importance of effective service delivery in education, concerns about student achievement persist among educators, parents, and policymakers. In Nigeria, the rising demand for private schooling has intensified attention on the key factors that truly drive learning performance. Consequently, understanding how educational costs and teacher competence influence learning outcomes has become essential for improving practices and enhancing student achievement in Lagos private schools.

In contemporary knowledge-driven economies, investment in education directly shapes the quality of a nation's human capital, productivity, and socio-economic advancement (Kousar et al., 2023). Within the school system, the quality of learning outcomes is strongly shaped by the interplay between financial investment and teacher competence. In Nigeria particularly in Lagos State, where private schools increasingly compensate for weaknesses in the public system, the cost of education has emerged as a major determinant of school quality and student performance (Surur et al., 2020).

The private school landscape in Lagos is highly diverse, marked by significant differences in financial capacity, teacher qualifications, instructional quality, and overall learning environments. Although higher educational costs often signal increased investment in infrastructure or teacher remuneration, evidence shows that cost alone does not guarantee improved learning outcomes (Angrist et al., 2023). Teacher professional competence encompassing pedagogical knowledge, subject mastery, instructional skills, and ethical practice play a central role in determining instructional quality and student progress (Nisah et al., 2023). When teacher competence is inadequate, even substantial financial investment may fail to translate into meaningful gains in student achievement (Ekaette & Charles, 2019).

Despite the rapid proliferation of private schools and increasing parental spending on education in Lagos State, student performance in external examinations such as the Basic Education Certificate Examination (BECE) remains uneven and unpredictable (Garba et al., 2024). Many parents assume that higher school fees automatically equate to higher educational quality; however, research indicates that without competent teachers, financial investment produces limited returns (Babalola, 2019; Bamidele, 2024). In numerous private schools, cost-saving strategies have led to the recruitment of underqualified or inexperienced teachers as a means of reducing operational expenses (Adebayo, 2022). Such practices compromise instructional quality, weaken learning outcomes, and raise questions about the overall value of educational investment for families.

These concerns underscore a critical gap in understanding how educational cost interacts with teacher professional competence to shape learning outcomes in private junior secondary schools in Lagos State. Addressing this gap is essential for improving school accountability, guiding parents in making informed choices, and supporting evidence-based education policy. Accordingly, this study investigates the relationship between educational costs, teacher professional competence, and learning outcomes in private junior secondary schools in Lagos State. Specifically, the study aims to:

- i. Examine how educational costs influence students' learning outcomes;
- ii. Determine the extent to which teacher professional competence contributes to academic performance;
- iii. Assess the combined effect of educational cost and teacher competence on students' overall achievement; and
- iv. Explore whether teacher professional competence mediates the relationship between educational cost and learning outcomes.

These objectives collectively guide the formulation of the research questions and provide a framework for understanding the complex dynamics shaping educational quality in Lagos State's private school sector.

Research Questions

- i. Does educational cost influence learning outcomes in private junior secondary schools?
- ii. Does teacher professional competence affect students' learning outcomes?

- iii. Does the combined effect of educational cost and teacher professional competence affect students' academic achievement?
- iv. Does teacher competence mediate the relationship between educational cost and learning outcomes?

Research Hypotheses

- H₀₁: There is no significant relationship between educational cost and learning outcomes in private junior secondary schools in Lagos State.
- H₀₂: There is no significant relationship between teacher professional competence and learning outcomes.
- H₀₃: Educational cost and teacher professional competence do not jointly predict students' learning outcomes.
- H₀₄: Teacher professional competence does not mediate the relationship between educational cost and learning outcomes.

2 Literature Review

This study is anchored on Human Capital Theory (HCT) (Schultz, 1961) and Rational Choice Theory (RCT) (Homans, 1961), which together provide a robust framework for understanding the relationship between educational investment, teacher competence, and student learning outcomes.

Human Capital Theory conceptualizes education as an investment that enhances an individual's productivity and economic potential. Schultz (1961) argued that expenditures on education—including tuition, learning materials, teacher training, and infrastructure—contribute to the accumulation of knowledge, skills, and competencies, ultimately improving labor market outcomes and broader socio-economic development. Becker (1993) further emphasized that both formal education and on-the-job training enhance human capital, leading to higher productivity and societal welfare. In the context of this study, expenditure on teacher professional competence represents a strategic investment with long-term educational benefits.

Rational Choice Theory complements HCT by providing a behavioral perspective on educational decision-making. According to Homans (1961), individuals make choices based on a cost-benefit analysis, pursuing actions that maximize utility. In education, this translates to students, parents, and schools making strategic decisions about resource allocation, such as investing in teacher development and learning materials, with the expectation of optimizing academic outcomes and future socio-economic returns (Ugur, 2019). The interplay of these theories highlights that both cost efficiency and teacher quality jointly determine student success.

Key concepts in this study include educational cost, teacher competence, and learning outcomes. Educational cost refers to all financial resources expended on schooling, including tuition, instructional materials, teacher salaries, and facilities (Glover & Levacic, 2020). Cost efficiency implies achieving maximum learning outcomes with optimal resource utilization (Hollands & Levin, 2017). Teacher competence encompasses subject expertise, pedagogical skills, classroom management, and ongoing professional development, which directly influence student motivation, engagement, and achievement (Darling-Hammond, 2017; UNESCO, 2020; Bamidele, 2024). Learning outcomes are measurable indicators of student knowledge and skills; in this study, they are operationalized through BECE results in core subjects such as English Language and Mathematics (Odeyemi, 2023).

Empirical studies reinforce the relevance of these concepts. In Nigerian private schools, financial investment in facilities and qualified teachers significantly improves student performance (Akinboboye et al., 2025). Ajiboye (2022) similarly found that schools with qualified teachers achieved higher academic results due to effective pedagogy. However, high expenditure without accountability can lead to inefficiency (Babalola, 2019). Odeyemi (2023) demonstrated that while parental expenditure contributes to quality learning, teacher professional competence remains the most consistent predictor of student success. International evidence also supports this synergy: sustained investment in teacher development correlates with improved student outcomes (Darling-Hammond, 2017; OECD, 2019). Thus, optimizing learning achievements requires the combined effects of financial commitment and teacher competence.

Conceptual Framework

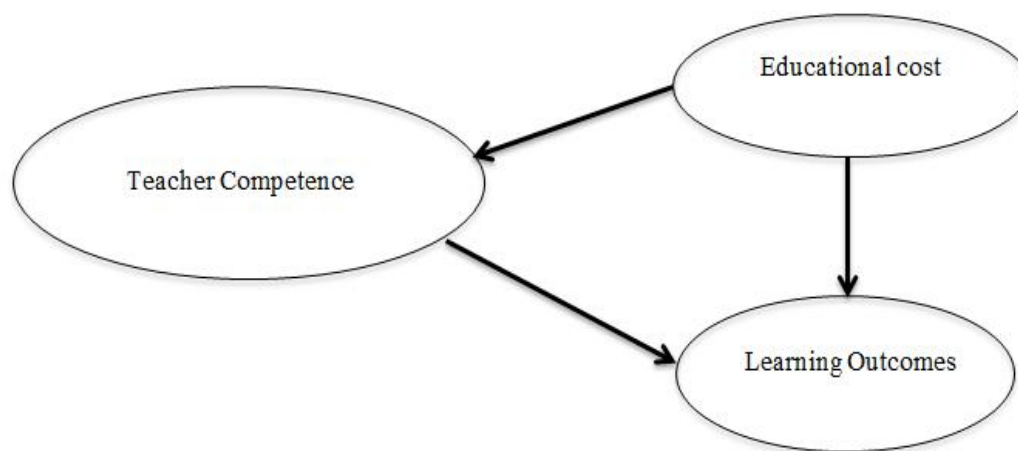


Figure 1 Conceptual Framework

Figure 1 illustrates the conceptual framework showing how educational costs and teacher professional competence jointly influence learning outcomes in private junior secondary schools in Lagos State. Educational cost supports student achievement by enabling the provision of adequate and high-quality learning resources, while teacher professional competence enhances instructional delivery and classroom effectiveness. Empirical evidence affirms this dual influence: Odeyemi (2023) found that although parental and school expenditure contributes to improved learning, teacher competence remains the strongest and most consistent predictor of student success. International research echoes this pattern, with sustained investment in teacher professional development shown to significantly improve student outcomes (Darling-Hammond, 2017).

The frame work further proposes that the combined effect of educational cost and teacher competence is more transformative than their independent impacts. High expenditure without competent teachers results in inefficient resource utilisation, whereas competent teachers operating without adequate resources face instructional constraints. This interaction effect provides a more comprehensive explanation for variations in student performance across private schools. Teacher competence is especially central, as teachers consistently emerge as the most influential school-based factor in student achievement (Stronge, 2018). Recent findings by Nadeem et al. (2025) further reinforce this view by identifying teacher qualifications and competencies as key predictors of enhanced academic outcomes.

3 Methodology

This study will adopt a correlational descriptive survey design to examine the relationships among educational cost, teacher professional competence, and learning outcomes in private junior secondary schools in Lagos State. The design was considered appropriate because it allowed the variables to be examined as they naturally occur without manipulation, and enabled the determination of the magnitude, direction, and predictive strength of their associations. The population will consist of all private junior secondary schools across the six education districts of Lagos State, including teachers and school administrators involved in curriculum implementation and school management. A stratified random sampling technique will be used to ensure adequate representation from all districts, resulting in the selection of 30 private schools. From each school, 10 teachers or administrators will be randomly chosen, giving a total sample size of 300 respondents, which will be deemed adequate for multivariate analysis based on recommended standards of 10–20 participants per variable. Data will be collected using two instruments: the Educational Cost and Competence Questionnaire (ECCQ) and students' Basic Education Certificate Examination (BECE) results for the 2021–2023 academic sessions. To ensure validity, the ECCQ will be reviewed by three experts in educational management and measurement, who will assess item clarity, relevance, and alignment

with the study constructs, and their recommendations will be incorporated into the final instrument. Reliability will be established through established using Cronbach's Alpha (≥ 0.75).

Ethical approval and permissions will be obtained from relevant authorities, and the instruments will be administered personally by the researchers and trained assistants to ensure clarity and maximise the response rate. Respondents will be assured of confidentiality, informed of their rights, and encouraged to participate voluntarily. BECE results will be retrieved from official school academic records under strict confidentiality procedures. Data analysis will be conducted using SPSS Version 25. Descriptive statistics, including means, standard deviations, and score ranges, will be used in summarising the levels of the key variables. Pearson Product-Moment correlation will be employed to determine the direction and strength of the relationships among educational cost, teacher competence, and learning outcomes. Multiple regression analysis will also be used to examine the combined and relative contributions of educational cost and teacher professional competence to predicting learning outcomes. Additionally, path analysis will be conducted to determine whether teacher competence mediated the effect of educational cost on learning outcomes, using the Baron and Kenny mediation framework and the Sobel test to assess the significance of the indirect effect. All hypotheses will be tested at the .05 significance level.

4 Result

Descriptive Statistics

Table 1 presents the mean and standard deviation of the major variables of the study: educational cost, teacher professional competence, and learning outcomes.

Variable	N	Mean (\bar{x})	Std. Deviation	Minimum	Maximum
Educational Cost	300	72.45	10.26	50.00	95.00
Teacher Professional Competence	300	68.32	8.41	45.00	90.00
Learning Outcomes (BECE Scores)	300	70.28	9.18	48.00	93.00

Source Researchers' Computation

Table 1 presents the means, standard deviations, and score ranges for educational cost, teacher professional competence, and learning outcomes. The results show moderate to high levels on all three variables across the sampled private junior secondary schools ($M = 72.45$, $SD = 10.26$ for educational cost; $M = 68.32$, $SD = 8.41$ for teacher competence; $M = 70.28$, $SD = 9.18$ for learning outcomes). The relatively low standard deviations suggest minimal dispersion, implying consistency across respondents.

Correlation Matrix

Table 2 Pearson Product-Moment Correlation Matrix

Variables	Educational Cost	Teacher Competence	Learning Outcomes
Educational Cost	1	0.612**	0.715**
Teacher Competence	0.612**	1	0.688**
Learning Outcomes	0.715**	0.688**	1

Note: $p < 0.01$ (2-tailed)

Source Researchers' Computation

The correlation results reveal strong, positive, and statistically significant relationships among the three variables. Educational cost is most strongly correlated with learning outcomes ($r = 0.715$), followed by teacher competence (r

= 0.688). This implies that as schools invest more in education and teaching quality, students' academic performance tends to improve correspondingly.

Regression Analysis

Table 3 Multiple Regression Summary — Predicting Learning Outcomes from Educational Cost and Teacher Competence

Model	R	R ²	Adjusted R ²	Std. Error	F	Sig.
1	0.791	0.626	0.623	5.647	125.38	0.000

Coefficients Table

Predictor	B	Std. Error	Beta (β)	T	Sig.
Constant	15.214	3.274	—	4.65	0.000
Educational Cost	0.458	0.061	0.512	7.51	0.000
Teacher Competence	0.376	0.074	0.434	6.23	0.000

Source Researchers' Computation

The regression results show that both educational cost and teacher professional competence significantly predict students' learning outcomes ($R^2 = 0.626$, $p < 0.001$). This means that 62.6% of the variance in learning outcomes can be explained by the two predictors. Educational cost has a slightly stronger effect ($\beta = 0.512$) compared to teacher competence ($\beta = 0.434$), suggesting that financial investment remains crucial, though teacher quality also contributes significantly.

Mediation (Path) Analysis

To determine whether teacher professional competence mediates the relationship between educational cost and learning outcomes, a simple path model was constructed.

Table 4 Path Coefficients and Indirect Effects

Path	Standardised Coefficient (β)	t	Sig.
Educational Cost → Teacher Competence	0.612	8.43	0.000
Teacher Competence → Learning Outcomes	0.417	6.29	0.000
Educational Cost → Learning Outcomes (direct)	0.458	7.11	0.000
Indirect Effect (Mediated through Teacher Competence)	0.255	Sobel z = 4.27	0.000

Source Researchers' Computation

The results in the table show how educational cost, teacher competence, and learning outcomes are connected within the study's structural model. First, the findings reveal that educational cost has a strong and significant positive effect on teacher competence ($\beta = 0.612$, $t = 8.43$, $p = 0.000$), indicating that schools that invest more financially through better facilities, teacher training, or improved working conditions tend to have more competent teachers. The analysis also shows that teacher competence significantly influences learning outcomes ($\beta = 0.417$, $t = 6.29$, $p = 0.000$), suggesting that students perform better academically when taught by well-qualified and skilled teachers. Additionally, educational cost has a direct and significant impact on learning outcomes ($\beta = 0.458$, $t = 7.11$, $p = 0.000$), meaning that increased financial investment enhances student performance even without considering

teacher competence. However, the model further reveals a significant indirect effect of educational cost on learning outcomes through teacher competence ($\beta = 0.255$, Sobel $z = 4.27$, $p = 0.000$), confirming that teacher competence mediates this relationship. This implies that part of the positive effect of educational investment on student achievement occurs because increased spending improves teacher competence, which in turn enhances learning outcomes. Overall, the results support a partial mediation model, where educational cost influences learning outcomes both directly and indirectly through teacher competence.

5 Discussion of Findings

The findings of this study provide empirical support for the theoretical foundations of both Human Capital Theory (Schultz, 1961) and Rational Choice Theory (Homans, 1961), highlighting the critical role of financial investment and strategic decision-making in education. The strong positive correlation between educational cost and learning outcomes aligns with prior studies (Akinboboye et al., 2025; Fasanya, 2012; Majid, 2023), indicating that higher financial investment in education improves instructional quality and student performance. Specifically, the study suggests that increased parental expenditure on education is associated with better academic outcomes, although this contrasts with Antle (2019), who found no significant relationship between institutional expenditure and student learning outcomes.

Crucially, the study highlights the mediating role of teacher professional competence in transforming financial inputs into tangible educational success. This finding corroborates earlier work by Darling-Hammond (2017) and Bamidele (2024) who emphasized that teacher effectiveness is central to translating resources into measurable outcomes. Schools that allocate adequate budgets for teacher training, remuneration, and classroom resources tend to achieve higher student outcomes. Supporting this, Nadeem et al. (2025) identified teacher qualifications and competencies as key determinants of improved academic performance, while Mardiana et al. (2025) similarly emphasized the positive association between teacher competence and student performance, though they did not explore its interaction with educational costs. Suryana (2018) further noted that financing initiatives aimed at enhancing teacher competencies positively contribute to learning outcomes, with a medium effect size (0.275), suggesting that teacher competence partially mediates the relationship between educational costs and student achievement. When combined with expenditures on learning media, the overall contribution to learning outcomes rises to 0.576, reflecting a medium level of effectiveness.

However, consistent with Fauth et al. (2019), the findings underscore that teacher competence alone does not automatically convert educational resources into improved student outcomes. Instead, competence—encompassing pedagogical knowledge, self-efficacy, and teaching enthusiasm—enhances instructional quality, which in turn drives student achievement and engagement. This aligns with Blömeke et al. (2022), who demonstrated that instructional quality mediates the effect of teacher competence on student learning progress.

The regression analysis further revealed that over 60% of the variation in academic achievement is explained by educational cost and teacher competence, corroborating OECD (2019) reports that well-funded, professionally managed educational systems consistently outperform underfunded counterparts. Nonetheless, the findings also point to diminishing returns beyond a certain expenditure threshold; without adequate professional accountability, additional spending yields only marginal gains (Babalola, 2019). Overall, the study establishes that both financial investment and teacher competence are interdependent factors crucial for enhancing student learning outcomes, highlighting the importance of strategic allocation of educational resources and professional development in achieving sustainable academic success.

6 Conclusion

This study provides clear empirical evidence that both educational cost and teacher professional competence play vital roles in determining students' learning outcomes in private junior secondary schools in Lagos State. The findings show that financial investment, when strategically channeled into improving teacher quality and instructional processes, significantly enhances student performance. However, the results also indicate that teacher professional competence only partially mediates the relationship between educational cost and learning outcomes. This means that although financial resources are essential, their full impact is realized only when teachers possess strong

professional capability, pedagogical expertise, and innovative instructional skills. Poor utilization of financial resources or inadequate teacher preparation reduces the potential benefits of educational investment.

Grounded in Human Capital Theory, the study concludes that sustained and targeted investment in teacher competence leads to long-term educational gains and broader economic benefits. Quality education in private schools therefore depends not simply on the volume of spending but on the strategic prioritisation of teacher development, motivation, and retention. Effective financial investment coupled with high levels of teacher competence provides the strongest pathway for improving learning outcomes and strengthening overall school performance.

Social and Practical Implications

The study holds important social implications for parents, school owners, and communities. It challenges the assumption that high school fees automatically guarantee better academic outcomes and emphasizes the need to consider teacher quality as a core determinant of learning success. Practically, the results highlight the importance of channeling educational spending into areas that enhance teacher competence such as continuous professional development, improved welfare, and access to teaching resources. By strengthening teacher capacity, private schools can provide more equitable, effective, and impactful learning experiences that contribute to improved student performance and long-term societal development.

Implications for Managerial Practice and Policy

For school administrators, the findings underscore the need for evidence-based budgeting and resource allocation. Managers should prioritize investment in teacher training, recruitment of qualified personnel, and retention strategies that promote professional growth. Policies at the school and state levels should discourage cost-cutting practices that involve hiring underqualified teachers, as these undermine learning outcomes. Regulatory bodies can also use these insights to develop standards that mandate minimum teacher competence requirements and encourage transparency in how educational funds are utilized. Ultimately, enhanced governance and policy reforms focused on teacher quality will improve overall quality assurance in private schools.

Implications for Theory Development

The study contributes to the theoretical understanding of how resource-based factors influence educational outcomes. By demonstrating that teacher competence mediates the relationship between educational cost and student performance, the study strengthens the applicability of human capital theory and learning outcome models within the private education context. It highlights the importance of considering both financial and human resource variables simultaneously, thereby offering a more integrated framework for future research on school effectiveness. The findings also extend existing theories by showing that resource investment alone is insufficient without the proper transformation of such resources into teacher competence and instructional quality.

Limitations and Future Research Directions

Although the study provides important insights, it is not without limitations. First, the data were collected from private junior secondary schools within Lagos State, which may limit the generalizability of the findings to public schools or other regions. Second, the study relied on cross-sectional data, which restricts the ability to make causal inferences about the relationships among variables. Third, the study focused only on educational cost and teacher competence, while other factors such as school leadership, classroom environment, parental involvement, and student motivation were not included.

Future research should therefore explore longitudinal designs that capture changes over time, expand the study to diverse geographical areas, and incorporate additional variables that may interact with educational cost and teacher competence. Comparative studies between public and private schools, as well as mixed-methods approaches, may also offer deeper insights into the complex dynamics that shape student learning outcomes.

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Data Availability

The datasets used and/or analyzed during the current study are available from the corresponding author on request.

Conflict of Interest

The authors declare no conflicts of interest" should be included if there is no conflict of interest.

Declaration of Use of Generative AI

AI tools were used only for grammar and formatting. No part of the study's methods, analysis, or results was generated by AI. The author(s) take full responsibility for the work.

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