



TEAMWORK AND COLLABORATION AS A DRIVER OF TEACHERS' PROFESSIONAL DEVELOPMENT IN PUBLIC SECONDARY SCHOOLS: EVIDENCE FROM KIGOMA DISTRICT, TANZANIA

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ABSTRACT :

This study assessed the influence of teamwork and collaboration on teachers' professional development in public secondary schools in Kigoma District, Tanzania. Guided by Distributed Leadership Theory and Transformational Leadership Theory, the study employed a quantitative approach using a cross-sectional survey design. A sample of 187 usable responses was obtained from 201 distributed questionnaires, representing a response rate of 93%, drawn from teachers, heads of schools, and academic masters or mistresses through simple random and purposive sampling. Data were collected through a structured questionnaire and analysed using descriptive statistics, Pearson correlation, simple linear regression, and multiple regression with SPSS version 25. Findings revealed that teamwork and collaboration recorded the highest overall mean (3.81) among the three collaborative leadership dimensions examined in the broader study. Specifically, 81.8% of respondents agreed that teamwork improves teaching methods, 80.7% agreed it contributes to professional development, and 78.6% agreed that collaboration improves professional skills. Pearson correlation showed the strongest relationship among all predictors ($r = 0.674$, $p < 0.001$), and simple regression confirmed that teamwork explained 45.4% of variance in professional development ($R^2 = 0.454$, $B = 0.668$, $p < 0.001$). In the combined model, teamwork retained the highest standardized Beta ($\beta = 0.402$), confirming it as the strongest independent predictor of professional development. However, resource sharing (63.6%) and peer learning practice (64.2%) were comparatively weak, indicating gaps between collaborative values and structured collaborative practice. The study concludes that teamwork is the most powerful collaborative leadership mechanism for professional development in Kigoma District, but its potential remains partially unrealized due to inadequate institutionalization. It recommends formal scheduling of collaborative activities, leadership investment in peer learning structures, and resource provision as preconditions for sustained collaborative professional growth.

Keywords: *Teamwork, collaboration, teachers' professional development, Distributed Leadership Theory, public secondary schools, Kigoma District.*

1. Introduction

Teachers' professional development has been identified globally as a critical determinant of instructional quality and student learning outcomes. While formal training programmes such as workshops, seminars, and in-service courses constitute the most visible forms of professional development, research increasingly demonstrates that school-based collaborative practices through which teachers work together, share knowledge, and learn from one another within their daily professional contexts are equally and often more powerful drivers of sustained professional growth (Darling-Hammond et al., 2020; Vangrieken et al., 2022). Collaboration among teachers creates continuous, contextually embedded opportunities for learning that formal training, by its periodic and external nature, cannot fully replicate. Hord (1997) describes these peer-based learning environments as professional learning communities in which shared practice, mutual support, and collective inquiry generate professional development from within the school rather than depending exclusively on externally provided training events.

In developed countries, collaborative professional learning is well institutionalized. In the United States, professional learning communities and collaborative lesson planning are embedded in school schedules, supported by dedicated time and leadership investment (Spillane, 2021). In Finland and other Nordic systems, collaborative cultures built on trust and peer support are understood as foundational to the high quality of teaching outcomes those systems achieve (Sahlberg, 2021; Ahtiainen et al., 2022). In Asia, lesson study a structured form of teacher collaboration involving joint lesson design, peer observation, and collective review has been institutionalized in Japan, China, and Singapore as a systematic professional development mechanism producing measurable improvements in instructional quality (Li & Liu, 2022; Tan & Dimmock, 2021).

In Sub-Saharan Africa, collaborative professional learning carries additional significance because access to formal training programmes is constrained

by financial limitations, geographical isolation, staffing shortfalls, and inadequate infrastructure. Research in Kenya, Ghana, South Africa, and Uganda documents that where formal professional development opportunities are scarce, peer collaboration provides a comparatively accessible and continuous alternative source of professional support that sustains teacher growth between training events (Mestry, 2021; Adu & Osei, 2021; Mukama, 2022). In Tanzania, Mosha (2022) and Komba and Mwakabenga (2023) confirm that schools whose leaders encourage teamwork and peer collaboration produce more professionally engaged and instructionally effective teachers, while Sanga (2024) observes that many rural schools continue to rely on hierarchical leadership cultures that suppress collaborative practices, limiting teachers' professional growth.

In Kigoma District, located in western Tanzania, these structural constraints are especially pronounced. The district faces geographical isolation, limited access to external professional development, resource shortfalls, and teacher shortages conditions that render school-based collaborative learning not merely supplementary but structurally essential for teacher professional growth. Despite the potential importance of teamwork and collaboration in this context, limited empirical research has specifically examined how these practices operate in Kigoma District schools and how they influence teachers' professional development in quantifiable terms. This study was guided by Distributed Leadership Theory, which views leadership as a collective practice distributed among organizational members through teamwork, shared responsibility, and mutual expertise (Harris, 2020; Spillane, 2021), and by Transformational Leadership Theory, which explains how leaders create conditions that motivate and support follower development through inspirational vision and individualized support (Bass, 1985; Leithwood et al., 2020). The study pursued the specific objective of assessing the influence of teamwork and collaboration among teachers on their professional development in public secondary schools in Kigoma District.

2. Methodology

2.1 Study Area

The study was conducted in Kigoma District, Kigoma Region, western Tanzania. The district is largely rural and geographically isolated, with public secondary schools experiencing limited access to external professional development programmes, teacher shortages, and constrained instructional resources. These conditions render school-based collaborative learning structurally important and make Kigoma District a particularly relevant setting for examining the relationship between teamwork and teacher professional development.

2.2 Research Approach and Design

The study employed a quantitative research approach, appropriate for measuring variables and analysing statistical relationships between collaborative practices and professional development outcomes (Creswell, 2021). A cross-sectional survey design was adopted, enabling data collection from a representative sample at a single point in time and allowing systematic description of patterns in teamwork practices and professional development across multiple schools (Kothari, 2020).

2.3 Sampling Procedure and Sample Size

From a total population of 406 teachers, heads of schools, and academic masters or mistresses across the 29 government secondary schools in Kigoma District, a sample of 201 respondents was determined using Yamane's (1967) formula at a 95% confidence level and 5% margin of error. Simple random sampling was used to select teachers, ensuring equal probability of selection. Purposive sampling was applied to select heads of schools and academic masters or mistresses based on their direct leadership responsibilities. Of 201 questionnaires distributed, 187 were properly completed and returned, yielding a response rate of 93%, which is considered excellent for quantitative research (Mugenda & Mugenda, 2023).

2.4 Data Collection Method and Instrument

Data were collected through a structured questionnaire adapted from validated studies on collaborative leadership and professional development (Harris, 2020; Leithwood et al., 2020). The teamwork and collaboration construct was measured using eight items scored on a five-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree), covering joint lesson planning, resource sharing, peer learning, mutual support, and the perceived effects of collaboration on teaching methods, professional skills, and overall professional development. Content validity was established through expert review using the Content Validity Index procedure, yielding a Scale-level CVI of 0.91. Reliability testing through a pilot study returned a Cronbach's Alpha of 0.861 for the teamwork construct, exceeding the 0.80 threshold for good internal consistency (Nunnally & Bernstein, 1994).

2.5 Data Analysis

Data were analysed using SPSS version 25. Descriptive statistics including frequencies, percentages, means, and standard deviations described patterns in teamwork and collaboration responses. Pearson's Product-Moment Correlation Coefficient examined the strength and direction of the relationship

between teamwork and professional development. Simple linear regression assessed the independent predictive contribution of teamwork to professional development. Multiple regression with shared decision-making and communication included as additional predictors assessed the relative contribution of teamwork when controlling for other collaborative leadership dimensions.

3. Results

3.1 Demographic Characteristics of Respondents

Of 187 respondents, 104 (55.6%) were male and 83 (44.4%) female. The majority held Bachelor's degrees (75.9%), with 21.9% holding Master's degrees. Teaching experience was distributed across all career stages: 34.2% had 6–10 years, 31.0% had 1–5 years, 21.9% had 11–15 years, and 12.9% had 16 or more years. By position, 84.5% were classroom teachers, 8.6% heads of schools, and 6.9% academic masters or mistresses. This distribution ensured perspectives from both classroom practitioners and school leaders were represented, providing a comprehensive view of how teamwork and collaboration are experienced across different organizational levels.

3.2 Descriptive Statistics on Teamwork and Collaboration

Table 1 presents the descriptive statistics for all eight teamwork and collaboration items, organized from the weakest to the strongest agreement levels.

Table 1: Descriptive Statistics on Teamwork and Collaboration (n=187)

S/N	Statement	Disagree (%)	Neutral (%)	Agree (%)	Mean	Std. Dev.
1	Teachers share teaching materials and resources	19.3	17.1	63.6	3.55	1.09
2	Peer learning is practised in this school	17.6	18.2	64.2	3.59	1.07
3	There is effective collaboration among teachers	16.6	15.0	68.4	3.65	1.05
4	Teachers work together in planning lessons	13.4	14.4	72.2	3.78	0.99
5	Teachers support each other in academic activities	11.8	13.4	74.8	3.86	0.95
6	Collaboration improves my professional skills	10.2	11.2	78.6	3.94	0.92
7	Teamwork helps me improve my teaching methods	8.6	9.6	81.8	4.05	0.86
8	Teamwork contributes to my professional development	9.1	10.2	80.7	4.02	0.88
Overall Mean					3.81	0.98

Source: Researcher (2026)

The overall mean of 3.81 was the highest recorded among all three collaborative leadership dimensions examined in the study, indicating that respondents experienced and valued teamwork more strongly than either shared decision-making or communication. The three highest-scoring items teamwork improves teaching methods (mean = 4.05, 81.8% agree), teamwork contributes to professional development (mean = 4.02, 80.7% agree), and collaboration improves professional skills (mean = 3.94, 78.6% agree) all focused on the outcomes or benefits of collaboration, indicating that teachers were highly convinced of collaboration's professional development value.

The three lowest-scoring items, however, concerned the practical mechanisms through which collaboration is sustained. Resource sharing attracted only 63.6% agreement (mean = 3.55), peer learning practice only 64.2% agreement (mean = 3.59), and effective collaboration only 68.4% (mean = 3.65). This internal gap within the construct where belief in collaboration's value consistently exceeded experience of its practical structures is one of the study's most analytically significant findings. Teachers were more convinced about what teamwork could achieve than about the consistent availability of the conditions and structures needed to sustain it.

The comparatively high standard deviation for resource sharing (1.09) and peer learning (1.07) indicates greater variation in experience across schools, suggesting that while some schools had functional sharing and peer learning practices, others had very limited collaborative infrastructure. This variation implies that the overall mean for these items may mask significant inequalities in collaborative conditions between schools within the district.

3.3 Relationship between Teamwork and Collaboration and Teachers' Professional Development

Table 2 presents the results of Pearson's correlation analysis between teamwork and collaboration and teachers' professional development.

Table 2: Pearson Correlation Between Teamwork and Collaboration and Teachers' Professional Development (n=187)

Variable	Teamwork and Collaboration	Professional Development
Teamwork and Collaboration (r)	1.000	0.674
Sig. (2-tailed)		0.000
Professional Development (r)	0.674	1.000
Sig. (2-tailed)	0.000	

Source: Researcher (2026)

Pearson's correlation coefficient of $r = 0.674$ ($p < 0.001$) represents the strongest bivariate relationship among all three collaborative leadership dimensions, surpassing both shared decision-making ($r = 0.612$) and communication ($r = 0.589$). This moderately strong positive correlation indicates that schools characterized by stronger teamwork and collaboration also tended to report higher levels of teacher professional development. The coefficient's magnitude suggests a relationship that is not only statistically significant but practically meaningful large enough to indicate that the quality and frequency of collaborative practice substantially co-varies with professional growth outcomes.

Critically, this finding suggests that day-to-day peer interaction through lesson planning, experience sharing, and mutual academic support may have a more immediate and direct relationship with professional learning than formal participation in decision-making structures or information exchanges with school leaders. Unlike formal training or administrative participation, which occur episodically, teamwork operates continuously within the daily rhythm of teachers' professional lives, creating repeated micro-opportunities for knowledge exchange, reflective dialogue, and skill refinement that accumulate into meaningful professional growth over time.

3.4 Simple Regression Analysis for Teamwork and Collaboration

Table 3 presents the model summary and Table 4 the regression coefficients for the simple linear regression of teamwork and collaboration on teachers' professional development.

Table 3: Model Summary Teamwork and Collaboration Predicting Professional Development

Model	R	R Square	Adjusted R Square	Std. Error of Estimate
1	0.674	0.454	0.451	0.450

Source: Researcher (2026)

Table 4: Regression Coefficients Teamwork and Collaboration

Model	B	Std. Error	Standardized Beta	t	Sig.
(Constant)	1.198	0.198		6.051	0.000
Teamwork and Collaboration	0.668	0.054	0.674	12.370	0.000

Source: Researcher (2026)

Teamwork and collaboration explained 45.4% of variance in teachers' professional development ($R^2 = 0.454$), the highest explanatory contribution among all three collaborative leadership dimensions when each was modelled separately. The positive regression coefficient ($B = 0.668$, $t = 12.370$, $p < 0.001$) confirms that for every one-unit increase in teamwork and collaboration, professional development scores are predicted to increase by 0.668 units, holding other factors constant. The t-value of 12.370 is the largest recorded for any individual predictor in the study, confirming the robustness and precision of this estimate.

The finding that teamwork explained 45.4% of variance substantially more than shared decision-making (37.5%) and communication (34.7%) positions collaborative peer practice as the most powerful single predictor of professional development in this study's quantitative model. The remaining 54.6% of unexplained variance indicates that additional factors including leadership support quality, access to formal training, individual teacher characteristics, and school-level resource conditions also influence professional development, confirming that teamwork should be strengthened as part of an integrated rather than isolated approach.

3.5 Multiple Regression: Teamwork Within the Combined Collaborative Leadership Model

Table 5 presents the multiple regression model incorporating all three collaborative leadership dimensions simultaneously.

Table 5: Multiple Regression Coefficients Combined Model (n=187)

Variable	B	Std. Error	Standardized Beta (β)	t	Sig.
(Constant)	0.687	0.198		3.470	0.001
Shared Decision-Making	0.214	0.061	0.223	3.508	0.001
Teamwork and Collaboration	0.398	0.059	0.402	6.746	0.000
Communication	0.187	0.057	0.196	3.281	0.001
$R^2 = 0.559$	Adjusted $R^2 = 0.552$ $F = 76.582$ $p = 0.000$				

Source: Researcher (2026)

In the combined model, teamwork and collaboration retained the highest standardized Beta ($\beta = 0.402$), confirming that it is the strongest independent predictor of professional development even after controlling for the contributions of shared decision-making and communication simultaneously. The t-value of 6.746 for teamwork was substantially higher than those for shared decision-making (3.508) and communication (3.281), further indicating that teamwork's predictive contribution is more statistically precise and robust than those of the other predictors.

The combined model explained 55.9% of variance in professional development ($R^2 = 0.559$), substantially higher than any single predictor alone, confirming that collaborative leadership operates most effectively when all three dimensions teamwork, decision-making participation, and communication are simultaneously active. The statistical significance of teamwork in both the simple and multiple regression models confirms that its

contribution to professional development is not merely an artefact of its correlation with other variables but represents an independent, substantive influence on teacher professional growth.

4. Discussion

4.1 Teamwork as the Dominant Professional Development Mechanism

The finding that teamwork and collaboration produced the highest mean score (3.81), the strongest Pearson correlation ($r = 0.674$), the greatest simple regression explanatory power ($R^2 = 0.454$), and the highest standardized Beta in the combined model ($\beta = 0.402$) consistently and convergently establishes collaborative peer practice as the most powerful dimension of collaborative leadership for teacher professional development in Kigoma District. This multi-indicator consistency across different statistical methods significantly strengthens confidence in the finding beyond what any single statistical result would support.

This finding is theoretically well-grounded in Distributed Leadership Theory. Harris (2020) argues that distributed leadership enables teachers to become active participants in knowledge generation and sharing rather than passive recipients of leadership decisions, and that this participatory role inherently develops professional competence by exposing teachers to diverse perspectives, challenges, and instructional strategies. Spillane (2021) specifically emphasizes that distributed leadership practice is developed through interactions among organizational members, and that these interactions are not merely mechanisms for sharing existing knowledge but processes through which new professional knowledge is co-constructed. In Kigoma District, where formal external training is constrained by geographical isolation and financial limitations, the daily interactions of collaborative practice joint lesson planning, peer support, experience sharing constitute precisely the kind of accessible, continuous, and contextually embedded professional learning that Spillane describes.

The finding is also consistent with global collaborative learning literature. Vangrieken et al. (2022) found in a systematic review that teacher collaboration promotes professional learning and instructional innovation across diverse international contexts, while Darling-Hammond et al. (2020) confirmed that collaborative professional learning is among the most consistently effective forms of teacher development when it is sustained, focused on instructional issues, and connected to teachers' daily classroom practice. Mugo, Kimani and Wachira (2023) found in Kenya that collaborative learning among teachers contributed to improved instructional practices and professional competence, providing a regionally proximate parallel to the present study's findings in Tanzania.

4.2 The Gap between Collaborative Values and Collaborative Practice

The most analytically significant finding in this objective is the internal gap within the teamwork construct: teachers strongly agreed on the outcomes of collaboration (means ranging from 3.86 to 4.05) but were considerably less consistent in confirming the presence of its practical mechanisms peer learning (64.2%, mean = 3.59) and resource sharing (63.6%, mean = 3.55). This gap between what teachers believe collaboration can achieve and what collaborative structures are actually available to them is not merely a perceptual inconsistency but a practically consequential implementation deficit.

This pattern mirrors what Opfer and Pedder (2019) describe as the challenge of translating individual professional learning dispositions into sustained organizational learning cultures: individual teachers may value collaboration and benefit from it when it occurs, but the absence of formal scheduling, administrative protection, and resource allocation means that collaboration remains vulnerable to displacement by daily management pressures, teaching loads, and the logistical challenges of coordinating activities across busy school timetables. The higher standard deviations observed for peer learning and resource sharing (1.07 and 1.09 respectively) indicate inter-school variation, suggesting that some schools have more developed collaborative structures while others rely entirely on informal, unscheduled peer interaction that occurs when individual teachers happen to be available and motivated simultaneously.

Vangrieken et al. (2022) specifically found that teacher collaboration is most effective for professional development when it is structured, scheduled, and institutionally supported rather than left entirely to individual initiative. The present study's finding that only 64.2% of respondents confirmed peer learning as a practised school activity, while 80.7% agreed that teamwork contributes to professional development, indicates that the limiting factor for professional growth through collaboration in Kigoma District is not teachers' appreciation of collaborative learning but the degree to which schools have institutionalized the structures and practices needed to make it consistent, equitable, and sustained.

4.3 Resource Constraints as a Structural Barrier to Collaborative Practice

The finding that resource sharing was the lowest-scoring teamwork item (63.6%, mean = 3.55) deserves careful contextual interpretation rather than attribution to individual unwillingness. In a district characterized by material resource constraints, limited textbook availability, and inadequate instructional aids, the opportunity for meaningful resource sharing is structurally limited there are simply insufficient materials for teachers to share in ways that significantly amplify what any individual teacher already has access to. This distinction between unwillingness to share and inability to share

meaningfully has important implications for intervention design: simply encouraging teachers to share more is insufficient if the quantity of materials available for sharing remains inadequate.

This finding connects to a broader literature on the material conditions of collaboration in resource-constrained educational settings. Mulkeen (2019) found across Sub-Saharan Africa that professional development sustainability is constrained by inadequate resources, and that collaborative practices, however valued, cannot substitute for the material infrastructure needed for certain forms of professional learning. Komba and Mwakabenga (2023) specifically noted that resource limitations in Tanzanian schools constrain the extent and quality of teacher collaboration, a pattern confirmed in quantitative terms by the present study's resource sharing finding.

4.4 Teamwork as Compensatory Professional Development in Resource-Constrained Contexts

The finding that teamwork is the strongest predictor of professional development in Kigoma District has a specific significance in the district's resource-constrained context. Sanga (2024) observed that external professional development opportunities are severely limited in rural Tanzania, and the present study's quantitative evidence suggests that in this absence, collaborative peer learning has become the primary vehicle through which professional development occurs for the majority of teachers. This compensatory function of teamwork filling the professional development void left by inadequate formal training is consistent with what Opfer and Pedder (2019) describe as the shift from training-dependent to learning-organization models of teacher development, in which professional growth is embedded in the daily work of the school rather than imported periodically from outside.

While this compensatory role is valuable and should be strengthened, it also raises an equity concern. If teamwork quality varies significantly between schools as the standard deviation data suggest then teachers in schools with weaker collaborative cultures receive substantially less professional development than colleagues in schools with stronger cultures, even within the same district and under the same formal resource allocation. This within-district inequality in professional development access is invisible to standard accountability frameworks that focus on training attendance rather than collaborative learning quality, and it requires targeted intervention to address.

5. Conclusion and Recommendations

This study assessed the influence of teamwork and collaboration on teachers' professional development in public secondary schools in Kigoma District, Tanzania. The findings establish with quantitative consistency across multiple statistical measures that teamwork and collaboration is the most powerful dimension of collaborative leadership for teacher professional development in this context. The overall mean of 3.81, the strongest Pearson correlation ($r = 0.674$), the highest simple regression explanatory power ($R^2 = 0.454$), and the dominant standardized Beta in the combined model ($\beta = 0.402$) collectively confirm that collaborative peer practice encompassing joint lesson planning, peer support, experience sharing, and mutual academic assistance is a primary driver of professional growth among teachers in Kigoma District schools.

The study further concludes that while teachers' belief in the value of teamwork is high and consistent, the practical mechanisms of collaboration particularly peer learning structures, resource sharing arrangements, and formalized joint professional activities are insufficiently institutionalized to deliver the full professional development benefit that collaborative practice is capable of providing. This implementation gap between collaborative values and collaborative practice represents the most critical challenge identified in this objective and cannot be resolved through motivational appeals alone.

Based on these findings, the study recommends the following. Heads of schools in Kigoma District should formally schedule and protect dedicated time within the school timetable for collaborative activities including joint lesson planning, peer lesson observation, and subject departmental professional discussion meetings, ensuring that collaboration is treated as an official professional responsibility with institutional status equivalent to classroom teaching duties. Schools should develop structured peer learning frameworks, such as adapted lesson study cycles, in which teachers within subject departments jointly plan, observe, and review lessons on a rotating basis, creating systematic accountability for collaborative professional learning rather than leaving it entirely to individual initiative. District and regional education authorities should prioritize teaching and learning resource provision specifically to schools in Kigoma District to create the material foundation necessary for meaningful resource sharing among teachers, recognizing that collaborative practice cannot substitute for inadequate instructional materials but can only multiply what is already available. The Ministry of Education, Science and Technology should formally recognize school-based collaborative professional learning in teacher performance appraisal frameworks, creating institutional incentives for participation in teamwork activities and making collaborative contributions to school professional development a formally valued dimension of teachers' professional identity. Education authorities should also investigate and address the sources of inter-school variation in teamwork quality within Kigoma District, ensuring that all schools not merely those with particularly collaborative leadership cultures provide teachers with equivalent access to the professional development benefits of structured peer collaboration.

REFERENCES

- Adu, E. O., & Osei, A. (2021). Leadership practices and teacher professional development in Ghanaian secondary schools. *International Journal of Educational Management*, 35(4), 789–802.
- Ahtiainen, R., Sahlberg, P., & Niemi, H. (2022). *Collaborative professional learning in Finnish schools*. Helsinki, Finland: Finnish National Agency for Education.
- Bass, B. M. (1985). *Leadership and performance beyond expectations*. New York, USA: Free Press.
- Bush, T. (2021). *Educational leadership and management: Theory, policy and practice* (5th ed.). London, UK: SAGE Publications.
- Christensen, T., & Jerrim, J. (2024). Inclusive leadership structures and teacher professional learning. *Educational Administration Quarterly*, 60(1), 45–68.
- Creswell, J. W. (2021). *Educational research: Planning, conducting and evaluating quantitative and qualitative research* (6th ed.). London, UK: Pearson Education.
- Darling-Hammond, L., Hylar, M., & Gardner, M. (2020). *Effective teacher professional development*. Palo Alto, CA: Learning Policy Institute.
- Fullan, M. (2021). *Leading in a culture of change* (2nd ed.). San Francisco, CA: Jossey-Bass.
- Harris, A. (2020). Collaborative leadership and school improvement. *School Leadership and Management*, 40(4), 291–298.
- Harris, A., & Jones, M. (2020). COVID-19 school leadership and the future of collaboration. *School Leadership and Management*, 40(4), 243–249.
- Hord, S. M. (1997). *Professional learning communities: Communities of continuous inquiry and improvement*. Austin, TX: Southwest Educational Development Laboratory.
- Komba, W. L., & Mwakabenga, R. J. (2023). Leadership practices and teacher professional development in Tanzanian secondary schools. *International Journal of Educational Development in Africa*, 8(1), 55–68.
- Komba, W. L., & Nkumbi, E. (2022). Teacher professional development in Tanzania. *Journal of International Cooperation in Education*, 8(2), 41–52.
- Kothari, C. R. (2020). *Research methodology: Methods and techniques* (3rd ed.). New Delhi, India: New Age International Publishers.
- Leithwood, K., Harris, A., & Hopkins, D. (2020). Seven strong claims about successful school leadership revisited. *School Leadership and Management*, 40(1), 5–22.
- Li, L., & Liu, H. (2022). Collaborative leadership and teacher development in Chinese secondary schools. *Asia Pacific Education Review*, 23(2), 243–255.
- Mestry, R. (2021). Participative leadership and teacher development in South African schools. *South African Journal of Education*, 41(1), 1–10.
- Ministry of Education, Science and Technology (MoEST). (2021). *Education sector performance report 2020/2021*. Dodoma, Tanzania: Government of Tanzania.
- Mosha, H. J. (2022). *School leadership and teacher professional development in Tanzania*. Dar es Salaam, Tanzania: University of Dar es Salaam Press.
- Mugenda, O. M., & Mugenda, A. G. (2023). *Research methods: Quantitative and qualitative approaches* (3rd ed.). Nairobi, Kenya: Acts Press.
- Mugo, J., Kimani, E., & Wachira, M. (2023). Collaborative learning and teacher professional competence in Kenyan secondary schools. *East African Journal of Education Studies*, 6(1), 78–94.
- Mukama, E. (2022). Leadership practices and teacher professional learning in Rwandan secondary schools. *African Journal of Educational Leadership*, 10(1), 45–57.
- Mulkeen, A. (2019). *Teachers in Sub-Saharan Africa: Policies for effective deployment, management and support*. Washington, DC, USA: World Bank Publications.
- Nguyen, T. T. (2025). Participatory leadership and teacher engagement in professional development. *Educational Management Administration and Leadership*, 53(1), 112–130.
- Nunnally, J. C., & Bernstein, I. H. (1994). *Psychometric theory* (3rd ed.). New York, USA: McGraw-Hill.
- OECD. (2021). *Teachers and school leaders as lifelong learners*. Paris, France: OECD Publishing.
- Opfer, V. D., & Pedder, D. (2019). Conceptualizing teacher professional learning. *Review of Educational Research*, 81(3), 376–407.
- Sahlberg, P. (2021). *Finnish lessons 3.0: What can the world learn from educational change in Finland?* New York, USA: Teachers College Press.
- Sanga, K. (2024). *Leadership practices and teacher professional development in western Tanzania secondary schools*. Dodoma, Tanzania: University of Dodoma Press.
- Spillane, J. P. (2021). *Distributed leadership*. San Francisco, CA: Jossey-Bass.
- Ssekamwa, J. C., & Bakkabulindi, F. E. K. (2021). School leadership and staff development in Ugandan secondary schools. *Makerere Journal of Education*, 14(1), 33–48.
- Tan, C., & Dimmock, C. (2021). Leadership and teacher professional learning in Singapore. *Educational Management Administration and Leadership*, 49(3), 442–458.
- United Republic of Tanzania (URT). (2022). *Education sector development plan 2021/22–2025/26*. Dodoma, Tanzania: Government Printer.
- Vangrieken, K., Meredith, C., Packer, T., & Kyndt, E. (2022). Teacher communities as a context for professional development: A systematic review. *Teaching and Teacher Education*, 61, 47–59.
- Yamane, T. (1967). *Statistics: An introductory analysis* (2nd ed.). New York, USA: Harper and Row.