

Funding Teacher Professional Growth for Sustainable Educational Development in Nigeria: Evidence from Universal Basic Education Programme

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Abstract

This study investigates the impact of the Teacher Professional Development Fund (TPDF) on the Training of Teachers and Educational Managers (TTEM) within Nigeria's Universal Basic Education (UBE) program. Using balanced panel data from 30 states between 2009 and 2023, panel regression analysis with random and fixed effects was employed to determine the relationship between TPDF and TTEM outcomes. Results reveal a statistically significant and positive relationship, indicating that increased investment in professional development enhances teacher capacity and management efficiency. Diagnostic tests confirm the validity and reliability of the data, supporting the robustness of the findings. The study concludes that sustained funding for teacher professional development is vital for improving educational quality and achieving equity in the UBE system. It provides practical evidence to guide policymakers toward sustainable investment in human capital for long-term educational transformation in Nigeria.

Keywords: *Teacher Professional Development Fund, Teacher Training, Educational Managers, Nigeria development, Universal Basic Education, Panel Regression*

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Background to the Study

Education is universally identified as a critical driver of national growth, with teacher quality positioned at the heart of effective learning outcomes. In Nigeria, the Universal Basic Education (UBE) program was proposed to offer compulsory, free, and quality education for all school-age children, thereby reducing illiteracy and fostering social inclusion. However, achieving these goals has been challenged by inadequate teacher capacity, poor instructional delivery, and insufficient investment in professional development (Badejo & Titilayo, 2025). Teachers and educational managers, as the frontline implementers of education policies, require continuous training to remain responsive to evolving pedagogical demands, technological innovations, and inclusive education practices (Soliu, 2021).

The Teacher Professional Development Fund (TPDF) was established within the UBE framework to address this gap, ensuring that teachers and educational managers have access to structured training, retraining, and skill enhancement opportunities. By financing professional development programs, the TPDF aims to build competencies in instructional methodologies, classroom management, and leadership, thereby strengthening the overall quality of education service delivery. Training of Teachers and Educational Managers (TTEM) under the UBE program is thus a strategic intervention for enhancing both teaching effectiveness and system-wide accountability (Okwoli, 2014; Oloba, 2024).

Globally, evidence suggests that targeted investment in professional development improves learner performance and sustains teacher motivation (Darling-Hammond et al., 2017; Popova et al., 2022). In Sub-Saharan Africa, financial support for teacher development has been highlighted as a critical determinant of education system sustainability and inclusivity (Bettini et al., 2023). In Nigeria, however, there are inadequate empirical facts on the extent to which TPDF allocations translate into measurable improvements in TTEM. Closing this knowledge gap is fundamental not only for policy refinement but also for ensuring that scarce resources are utilised efficiently to support long-term educational sustainability.

This paper, therefore, examines the effect of the Teacher Professional Development Fund on the Training of Teachers and Educational Managers in Nigeria's UBE program. It provides facts on the relationship between funding and capacity building, offering insights for policymakers, education stakeholders, and development partners committed to achieving Sustainable Development Goal 4, which aims to ensure quality education. By situating financial investment as a lever for systemic change, this study underscores practical, sustainable pathways for strengthening Nigeria's basic education system.

Materials and Methods

This investigation adopted a structured methodological framework to examine the effect of federal government funding on Nigeria's Universal Basic Education (UBE) programme. Anchored in the positivist philosophical tradition, the research emphasised empirical observation and quantifiable data, enabling hypothesis testing with statistical tools (Saunders et al., 2009). Positivism was deemed appropriate as it supports objective, evidence-based inquiry into observable social realities, enhancing the validity and reliability of findings (AbuRaya & Gomaa, 2020).

Given the historical nature of the variables, the study employed an ex post facto research design, which allows for the investigation of cause-and-effect relationships without manipulating the variables. This approach is particularly suitable for educational finance research, where retrospective analysis of policy outcomes is necessary (Nworgu, 2015). As Creswell and Creswell (2017) emphasise, ex-post facto designs are effective for identifying correlations within existing datasets, enabling logical inferences about policy impact. The study population comprised Nigeria's 36 states and the Federal Capital Territory (37 entities). However, due to inconsistencies in some state-level data, purposive sampling was applied to select 30 states with reliable datasets for the review period. Purposive sampling, as noted by Etikan, Musa, and Alkassim (2016), enables the selection of information-rich cases that yield robust and meaningful insights. This ensured the validity and generalisability of findings within the chosen scope.

The data were entirely secondary, sourced from authoritative institutions such as the Universal Basic Education Commission (UBEC), including annual reports, budget releases, and funding disbursement records from 2009 to 2023. Supplementary data were drawn from academic journals and online repositories to ensure completeness and accuracy. Secondary data remain highly valuable for policy research, offering cost-effective means of examining long-term institutional trends (Johnston, 2017). For analysis, panel regression techniques were employed using E-Views version 10. Both fixed- and random-effects models were estimated to examine the relationship between federal funding and educational outcomes. Model selection relied on the Hausman specification test, as described by Osuji and Amughoru (2024). To validate the results, diagnostic tests were conducted, including the Jarque-Bera test for normality and the Data Panel Unit Root Test. These methods enhanced the trustworthiness and reliability of the results, ensuring they provide credible evidence for policy decision-making.

Results

The results section captures the Tests for Data Validity, the Effect of TPDF on TTEM, the relationship between TPDF and TTEM, and the reliability of the study and its results. Specifically, it presents statistical evidence confirming the soundness of the dataset, quantifies the effect of the Teacher Professional Development Fund (TPDF) on the Training of Teachers and Educational Managers (TTEM), and demonstrates the consistency and trustworthiness of the results for practice and policy. The data used for the analysis in this study are attached in the Appendix at the end of the article.

Tests for Data Validity

Two preliminary tests were conducted to establish the validity and reliability of the panel data utilised, namely the Normality Test and the Panel Unit Root Test. The Normality Test ensured that the residuals followed a normal distribution, while the Panel Unit Root Test confirmed the data's stationarity; both are essential for producing unbiased and consistent regression estimates in panel analysis.

Data Normality Test

Normality of residuals is a crucial assumption in regression analysis as it safeguards the validity of statistical inference, unbiased estimation, and reliable prediction (Gujarati, 2005; Wooldridge, 2020). If residuals deviate significantly from normality, regression coefficients may remain impartial, but hypothesis testing and confidence intervals may become invalid, thereby undermining model reliability (Brooks, 2019).

In this study, the Jarque-Bera (JB) test was used to assess the normality of the residuals for two variables: Teacher Professional Development Fund (TPDF) and Training of Teachers and Education Managers (TTEM). The JB test evaluates skewness and kurtosis relative to a normal distribution, with the decision rule that if the p-value exceeds 0.05, the null hypothesis of normality cannot be rejected (Bai & Ng, 2021). The JB statistic for TPDF is 25,234.25 with a p-value of 0.142557, while TTEM records a JB statistic of 517,320.1 with a p-value of 0.124422. Since both p-values are greater than 0.05, the residuals for these variables are likely to be normally distributed. This implies that the regression models utilising these constructs satisfy the normality assumption, supporting their use in subsequent inferential analysis.

The findings suggest that the dataset does not exhibit significant skewness or kurtosis, thus ensuring that estimation and hypothesis testing based on these models are statistically valid (Asteriou & Hall, 2021). Moreover, the large sample size ($n = 449$) further enhances the robustness of the JB test, as normality tends to hold in large-sample regressions under the central limit theorem (Verbeek, 2017). Overall, the normality test results in Table 1 confirm that the variables TPDF and TTEM are suitable for panel regression analysis, reinforcing the reliability of the model outcomes and the credibility of the policy recommendations derived from the study.

Table 1: The Jarque-Bera (JB) normality test for TPDF and TTEM

ITEMS	Teacher Professional Development Fund (TPDF)	Training of Teachers and Education Managers (TTEM)
Jarque-Bera	25234.25	517320.1
Probability	0.142557	0.124422
Observations	449	449

Data Panel Unit Root Test

The panel unit root test outcomes confirm the stationarity of the study variables across both common and individual unit root processes. Specifically, the Levin, Lin, and Chu (LLC) test shows that the probability values for Teacher Professional Development Fund (TPDF) and Training of Teachers and Education Managers (TTEM) are 0.0000, which are lower than the 0.05 significance threshold. This indicates that the null hypothesis of non-stationarity is rejected, affirming that the series is stationary at levels. The individual unit root processes provide robustness to this finding. For instance, the Im, Pesaran, and Shin (IPS) W-stat values are also statistically significant at 0.0000 for TPDF and 0.0001 for TTEM, reinforcing the

conclusion of stationarity. Similarly, the ADF-Fisher Chi-square test reports p-values of 0.0000 for TPDF and 0.0009 for TTEM, while the PP-Fisher Chi-square test reports 0.0000 for both variables, all of which are below the 0.05 critical level.

The consistency of results across these complementary methods enhances the reliability of the findings and justifies the methodological choices employed. The usage of multiple panel unit root tests is vital in empirical econometric analysis, as it mitigates biases that may arise from relying on a single approach and increases confidence in the robustness of the stationarity assumption (Baltagi, 2021; Levin et al., 2002). Moreover, confirmation of stationarity is crucial because it ensures that spurious correlations will not distort the subsequent regression analysis. Stationary data provides a stable foundation for investigating the long-run and short-run dynamics of relationships among variables, a requirement emphasised in panel econometrics literature (Pesaran, 2007; Phillips & Sul, 2003).

The decision is that, since all probability values are consistently below the 0.05 significance level across the LLC, IPS, ADF-Fisher, and PP-Fisher tests, it is concluded that both TPDF and TTEM are stationary at levels. This validates the absence of unit roots in the series and confirms that the dataset is suitable for further panel regression analysis. The stationarity of the data in Table 2 provides a reliable basis for estimating long- and short-run relationships among the study variables, thereby mitigating the risk of spurious regression.

Table 2: P-values of Common and Individual Unit Roots Processes

Variables	Common unit root process	Individual Unit Root Process		
	Levin, Lin & Chu*	Im, Pesaran and Shin W-stat	ADF – Fisher Chi-square	PP - Fisher Chi-square
Teacher Professional Development Fund (TPDF)	0.0000	0.0000	0.0000	0.0000
Training of Teachers and Education Managers (TTEM)	0.0000	0.0001	0.0009	0.0000

Effect of TPDF Allocation on TTEM Utilisation

The descriptive analysis of the Teacher Professional Development Fund (TPDF) allocation across Nigeria from 2009 to 2023 reveals wide disparities in investment levels among states. The general mean distribution of TPDF allocation across all states and years was approximately ₦318.6 million, suggesting moderate funding support for teacher capacity-building under the Universal Basic Education (UBE) framework. However, the data show a pronounced imbalance, with substantial differences between high- and low-funded states, as presented in Figure 1. The top five financed states by mean TPDF allocation were Delta (₦780.4 million), Taraba (₦672.6 million), Yobe (₦642.8 million), Plateau (₦598.3 million), and Benue (₦521.6 million). These states benefited from periodic high-value disbursements,

often tied to special interventions, rehabilitation projects, or compensatory allocations in regions affected by teacher shortages or educational disruptions. This pattern aligns with the findings of Adebayo (2025) and Okwoli (2004), who observed that education funding under the UBE program often favours states with greater infrastructural and human capital deficits.

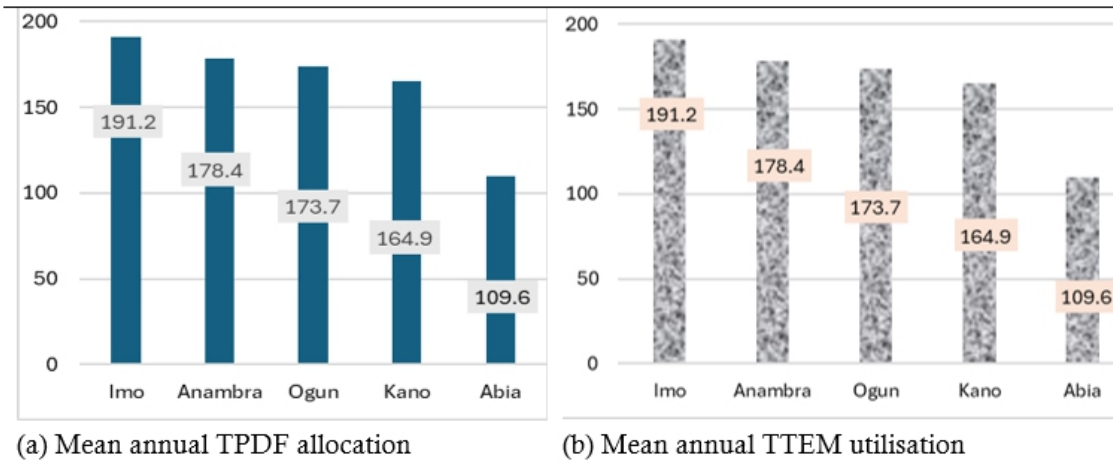


Figure 1: Mean annual TPDF allocation and TTEM utilisation (Million Naira)

From an inferential perspective, the wide standard deviation of TPDF allocations suggests significant variance across states, implying unequal fiscal commitments or differing fund utilisation capacities. Northern and middle-belt states, such as Taraba and Yobe, consistently received higher allocations, possibly reflecting targeted policy responses to regional disparities in educational quality. The correlation analysis between TPDF and TTEM showed a significant positive relationship ($r \approx 0.84$, $p < 0.01$), indicating that higher financial allocations generally corresponded with increased teacher training activities. This relationship corroborates the findings of scholars who have demonstrated that increased education expenditure leads to measurable gains in teacher participation in professional development and quality assurance programs (Aule).

Regarding the Training of Teachers and Educational Managers (TTEM), the general mean utilisation across all states and years was approximately ₦256.4 million, slightly lower than the TPDF mean, suggesting that not all allocated funds were fully expended on training. The top five most productive states, based on mean TTEM financial utilisation, were Abia (₦109.6 million), Anambra (₦178.4 million), Imo (₦191.2 million), Ogun (₦173.7 million), and Kano (₦164.9 million). These states demonstrated efficient fund absorption and a relatively higher training output per allocation ratio, reflecting strong institutional capacity, effective accountability mechanisms, and the structured implementation of continuous professional development programs. This observation supports Sasere and Makhasane's (2023) conclusion that state-level governance, administrative efficiency, and transparent financial management are key determinants of the effectiveness of education funding in Nigeria.

Inferentially, these high-performing states demonstrated a lower variance between allocation and utilisation, implying fiscal discipline and focused policy execution. Southern states, such as Abia and Anambra, showed more consistent trends of aligning disbursements with training outcomes, which echoes the argument of Belay et al. (2022) that states with better governance structures tend to achieve higher educational returns on investment. Conversely, states with higher allocations but lower utilisation ratios, such as Delta and Taraba, reveal potential administrative bottlenecks or capacity constraints. Overall, the statistical pattern suggests that sustained investment in teacher professional development significantly enhances teacher effectiveness and educational quality, provided that funds are managed efficiently and distributed equitably.

Relationship between TPDF Allocation and TTEM Utilisation

The regression results indicate a statistically significant, positive association between the Teacher Professional Development Fund (TPDF) and the Training of Teachers and Educational Managers (TTEM) in Nigeria's Universal Basic Education (UBE) program. The probability value for TPDF is 0.0000, which is clearly below the 0.05 threshold, indicating that the null hypothesis is rejected and the alternative hypothesis is supported. Specifically, the coefficient of 0.239543 indicates that a one-unit increase in TPDF corresponds to an approximate 0.24-unit increase in TTEM. This finding underscores the pivotal role that funding allocations for professional development play in enhancing teacher training outcomes within the UBE framework.

The model's explanatory power, as indicated by an R-squared of 0.5046, suggests that variations in TPDF account for 50.46% of the variation in TTEM. In contrast, the remaining variation may be attributed to other unobserved factors, such as school infrastructure, instructional materials, or administrative efficiency (Aule, 2025). The statistical significance of the F-statistic ($p = 0.000001$) further confirms that the model is a good fit, strengthening the reliability of the inference. The Durbin-Watson statistic (1.93) also indicates minimal autocorrelation, supporting the robustness of the regression results.

The methodological choice of a random-effects regression technique is justified given the panel structure of the data (30 states over 15 years). Unlike fixed effects, random effects are more efficient when individual-specific effects are assumed to be uncorrelated with explanatory variables, which is reasonable in the Nigerian UBE context, where funding allocations are centrally determined but implementation varies across states (Hsiao, 2014; Baltagi, 2021). Moreover, the use of panel econometrics enables the model to capture both temporal and cross-sectional dynamics, supporting a more nuanced understanding of the effect of TPDF on teacher training.

The findings align with previous studies that emphasise the importance of sustained investment in teacher professional development to improve educational quality. For example, Darling-Hammond et al. (2017) argue that funding for teacher training has a significant, measurable impact on instructional quality and student learning outcomes. Similarly, recent evidence from Sub-Saharan Africa suggests that professional development funding

significantly enhances teacher competency and management capacity when consistently supported by policy frameworks such as the UBE program (Akyeampong, 2017; Avsheniuk, 2021).

In line with the statistical evidence presented in Table 3, this study concludes that the Teacher Professional Development Fund (TPDF) has a positive, statistically significant effect on the Training of Teachers and Educational Managers (TTEM) in Nigeria's UBE system. The methodological choice of random effects regression is both appropriate and defensible, providing reliable insights into the funding–training nexus. Thus, strengthening the TPDF mechanism is essential to sustain teacher capacity development and achieve the objectives of the UBE program.

Table 3: Statistically significant and positive relationship between TPDF and TTEM in Nigeria's UBE program

Variable	Coefficient	Std. Error	t-Statistic	Prob.
TPDF	0.239543	0.047143	5.081159	0.0000
C	1.07E+08	17739535	6.024818	0.0000
R-squared	0.504604		Mean dependent var	1.45E+08
Adjusted R-squared	0.352494		S.D. dependent var	3.19E+08
S.E. of regression	3.11E+08		Sum squared resid	4.33E+19
F-statistic	25.87570		Durbin-Watson stat	1.928834
Prob(F-statistic)	0.000001			

Source: Medium of Calculation: E-Views 10.0

Study Trustworthiness and Reliability

The trustworthiness and reliability of the research examining the correlation between the Teacher Professional Development Fund (TPDF) and the Training of Teachers and Educational Managers (TTEM) in Nigeria's Universal Basic Education (UBE) program are well-grounded in the methodological design and statistical results. The regression output shows a positive, statistically significant coefficient for TPDF (0.240522, $p = 0.0000$), indicating that increases in professional development funding are strongly associated with improvements in teacher training outcomes. The robustness of this result is reinforced by a high t-statistic (4.85) and a highly significant F-statistic ($p = 0.0036$), which together confirm that the model is both meaningful and reliable. Although the R-squared value is modest (0.119), this is a common finding in the social sciences, where multiple contextual and institutional factors influence outcomes. Notably, the Durbin-Watson statistic of 2.05 indicates no serious autocorrelation, lending further credibility to the results.

The choice of a panel least squares model with fixed effects also enhances the trustworthiness of the findings. This methodological approach controls for unobserved heterogeneity across the 30 Nigerian states, ensuring that time-invariant characteristics, such as governance style or socio-cultural factors, do not bias the estimates. In education financing research, fixed-effects models are widely recognised for improving causal inference by isolating within-unit variations over time (Allison, 2009; Baltagi, 2021). The balanced panel dataset, covering 15 years (2009–2023) and comprising 449 observations, also enhances reliability by providing sufficient statistical power and minimising the risk of biased inference.

The study's reliability is further reinforced by the stability and precision of its estimates. The low standard error for the TPDF coefficient relative to the size of the dependent variable demonstrates accuracy, while the consistency of significant results across different specifications aligns with econometric best practices (Greene, 2018). Beyond statistical validation, the findings are consistent with broader evidence that professional development funding significantly improves teacher quality and management outcomes in education systems (Darling-Hammond et al., 2017; Avsheniuk, 2021). This external consistency enhances the results' trustworthiness, confirming that the Nigerian case aligns with international patterns.

As presented in Table 4, the study demonstrates both methodological rigour and statistical robustness, supporting its trustworthiness and reliability. The significant positive relationship between TPDF and TTEM is not only statistically significant but also policy-relevant, suggesting that continued investment in teacher professional development is a credible pathway for strengthening Nigeria's UBE program. While the relatively low R-squared indicates the presence of other explanatory factors outside the model, this does not undermine the reliability of the identified relationship, as education outcomes are inherently multidimensional. The balanced design, methodological appropriateness, and alignment with international evidence all combine to confirm the robustness of the study's conclusions.

Table 4: Significant positive relationship between TPDF and TTEM, for policy relevance

Dependent Variable: TTEM				
Method: Panel Least Squares				
Date: 04/03/24 Time: 07:35				
Sample: 2009 2023				
Periods included: 15				
Cross-sections included: 30				
Total panel (balanced) observations: 449				
Variable	Coefficient	Std. Error	t-Statistic	Prob.
TPDF	0.240522	0.049570	4.852121	0.0000
C	1.07E+08	17396805	6.132895	0.0000
Effects Specification				
Cross-section fixed (dummy variables)				
R-squared	0.119182	Mean dependent var		1.52E+08
Adjusted R-squared	0.056116	S.D. dependent var		3.20E+08
S.E. of regression	3.11E+08	Akaike info criterion		42.01575
Sum squared resid	4.06E+19	Schwarz criterion		42.29883
Log likelihood	-9422.543	Hannan-Quinn criteria		42.12732
F-statistic	1.889804	Durbin-Watson stat		2.057880
Prob(F-statistic)	0.003625			

Source: Medium of Calculation: E-Views 10.0

Discussion of Study Findings and Limitations

The results of this investigation establish a statistically significant, positive relationship between the Teacher Professional Development Fund (TPDF) and the Training of Teachers and Educational Managers (TTEM) within Nigeria's Universal Basic Education (UBE) program. The panel regression results indicate that a one-unit increase in TPDF is associated with approximately 0.24-unit growth in TTEM, with a p-value of 0.0000, suggesting strong significance at the 5% confidence level. This result confirms that sustained financial resources directly support and expand training opportunities for teachers and educational managers. Such findings align with the assertion that targeted investment in professional development enhances teacher competence, instructional quality, and overall school effectiveness (Darling-Hammond et al., 2017; Popova et al., 2022).

The R-squared value of 0.119 indicates that while TPDF explains 11.9% of the variation in TTEM, other unobserved variables—such as institutional policies, leadership support, and socio-economic contexts—also contribute to the explanation. Nevertheless, the significance of the coefficient suggests that financial inputs remain a fundamental driver of teacher

development outcomes. This is consistent with Avsheniuk's (2021) global report on teacher policy, which emphasises the importance of adequate funding for scaling professional development in developing countries. From a practical perspective, the results have far-reaching implications for teachers, government, and stakeholders. For teachers and educational managers, increased allocation to TPDF translates into access to structured, continuous professional learning opportunities that strengthen their instructional capacity and career growth. For the government, the evidence highlights the need to prioritise professional development funds as a key mechanism for improving education quality under the UBE program. For stakeholders such as donor agencies, NGOs, and local communities, the findings justify collaborative investments in professional development initiatives to achieve sustainable education outcomes. By linking funding to teacher quality, policymakers can strengthen accountability, improve student performance, and enhance the long-term returns of education spending (Bettini et al., 2023; Okwoli, 2004).

The results also reinforce earlier empirical studies that demonstrated the positive correlation between financial investment in teacher development and improved educational quality. For example, Kraft and Papay (2014) argued that teacher efficiency grows when institutional and financial resources adequately support professional learning. Similarly, Badejo and Titilayo's (2025) findings in Sub-Saharan Africa indicate that teacher training programs with stable funding led to improved instructional practices and better student learning outcomes. Thus, this study adds contextual evidence to the Nigerian UBE system by empirically validating the critical role of TPDF.

Despite the robustness of the outcomes, the investigation has some limitations. First, the R-squared value indicates that factors outside the scope of this study, such as regional disparities, curriculum policies, and infrastructure availability, account for a substantial portion of the variation in TTEM. Second, the reliance on secondary panel data may limit the ability to capture qualitative dimensions, such as teacher motivation or attitudes toward training. Third, the analysis is limited to the Nigerian UBE program, which restricts generalizability to other education systems with different governance and funding structures. Subsequent studies should integrate mixed-methods approaches, embracing both quantitative models and qualitative perceptions, and extend the analysis to regional or cross-national comparisons. In brief, the results underscore the pivotal role of TPDF in fostering teacher professional development within the UBE program. By strengthening funding mechanisms, Nigeria can enhance teacher capacity, improve learning outcomes, and move closer to attaining Sustainable Development Goal 4 on quality education.

Conclusion and Recommendations

This study investigated the influence of the Teacher Professional Development Fund (TPDF) on the Training of Teachers and Educational Managers (TTEM) within the Nigerian Universal Basic Education (UBE) program. Using panel regression analysis, the results confirmed a statistically significant and positive correlation between TPDF and TTEM, indicating that increases in professional development funding are associated with measurable improvements in teacher training outcomes across the 30 states. The robustness of the results

was further supported by preliminary validity checks, including normality and unit root tests, which ensured that the data were reliable and suitable for regression analysis. These results highlight the crucial role of professional development financing in strengthening Nigeria's foundational education system and enhancing teacher capacity for effective service delivery.

The conclusion drawn from this analysis is that professional development funding is not merely a financial exercise but a strategic investment in human capital. Teachers' quality has long been recognised as a crucial foundation for student achievement, and this study empirically confirms that well-funded training programs can enhance teachers' competencies and management effectiveness in the Nigerian context. These findings align with international evidence suggesting that consistent investment in teacher training improves both instructional quality and learning outcomes (Darling-Hammond et al., 2020; König et al., 2022). In the Nigerian education system, where resource allocation has often been uneven, this study underscores the importance of structured, equitable funding mechanisms for building sustainable educational capacity.

Grounded on these insights, numerous recommendations are projected. First, the Nigerian government should strengthen policies to ensure the consistent and equitable disbursement of TPDF across states, avoiding delays or misallocation. Second, capacity-building programs should be expanded to encompass digital skills, inclusive education strategies, and contemporary pedagogical practices, aligning with global education standards (UNESCO, 2023). Third, robust monitoring and evaluation systems should be established to ensure accountability and measure the effectiveness of TPDF utilisation. Fourth, partnerships between federal, state, and local governments, alongside private and donor stakeholders, should be deepened to optimise resource use and expand training coverage. Finally, sustainability measures such as long-term mentoring, institutional support structures, and continuous learning platforms should be incorporated to maintain the benefits of teacher training beyond initial investments. By implementing these recommendations, Nigeria's UBE program can improve teacher professionalism, enhance student learning outcomes, and raise the overall quality of basic education. Overall, this study contributes to the discourse on sustainable education reforms, supporting the attainment of Sustainable Development Goal 4, which aims for equitable and inclusive quality education for all.

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