

FACILITATION QUALITY AND EFFECTIVENESS OF OFF-THE-JOB PROFESSIONAL DEVELOPMENT FOR TEACHERS IN LAGOS STATE PUBLIC SECONDARY SCHOOLS

BY

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Abstract

This study investigated the influence of facilitation quality on effectiveness of off-the-job professional development (PD) programmes for teachers in public secondary schools in Lagos State, Nigeria. A descriptive-correlational research design was adopted, with data collected from 3,339 teachers across 13 programmes. Questionnaire titled “Teacher Development Programme Survey (TDPS)” was used for data collection. The questionnaire was validated through expert review, and internal reliability of the questionnaire was established using Cronbach's alpha and a coefficient of 0.87 was obtained. Descriptive statistics [median and interquartile range (IQR)] were computed to answer two research questions, and ordinal logistic regression was used to test the four hypotheses at the .05 level of significance. The findings showed that teachers generally perceived the programmes as ineffective (median = 2.0, IQR = 1.0), and facilitation quality was rated low (median = 2.0, IQR = 1.0). All three facilitation quality indices significantly influenced programme effectiveness: facilitator expertise ($Exp(\beta) = 4.08, p < .001$), technology integration ($Exp(\beta) = 4.76, p < .001$), and assessment coherence ($Exp(\beta) = 4.49, p < .001$). Technology integration emerged as the strongest predictor. The combined model confirmed that all three indices collectively influence effectiveness, with a Nagelkerke pseudo-R-square of .116. The study concludes that technology integration, assessment coherence, and facilitator expertise are critical determinants of PD programme effectiveness, with technology integration warranting the greatest investment. The study recommended among others that TESCOM should develop a facilitator certification programme covering andragogical practice, technology integration, and assessment design, with only certified facilitators permitted to deliver government-sponsored training.

Keywords: *Assessment coherence, Facilitation quality, Facilitator expertise, Teacher professional development and Technology integration*

Introduction

The function of formal education has shifted towards human capital development for national advancement, with Nigeria's National Policy on Education recognising education as a primary driver for producing skilled manpower and fostering socio-economic growth (Federal Republic of Nigeria, 2013). Consequently, professional development programmes have become indispensable for equipping teachers with competencies that go beyond initial pre-service preparation. Despite this recognition, delivering effective off-the-job professional development remains a persistent challenge across many educational systems. As documented by the United Nations Children's Fund (2025), such programmes are often characterised by high costs and low effectiveness, raising serious questions about their overall value and impact (Darling-Hammond, Hyler, & Gardner, 2017; Bassey, Bassey, & Asuquo, 2019).

Professional development programmes for teachers in Lagos State are predominantly off-the-job, typically delivered through workshops, seminars, conferences, and other external consultant-led learning sessions conducted away from teachers' schools (Desimone & Pak, 2017). Lagos State has consistently invested in such programmes, recruiting and inducting thousands of new teachers annually (Onodjoe, 2025). Yet, preliminary

observations of these training sessions reveal that teachers frequently report low levels of engagement, question the practical relevance of the content, and note a disconnect between the sessions' content and the realities of their classrooms. These concerns, which remain empirically underexplored, suggest that the professional development on offer is falling short of its intended goals, indicating a problem with the effectiveness of teachers' PD in the State. PD effectiveness refers to the extent to which training programmes achieve their intended learning outcomes. According to Kirkpatrick's model, effectiveness can be evaluated across four levels: reaction, learning, behaviour, and results (Kirkpatrick, 1959). The first two levels, reaction and learning, capture immediately measurable outcomes and can be operationalised through four interrelated indices: learning engagement, perceived relevance, learning satisfaction, and perceived learning achievement. Learning engagement is the degree of active participation during training sessions, while perceived relevance captures the alignment of training content with classroom needs. Learning satisfaction represents participants' overall evaluation of the training experience, and perceived learning achievement reflects reported gains in knowledge and practical skills. Collectively, these dimensions provide a comprehensive lens for assessing the immediate outcomes of professional development programmes.

Research (e.g., Desimone, 2017; Darling-Hammond, Hyler, & Gardner, 2017; Guskey, 2024) has identified multiple factors that influence the effectiveness of teacher professional development, including programme planning quality, facilitation quality, organisational support, and participant motivation. Among these, the quality of PD facilitation stands out as a critical determinant because it directly shapes the participants' learning experience during training delivery. Ajani (2022) and Bell and Goodman (2022) define PD facilitation quality as the standard of PD delivery measured by the facilitator's ability to apply subject-matter knowledge, pedagogical skill, and adult learning principles. Utschig (2025) opines that PD facilitation should represent a shift from passive knowledge transmission to active, participatory learning, while Gravani (2012) emphasises that PD facilitation must be informed by andragogical rather than pedagogical principles.

Three dimensions of facilitation quality have been identified as particularly important, namely facilitator expertise, technology integration, and assessment coherence. Facilitator expertise encompasses deep content knowledge, familiarity with pedagogical realities, and competence in applying adult learning principles (Van Es, Tunney, Goldsmith, & Seago, 2014). Technology integration leverages digital tools' interactivity, multimedia, and connectivity to enhance learning engagement and enable scalable delivery (Quota, Cobo, Wilichowski, & Patil, 2022). Assessment coherence ensures that evaluation methods align with stated learning objectives in both content and cognitive complexity (Barthakur, Joksimovic, Kovanovic, Richey, & Pardo, 2022). Despite the acknowledged importance of facilitation quality for professional development, Adebola (2016) and Awodiji and Ogbudinkpa (2020) observed that facilitators in the Nigerian context often lack the combined andragogical competence and contextual classroom understanding required for effective delivery. Okey, Etesike, and Offor (2024) report that technology integration remains hindered by limited facilitator competence and infrastructural constraints. Babatimehin, Aina, Ogunsakin, and Ogungbaigbe (2025) and Gunde, Ejiroghene, and Cetawomilo (2025) document persistent misalignment between learning objectives and assessment methods. These deficiencies may contribute to the ineffectiveness of these professional development programmes in Lagos State. This study, therefore, investigates the influence of facilitation quality, measured through facilitator expertise, technology integration, and assessment coherence, on the effectiveness of off-the-job professional development programmes for public secondary school teachers in Lagos State.

Research Objectives

This study examined the influence of facilitation quality on the effectiveness of off-the-job professional development programmes for public secondary school teachers in Lagos State. Specifically, the study sought to:

1. describe the level of effectiveness of off-the-job professional development programmes as perceived by teachers;

2. describe the level of facilitation quality as perceived by teachers;
3. determine the influence of facilitator expertise on the effectiveness of off-the-job professional development programmes;
4. determine the influence of technology integration on the effectiveness of off-the-job professional development programmes;
5. determine the influence of assessment coherence on the effectiveness of off-the-job professional development programmes; and
6. examine the combined influence of facilitator expertise, technology integration, and assessment coherence on the effectiveness of off-the-job professional development programmes.

Research Questions

1. What is the level of effectiveness of off-the-job professional development programmes for the public secondary school teachers in Lagos State?
2. What is the level of facilitation quality of the programmes?

Hypotheses

1. Facilitator expertise has no significant influence on the effectiveness of off-the-job professional development programmes.
2. Technology integration has no significant influence on the effectiveness of off-the-job professional development programmes.
3. Assessment coherence has no significant influence on the effectiveness of off-the-job professional development programmes.
4. There is no significant combined influence of facilitator expertise, technology integration, and assessment coherence on the effectiveness of off-the-job professional development programmes.

Methodology

This study adopted a descriptive-correlational research design. The descriptive component profiled the current state of facilitation quality and professional development effectiveness, while the correlational component examined the influence of facilitation quality indices (facilitator expertise, technology integration, and assessment coherence) on PD effectiveness. The target population consisted of 9,800 teacher attendances. They were selected across 49 sessions within 13 off-the-job professional development programmes for public secondary school teachers in Lagos State. Using criterion-based sampling, 27 sessions (approximately 55%) were selected from the 49 to ensure representation across different phases of programme delivery: for programmes with five sessions, three were selected (first, middle, and last); for programmes with four sessions, two were selected (first and last); and programmes with a single session were selected in full. Within each selected session, the participants were selected using systematic random sampling, stratified by subject specialisation (science, humanities, business, and trade subjects). Each training session typically accommodates approximately 200 teacher participants. Using the Yamane (1967) formula at a 95% confidence level and a 5% margin of error, a minimum sample size of 133 respondents (66.5%) per session was derived. Across 27 selected sessions, this produced an estimated minimum sample size of 3,591 respondents. A total of 3,339 valid responses were obtained, representing approximately 93% of the target sample.

The survey was a researcher-designed instrument, titled the Teacher Development Programme Survey (TDPS), which measured teachers' perceptions of facilitation quality and programme effectiveness. The facilitation quality section assessed three indices: facilitator expertise (6 items), technology integration (4 items), and assessment coherence (4 items). The PD effectiveness section measured four indices: learning engagement, perceived relevance, perceived learning achievement, and learning satisfaction. The instrument used a 4-point Likert scale (1 = strongly disagree to 4 = strongly agree). Content validity was established through expert review, and reliability was confirmed through pilot testing with Cronbach's alpha coefficients ranging from .81 to .89 across the two subscales. Ethical clearance was secured from the University of Lagos Postgraduate

School, after which administrative authorisation was obtained from the Lagos State Teaching Service Commission. Questionnaires were distributed in both electronic (Google Forms) and hard-copy formats immediately after each training session. Participation was voluntary, and anonymity was guaranteed. Descriptive statistics (median and interquartile range (IQR)) were computed to answer the descriptive research questions. The data collected being on an ordinal scale, the median was used as the measure of central tendency, and the IQR was used as the measure of dispersion. To test the hypotheses, ordinal logistic regression was employed to examine the influence of each facilitation quality index on programme effectiveness, as well as their combined influence. The alpha level for significance was set at .05.

Results

Answering the Research Questions

Research Question One: What is the level of effectiveness of off-the-job professional development programmes for the public secondary school teachers in Lagos State?

Table 1: Descriptive Statistics of Professional Development Effectiveness (N = 3,339)

Index	Median	IQR	Remark
Learning Engagement	2.0	1.0	Disagree with high consensus
Perceived Relevance	2.0	1.0	Disagree with high consensus
Perceived Learning Achievement	2.0	1.0	Disagree with high consensus
Learning Satisfaction	2.0	1.0	Disagree with high consensus
Overall Effectiveness	2.0	1.0	Disagree with high consensus

Table 1 presents the descriptive statistics for the four indices of professional development effectiveness. The overall median for programme effectiveness was 2.0 (IQR = 1.0), corresponding to "Disagree" with high consensus among the 3,339 teachers. All four indices recorded medians of 2.0 (disagree): learning engagement, perceived relevance, perceived learning achievement, and learning satisfaction. Therefore, the level of effectiveness of off-the-job professional development programmes as perceived by teachers is low (disagree), indicating that teachers generally disagreed that the programmes achieved their intended outcomes.

Research Question Two: What is the level of facilitation quality of the programmes?

Table 2: Descriptive Statistics of Facilitation Quality (N = 3,339)

Index	Median	IQR	Remark
Facilitator Expertise	2.0	1.0	Disagree with high consensus
Technology Integration	2.0	1.0	Disagree with high consensus
Assessment Coherence	3.0	2.0	Agree with varied perceptions
Overall Facilitation Quality	2.0	1.0	Disagree with high consensus

Table 2 presents the descriptive statistics for the three indices of facilitation quality. The overall median for facilitation quality was 2.0 (IQR = 1.0), corresponding to "Disagree" with high consensus. Facilitator expertise and technology integration both recorded medians of 2.0 (disagree), while assessment coherence recorded a median of 3.0 (agree) with varied perceptions (IQR = 2.0). Therefore, the level of facilitation quality as perceived by teachers is low (disagree), indicating that teachers generally disagreed that the quality of facilitation was adequate.

Hypothesis Testing

Hypothesis One (H_{01}): Facilitator expertise has no significant influence on the effectiveness of off-the-job professional development programmes

Table 3: Facilitator expertise and OTJ PD Effectiveness

Predictor Variable	N	β (Estimate)	Std. Error	Wald	df	p-value	Exp(β)	95% CI for Exp(β)	Decision
Facilitator expertise	3,339	1.405	.131	115.710	1	< .001	4.08	[3.16, 5.27]	Reject H_{01}

Note. Nagelkerke pseudo $R^2 = .046$. The model was statistically significant ($p < .001$).

Table 3 shows that facilitator expertise has a significant positive influence on the effectiveness of off-the-job professional development programmes. The odds ratio ($\text{Exp}(\beta) = 4.08$) indicates that for every one-unit increase in facilitator expertise, the odds of reporting a higher category of programme effectiveness increase by a factor of 4.08. The null hypothesis is rejected, meaning facilitator expertise has a significant influence on the effectiveness of off-the-job professional development programmes.

Hypothesis Two (H_{02}): Assessment coherence has no significant influence on the effectiveness of OTJ PD programmes.

Table 4: Assessment Coherence and OTJ PD Effectiveness

Predictor Variable	N	β (Estimate)	Std. Error	Wald	df	p-value	$\text{Exp}(\beta)$	95% CI for $\text{Exp}(\beta)$	Decision
Assessment Coherence	3,339	1.502	.132	129.931	1	< .001	4.49	[3.47, 5.81]	Reject H_{02}

Note. Nagelkerke pseudo $R^2 = .051$. The model was statistically significant ($p < .001$).

Table 4 shows that assessment coherence has a significant positive influence on the effectiveness of off-the-job professional development programmes. The odds ratio ($\text{Exp}(\beta) = 4.49$) indicates that for every one-unit increase in assessment coherence, the odds of reporting a higher category of programme effectiveness increase by a factor of 4.49. The null hypothesis is rejected; therefore, assessment coherence has a significant influence on the effectiveness of OTJ PD programmes.

Hypothesis Three (H_{03}): Technology integration has no significant influence on the effectiveness of off-the-job professional development programmes.

Table 5: Technology Integration and OTJ PD Effectiveness

Predictor Variable	N	β (Estimate)	Std. Error	Wald	df	p-value	$\text{Exp}(\beta)$	95% CI for $\text{Exp}(\beta)$	Decision
Technology Integration	3,339	1.561	.133	138.579	1	< .001	4.76	[3.67, 6.18]	Reject H_{03}

Note. Nagelkerke pseudo $R^2 = .055$. The model was statistically significant ($p < .001$).

Table 5 shows that technology integration has a significant positive influence on the effectiveness of off-the-job professional development programmes. The odds ratio ($\text{Exp}(\beta) = 4.76$) indicates that for every one-unit increase in technology integration, the odds of reporting a higher category of programme effectiveness increase by a factor of 4.76. Therefore, the null hypothesis is rejected, meaning technology integration has a significant influence on the effectiveness of off-the-job professional development programmes.

Hypothesis Four (H_{04}): There is no significant combined influence of facilitator expertise, technology integration, and assessment coherence on the effectiveness of off-the-job professional development programmes.

Table 6: Combined Facilitation Quality Indices and OTJ PD Effectiveness

Predictor Variable	N	β (Estimate)	Std. Error	Wald χ^2	p-value	$\text{Exp}(\beta)$	95% CI for $\text{Exp}(\beta)$	Decision
Facilitator Expertise	3,339	.940	0.147	41.083	< .001	2.56	[1.92, 3.41]	Reject H_{04}
Assessment Coherence		1.065	0.148	51.986	< .001	2.90	[2.17, 3.88]	
Technology Integration		1.533	0.135	129.022	< .001	4.63	[3.55, 6.03]	

Note. Nagelkerke pseudo $R^2 = .116$

Table 6 shows that all three facilitation quality indices collectively and significantly influence the effectiveness of off-the-job professional development programmes. Technology integration emerged as the strongest

predictor ($\text{Exp}(\beta) = 4.63$), followed by assessment coherence ($\text{Exp}(\beta) = 2.90$) and facilitator expertise ($\text{Exp}(\beta) = 2.56$). The Nagelkerke pseudo R-square value of .116 indicates a modest improvement in model fit over the null model. The null hypothesis is therefore rejected; there is a significant combined influence of facilitator expertise, technology integration, and assessment coherence on the effectiveness of off-the-job professional development programmes.

Discussion of the Findings

Research Question one was to determine the level of effectiveness of off-the-job professional development programmes as perceived by teachers. The findings showed that teachers generally disagreed (median=2.0) with high consensus (IQR = 1) that the programmes were effective across all four indices. This aligns with Ji (2023), who observed that while participation in teacher professional development is often high, meaningful engagement remains limited. Within the Nigerian context, Adebayo and Sulaimon (2024) similarly suggested that participation is frequently compliance-driven rather than intrinsically motivated. The low ratings across engagement, relevance, learning achievement, and satisfaction suggest that the programmes are not achieving their intended outcomes.

Research Question two was to determine the level of facilitation quality as perceived by teachers. The findings showed that overall facilitation quality was rated low (median = 2.0) with overall high consensus (IQR = 1). Facilitator expertise and technology integration both recorded medians of 2.0 (Disagree) (IQR = 1), while assessment coherence recorded a median of 3.0 (Agree) with varied perceptions (IQR = 2.0). The low rating of facilitator expertise is consistent with Adebola (2016) and Awodiji and Ogbudinkpa (2020), who noted that Nigerian facilitators often lack andragogical competence and classroom understanding. The weak technology integration finding aligns with Okey, Etesike, and Offor (2024), who attributed this to limited facilitator competence and infrastructural constraints. The higher but inconsistent assessment coherence rating suggests that alignment between objectives and assessment is not systematically embedded in practice, likely due to uneven facilitator training (Babatimehin, Aina, Ogunsakin, & Ogunbaigbe, 2025).

Research hypothesis one was to determine the influence of facilitator expertise on the effectiveness of off-the-job professional development programmes. The ordinal logistic regression analysis showed a positive and statistically significant influence ($\beta = 1.405$, $p < .001$, $\text{Exp}(\beta) = 4.08$). This finding implies that teachers who rated facilitator expertise higher were substantially more likely to report greater programme effectiveness. This aligns with Ajani (2022), Perry and Boylan (2017), and Noonan (2022), who found that facilitator competence, credibility, and classroom experience critically influence participant learning and engagement. Gravani (2012) further argues that facilitation must be informed by andragogical rather than pedagogical principles, a distinction captured by the present study's multidimensional conceptualisation.

Research hypothesis two was to determine the influence of technology integration on the effectiveness of off-the-job professional development programmes. The ordinal logistic regression analysis showed a positive and statistically significant influence ($\beta = 1.561$, $p < .001$, $\text{Exp}(\beta) = 4.76$). Technology integration emerged as a strong predictor among the three facilitation indices. This finding implies that strategic use of digital tools, effective management of technical issues, and modelling of classroom integration enhance teachers' perceptions of programme effectiveness. This aligns with Saqib et al. (2021) and Ajani (2022), who found that technology-enhanced delivery improves engagement and satisfaction, as well as Walker et al. (2012) and Quota et al. (2022), who identified technology's interactivity and multimedia as enablers of effective professional development delivery.

Research hypothesis three was to determine the influence of assessment coherence on the effectiveness of off-the-job professional development programmes. The ordinal logistic regression analysis showed a positive and statistically significant influence ($\beta = 1.502$, $p < .001$, $\text{Exp}(\beta) = 4.49$). This finding implies that when assessments are aligned with learning objectives, teachers perceive the programme as more effective. The

result is consistent with Barthakur et al. (2022), who emphasised constructive alignment as central to effective instructional design. While Babatimehin et al. (2025) and Gunde et al. (2025) documented persistent misalignment in Nigerian professional development contexts, the present study demonstrates that when coherence is achieved, its influence on effectiveness is substantial.

Research hypothesis four was to examine the combined influence of facilitator expertise, technology integration, and assessment coherence on the effectiveness of off-the-job professional development programmes. The multiple ordinal logistic regression analysis showed that all three indices collectively and individually exerted significant influence. Technology integration emerged as the strongest predictor ($\beta = 1.533$, $\text{Exp}(\beta) = 4.63$, $p < .001$), followed by assessment coherence ($\beta = 1.065$, $\text{Exp}(\beta) = 2.90$, $p < .001$) and facilitator expertise ($\beta = 0.940$, $\text{Exp}(\beta) = 2.56$, $p < .001$). The Nagelkerke pseudo R-square value of .116 indicated a modest improvement in model fit over the null model. This finding confirms that excellence in one dimension cannot compensate for deficiencies in others. A programme might have an expert facilitator, but if technology is poorly integrated or assessments are misaligned, effectiveness suffers. Conversely, strong technology integration cannot compensate for a facilitator who lacks andragogical skill.

Conclusion

This study investigated the influence of facilitation quality on the effectiveness of off-the-job professional development programmes for public secondary school teachers in Lagos State, Nigeria. Teachers perceived the programmes as ineffective across all four effectiveness dimensions (learning engagement, perceived relevance, perceived learning achievement, and learning satisfaction). Facilitation quality was rated low, with significant deficiencies in facilitator expertise and technology integration, while assessment coherence received a moderate rating but with varied perceptions. All three indices significantly influenced programme effectiveness: facilitator expertise ($\text{Exp}(\beta) = 4.08$), technology integration ($\text{Exp}(\beta) = 4.76$), and assessment coherence ($\text{Exp}(\beta) = 4.49$). Technology integration emerged as the strongest predictor, challenging the conventional emphasis on facilitator expertise. The study concludes that facilitator competence in subject matter, pedagogy, and andragogy, along with strategic technology integration and coherent assessment design, are critical determinants of programme effectiveness. However, excellence in one dimension cannot compensate for deficiencies in others. The finding that technology integration was the strongest predictor suggests that investment in technology infrastructure and facilitator training in technology integration may yield the greatest returns in perceived effectiveness. Programme designers and facilitators must attend to all three dimensions simultaneously to achieve meaningful improvement in off-the-job professional development outcomes.

Recommendations

The following recommendations are suggested based on the findings of the study:

1. Lagos State Teaching Service Commission should conduct a comprehensive review of the current OTJ professional development model. This review should identify systemic weaknesses in programme delivery, with particular attention to why teachers consistently report low engagement, low relevance, minimal learning gains, and poor satisfaction.
2. Facilitators should be selected based not only on subject matter knowledge but also on recent, practical experience in Lagos State public secondary school classrooms. Where such facilitators are unavailable, external experts should co-facilitate with experienced local teachers.
3. Teaching Service Commission should urgently invest in technology infrastructure for all off-the-job training venues, including reliable internet connectivity. Also, facilitators should receive intensive hands-on training in the strategic and interactive use of these tools to actively engage teachers.
4. Facilitators should receive dedicated training in assessment design with emphasis on Bloom's Taxonomy. This training should cover alignment of assessments with learning objectives and providing constructive feedback. All programme assessments should be reviewed by a quality assurance officer before administration.

5. Programme designers should adopt a holistic approach, recognising that excellence in one dimension cannot compensate for deficiencies in others. Therefore, quality assurance mechanisms should assess facilitator expertise, technology integration, and assessment coherence simultaneously using teacher surveys, observation protocols, and document reviews. Priority should be given to technology integration, which emerged as the strongest predictor.
6. Lagos State Teaching Service Commission should conduct longitudinal studies examining whether improved facilitation practices translate into sustained changes in teacher practice and students' outcomes.

References

- Adebayo, A. A., & Sulaimon, J. T. (2024). *Challenges and prospects of teachers' continuous professional development in 21st-century Nigeria: A systematic literature review*. Available online at <https://www.researchgate.net/publication/383740397>
- Adebola, H. E. (2016). Improving the Professional Ethics of Facilitators through Andragogical Methodologies for Non-Formal Education Delivery in Nigeria. *Advances in Social Sciences Research Journal*, 3(6), 41-52. doi.org/10.14738/assrj.36.1520
- Ajani, O. A. (2022). Exploring the teacher professional development activities: Perspectives of Nigerian high school teachers. *International Journal of Learning, Teaching and Educational Research*, 21(6), 34-49. doi.org/10.26803/ijlter.21.6.3
- Awodiji, O., & Ogbudinkpa, I. C. (2020). Teachers' professional development: A panacea to quality education in Nigeria. *International Journal of Educational Management*, 18(1), 11-23.
- Babatimehin, T., Aina, O., Ogunsakin, I. B., & Ogungbaigbe, T. S. (2025). Assessing teachers' knowledge of school-based assessment practices in Nigerian secondary schools. *Discover Education*, 4(1), 1-16. doi:10.1007/s44217-025-00512-8
- Barthakur, A., Kovanovic, V., Joksimovic, S., Zhang, Z., Richey, M., & Pardo, A. (2022). Measuring leadership development in workplace learning using automated assessments: Learning analytics and measurement theory approach. *British Journal of Educational Technology*, 53(6), 1842-1863.
- Bassey, E. I., Bassey, N. E., & Asuquo, O. M. (2019). Staff training and development: Its impact on employee performance and organisational productivity in Nigeria. *International Journal of Business Management and Economic Review*, 2(4), 155-173.
- Bell, L. A., & Goodman, D. J. (2022). Design and facilitation. *Teaching for Diversity and Social Justice*, 12(1), 57-96.
- Darling-Hammond, L., Hyler, M. E., Gardner, M. (2017). *Effective teacher professional development*. Palo Alto, CA: Learning Policy Institute. Available at <https://files.eric.ed.gov/fulltext/ED606743.pdf>
- Desimone, L. M., & Pak, K. (2017). Instructional coaching as high-quality professional development. *Theory into Practice*, 56(1), 3-12.
- Federal Republic of Nigeria. (2013). *National policy on education* (6th ed.). Lagos: NERDC.
- Gravani, M. N. (2012). Adult learning principles in designing learning activities for teacher development. *International Journal of Lifelong Education*, 31(4), 419-432.
- Gunde, Y., Ejiroghene, C., & Cetawomilo, J. (2025). Curriculum alignment: Ensuring curriculum coherency and consistency with instruction and outcomes across grade levels in Nigeria. *Journal of Educational Studies Trends and Practice*, 9(1), 110-116. doi.org/10.70382/sjestp.v9i8.046
- Guskey, T. R. (2024). Look beyond the satisfaction survey: A framework to evaluate results of professional learning. *The Learning Professional*, 45(1), 28-33.
- Kirkpatrick, D. L. (1959). Techniques for evaluating training programmes. *Journal of the American Society of Training Directors*, 13(3), 21-26.
- Noonan, J. (2022). "Regard me": A case study of learner engagement and the satisfaction of basic needs in continuing professional development. *Professional Development in Education*, 50(5), 1-15.
- Okey, O. C., Etesike, C. N., & Ofor, C. U. (2024). Revolutionising Teacher Training in Nigeria: Navigating Digital Challenges and Embracing Opportunities. *Journal of Open Innovation*, 1(1), 90-97.

- Onodjae, E. (2025, July 15). *Lagos inducts 1,500 newly recruited teachers*. Available online at <https://www.vanguardngr.com/2025/07/lagos-inducts-1500-newly-recruited-teachers/>
- Perry, E., & Boylan, M. (2017). Developing the developers: Supporting and researching the learning of professional development facilitators. *Professional Development in Education*, 44(2), 254–271.
- Quota, M., Cobo, C., Wilichowski, T., & Patil, A. (2022). *Effective teacher professional development using technology*. World Bank. doi:10.1596/37983.
- Saqib, M., Tabassum, F., Haqdad, A., Mehmood Qamar, A., Ameer, S., & Awan, M. (2021). Role of technology in the professional development of prospective teachers at the secondary level in Punjab. *International Journal of Innovation, Creativity and Change*, 15(4), 767-783.
- Utschig, T. (2025). *Learning facilitation*. Available online at <https://campus.kennesaw.edu/faculty-staff/cetl/teaching-resources/facilitation.php>
- Van Es, E. A., Tunney, J., Goldsmith, L. T., & Seago, N. (2014). A framework for the facilitation of teachers' analysis of video. *Journal of Teacher Education*, 65(4), 340–356.
- Walker, A., Recker, M., Ye, L., Robertshaw, M. B., Sellers, L., & Leary, H. (2012). Comparing technology-related teacher professional development designs: A multilevel study of teacher and student impacts. *Educational Technology Research and Development*, 60(3), 421–444.