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School leadership and teacher professional development: A systematic review of mechanisms and practices

Liderazgo escolar y desarrollo profesional docente: una revisión sistemática de mecanismos y prácticas

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Abstract

This systematic review examined how school leadership practices relate to teachers' professional development, focusing on distributed participation, instructional support, relational motivation, shared vision, reflective innovation, and organizational continuity. Following PRISMA 2020, peer-reviewed empirical studies published between January 2019 and September 2026 were searched in Scopus, Web of Science, and ERIC. Of the 896 records identified, 18 studies met the predefined eligibility criteria after duplicate removal, screening, and full-text assessment. The evidence base comprised 10 quantitative, 6 qualitative, and 2 mixed-methods studies from 13 national contexts; the final count was determined by eligibility rather than by a numerical sample-size target. Thematic synthesis identified distributed participation in nine studies, pedagogical support in seven, relational and motivational factors in six, shared vision in five, reflection and innovation in four, and organizational continuity in seven. Across designs, teacher agency, trust, self-efficacy, professional learning communities, and supportive working conditions emerged as plausible mechanisms connecting leadership practices with teacher learning. Because the measures and designs varied substantially, meta-analysis was not appropriate, and the largely observational evidence did not support causal claims. The findings suggest that participation is most conducive to teacher development when combined with instructional feedback, adequate resources, protected time, and sustained collaborative inquiry. The relatively small and heterogeneous evidence base underscores the need for longitudinal and intervention research.

Keywords: educational leadership, teacher education, professional development.

Resumen

Esta revisión sistemática examinó cómo las prácticas de liderazgo escolar se relacionan con el desarrollo profesional docente, centrándose en la participación distribuida, el apoyo pedagógico, la motivación relacional, la visión compartida, la innovación reflexiva y la continuidad organizacional. Siguiendo las directrices PRISMA 2020, se buscaron estudios empíricos revisados por pares, publicados entre enero de 2019 y septiembre de 2026, en las bases de datos Scopus, Web of Science y ERIC. De los 896 registros identificados, 18 estudios cumplieron con los criterios de elegibilidad preestablecidos tras la eliminación de duplicados, el cribado y la evaluación del texto completo. El conjunto de evidencias incluyó 10 estudios cuantitativos, 6 cualitativos y 2 de métodos mixtos, provenientes de 13 contextos nacionales; el número final se determinó en función de los criterios de elegibilidad, y no mediante un objetivo numérico de tamaño muestral. La síntesis temática identificó la participación distribuida en nueve estudios; el apoyo pedagógico, en siete; los factores relacionales y motivacionales, en seis; la visión compartida, en cinco; la reflexión e innovación, en cuatro; y la continuidad organizacional, en siete. Independientemente del diseño de investigación, la agencia docente, la confianza, la autoeficacia, las comunidades de aprendizaje profesional y unas condiciones laborales favorables surgieron como mecanismos plausibles que conectan las prácticas de liderazgo con el aprendizaje de los docentes. Dado que las medidas y los diseños variaban considerablemente, no resultó apropiado realizar un metaanálisis; además, al tratarse mayoritariamente de evidencias observacionales, no es posible establecer relaciones causales. Los hallazgos sugieren que la participación favorece en mayor medida el desarrollo docente cuando se combina con retroalimentación pedagógica, recursos adecuados, tiempo protegido e indagación colaborativa sostenida. La base de evidencias, relativamente pequeña y heterogénea, pone de relieve la necesidad de realizar investigaciones longitudinales y estudios de intervención.

Palabras clave: liderazgo educativo, formación docente, desarrollo profesional.

Introduction

The term “teacher professional development” (TPD) has gained importance in relation to programs that seek to enhance the quality of instruction, accommodate curricular changes, and reduce persistent inequities in educational opportunity. Teacher professional development is not viewed as a series of discrete short courses, but rather as an ongoing and contextual process in which teachers can deepen their subject-matter knowledge, reflect on their instructional decisions, try out innovations, and share information with colleagues. Ávalos (2011) and Darling-Hammond et al. (2017) argue that successful programs attempt to combine experiential learning, teamwork, constructive feedback, and opportunities for continuous practice. Providing teachers with access to training is not, by itself, sufficient to ensure that they will modify their teaching practices.

The institutional environment of a school can either encourage or constrain the development of professional capabilities. Administrators and educational leaders influence education through their effect on the allocation of time, the credibility of new approaches, opportunities to observe instructional practices, and the structures available for examining data. Leadership is a concept that encompasses several relational and organizational practices that enable a school community to establish, endorse, and assess development goals. It is important to recognize that leadership involves more than administrative control. According to Hallinger (2011) and Leithwood et al. (2020), leadership for learning focuses on the relationship between goal setting, educational environments, and staff development.

Distributed leadership challenges the premise that the school principal is solely responsible for driving educational development. Spillane (2006) argues that leadership is an endeavor involving individuals, tasks, and situations. In this sense, teacher engagement, middle leadership, and collaborative problem-solving are not merely ways of dividing work; they also provide opportunities to develop teachers’ professional capabilities. Studies have found links between these arrangements and professional development. However, these links depend on professional autonomy, trust in leadership, and the quality of professional learning communities (Bektaş et al., 2020; Polatcan, 2024; Yang & Chang, 2026).

Instructional leadership offers a complementary perspective. It describes the key responsibilities that leaders must assume with regard to the curriculum, instruction, formative assessment, and the environment in which students learn. Amzat et al. (2022), He et al. (2024), and Thien and Liu (2024) explored the relationship between instructional leadership and teacher professional development. These studies found beneficial associations that may have been mediated by teacher self-efficacy and ongoing professional collaboration. These findings suggest the need to differentiate between leadership approaches that create opportunities and those that are specifically teacher-oriented and translate these opportunities into professional development.

The existing literature does not agree on the conditions necessary for the sustained operation of these systems. Without allocated time or a safe environment, teachers may collaborate only superficially. A collective vision may remain merely symbolic if institutional goals are not connected to classroom inquiry. Assigned responsibilities may increase accountability without enhancing professional autonomy. Various qualitative studies have highlighted the importance of leader facilitation, productive dialogue, institutional frameworks, and coherent professional development pathways (Admiraal et al., 2021; Galdames-Calderón, 2023; Lafferty et al., 2024). The evidence is variable and requires further in-depth investigation.

Existing reviews have addressed teacher leadership, development policy, and leadership preparation as broad concepts (Daniëls et al., 2019; Kirsten, 2020; Schott et al., 2020). However, a more focused synthesis is needed to distinguish mechanisms of influence from organizational prerequisites and teacher-learning outcomes. Accordingly, the present review asked: Which school leadership practices and intermediary processes are associated with teachers' professional development, and under what organizational conditions are these relationships sustained? Six objectives guided the analysis: (1) distributed participation and responsibility; (2) instructional support and feedback; (3) trust, motivation, and commitment; (4) shared vision and collective goals; (5) reflection and pedagogical innovation; and (6) continuity of learning through enabling institutional structures.

Methodology

To ensure transparent and accurate reporting, a comprehensive assessment of empirical studies was conducted using PRISMA 2020 (Page et al., 2021). The review was structured according to population, exposure, outcomes, and context. The categories examined included educators, school administrators, distributed leadership, instructional leadership, innovative or pedagogical leadership, professional learning, professional development, collaboration, teacher autonomy, pedagogical improvement, and primary or secondary schooling. The methodology established eligibility criteria, screening standards, data-extraction parameters, and synthesis domains before the search was conducted. Given the diversity of designs and outcomes in the current literature, which are not directly comparable, a convergent narrative synthesis was selected rather than a meta-analysis (Campbell et al., 2020).

Information sources and reproducible search strategy

The bibliographic search was completed on September 30, 2026, using three databases: Scopus, Web of Science Core Collection, and ERIC. The publication period under review was from January 2019 to September 2026. Titles, abstracts, and keywords were searched using multiple combinations of leadership-related terms and terminology related to teacher learning and development. Backward reference checking and forward citation tracking were used to ensure that no eligible records were missed. Once de-duplication was completed, the records were compared with the database exports. The complete automated search process and its documentation were included in the review record. The core Scopus search expression was:

TITLE-ABS-KEY((“school leadership” OR “distributed leadership” OR “instructional leadership” OR “teacher leadership” OR “pedagogical leadership”) AND (“teacher professional development” OR “teacher professional learning” OR “professional learning communit*” OR “teacher collaboration” OR “professional growth”)) AND PUBYEAR > 2018 AND PUBYEAR < 2027

The search strategy was translated into equivalent topic or descriptor searches for Web of Science and ERIC. Filters were limited to peer-reviewed journal articles published in English or Spanish; neither geographic setting nor study design was restricted. Search exports were merged in a reference-management database, and duplicate records were identified through DOI, normalized title, and bibliographic comparison.

Eligibility criteria and study selection

Studies were eligible if they (a) reported original empirical findings; (b) examined school leadership practices in primary or secondary education; (c) reported or qualitatively explored at least one teacher-level outcome related to professional learning or development; and (d) presented sufficiently clear methods and results for data extraction. Quantitative, qualitative, and mixed-methods studies were eligible. Reviews and conceptual papers, studies focused exclusively on higher education, reports of organizational outcomes without teacher-level professional-development outcomes, non-peer-reviewed publications, duplicate reports based on the same dataset, and reports with insufficient empirical evidence were excluded. Only peer-reviewed journal articles published between January 2019 and September 2026 in English or Spanish were eligible. Reports whose full texts could not be retrieved were recorded separately rather than being assessed as eligible or ineligible.

Two reviewers independently screened titles and abstracts and then assessed the retrieved full texts against the eligibility criteria. Disagreements were resolved through discussion and, when necessary, consultation with a third reviewer. Agreement was Cohen's κ = .83 for title-and-abstract screening and κ = .79 for full-text

assessment. For each excluded full-text report, a single primary reason for exclusion was recorded to avoid double-counting (Figure 1).

Figure 1
PRISMA 2020 flow diagram of study identification and selection

IDENTIFICATION	Records identified from databases **(n = 896)** Scopus = 412; Web of Science = 308; ERIC = 176	Records removed before screening: Duplicates (n = 231)
↓	↓	
SCREENING	Records screened by title and abstract (n = 665)	Records excluded (n = 558)
↓	↓	
RETRIEVAL	Reports sought for retrieval (n = 107)	Reports not retrieved (n = 7)
↓	↓	
ELIGIBILITY	Full-text reports assessed (n = 100)	Reports excluded (n = 82): No leadership focus = 29 No relevant teacher outcome = 24 Review/conceptual article = 17 Duplicate or incomplete evidence = 12
↓	↓	
INCLUDED	Empirical studies included in synthesis **(n = 18)**	Quantitative = 10; qualitative = 6; mixed methods = 2

Note. The selection counts follow PRISMA 2020 reporting conventions; the exclusion categories sum to 82, and the final number of included studies is 18

Rationale for the final number of included studies

The unit of inclusion in this review was an empirical study meeting the prespecified criteria, rather than a numerical quota of publications. Consequently, the final number of studies was determined by the outcome of the systematic selection process, rather than by a statistical sample-size calculation. As shown in Figure 1, 896 records were identified, 231 duplicates were removed, and 665 unique records were screened. Following the exclusion of 558 records at the title-and-abstract screening stage, 107 reports were sought for retrieval, of which seven could not be obtained. Of the 100 full texts assessed, 82 were excluded for documented primary reasons: no school-leadership focus (n = 29), no relevant teacher-level professional-learning outcome (n = 24), review or conceptual design (n = 17), or duplicate or incomplete empirical evidence (n = 12). Accordingly, 18 studies met the eligibility criteria and were retained.

Expanding the corpus solely to reach a numerical threshold, without identifying additional studies that met the same criteria, would compromise the consistency and reproducibility of the selection process. The retained studies represent 13 national contexts and three methodological traditions: 10 quantitative studies, 6 qualitative studies, and 2 mixed-methods studies. This evidence base supports a structured narrative synthesis across six thematic domains. This breadth allows for the comparison of reported mechanisms and contexts, but it does not eliminate the limitations associated with a relatively small and heterogeneous body of evidence. Consistent with PRISMA 2020, this review therefore prioritizes transparent eligibility decisions and complete reporting of the study-selection process (Page et al., 2021).

Data extraction, appraisal, and synthesis

A data-extraction form was used to record the author, year of publication, country, educational level, methodological framework, sample or unit of analysis, type of leadership, professional-growth construct, proposed mediators, and main findings. The form underwent pilot testing. An initial set of five papers was reviewed by two independent assessors to establish the coding criteria. One assessor extracted data from the remaining studies, and the second assessor verified the accuracy of the extracted information. When multiple outcomes were reported,

priority was given to improvements in teacher professional development over overall organizational performance. The decision log distinguished between claims made in the original studies and interpretive statements.

Methodological quality was assessed using the design-appropriate criteria of the Mixed Methods Appraisal Tool (MMAT). These criteria included sample adequacy, measurement relevance, analytical clarity, qualitative consistency, and the inclusion of mixed-methods components (Hong et al., 2018). Quality appraisal was not used as a final exclusion criterion, but it informed the weight assigned to each finding. The studies were first organized by design and context and were then grouped into six overlapping thematic categories, consistent with the review objectives. The synthesis considered conflicting conclusions and differences in the mechanisms and contexts examined, as well as convergent findings. Because most of the quantitative models included different measures, mediators, and estimators, no aggregated effect size was calculated.

Results and discussion

The searches identified 896 records (Scopus, n = 412; Web of Science, n = 308; ERIC, n = 176). After the removal of 231 duplicates, 665 titles and abstracts were screened, and 558 records were excluded. The remaining 107 reports were sought for retrieval; seven could not be obtained. Of the 100 full-text reports assessed, 82 did not meet the inclusion criteria, leaving 18 empirical studies for narrative synthesis (Figure 1). This final set was defined by eligibility criteria rather than by a predetermined sample size. The included studies were published between 2020 and 2026 and represented 13 national contexts. Türkiye and the Netherlands were the most frequently represented settings. Ten studies used quantitative methods, six used qualitative methods, and two used mixed-methods approaches.

The studies included a wide range of analytical purposes, sample units, and working definitions of teacher learning. Quantitative studies commonly used structural equation modeling, multilevel modeling, regression analysis, or mediation analysis to examine teachers' perspectives. The qualitative studies examined professional learning communities, leadership strategies, and the ways in which educators and administrators interpreted collaboration. In school-level research, mixed-methods approaches were used to combine survey data with interviews or case studies related to the research question. Table 1 provides an overview of the evidence base and the main leadership–learning relationship reported in each study.

Table 1

Characteristics and principal contributions of the included empirical studies

Study	Setting / design	Domains	Principal finding
Bektaş et al. (2020)	Türkiye; quantitative	D, M	Trust in the principal and teacher motivation helped explain the link between distributed leadership and professional learning.
van Schaik et al. (2020)	Netherlands; mixed methods	D, R	Collaboration was strengthened when distributed and learning-centred leadership practices were combined.
Belay et al. (2021)	Ethiopia; quantitative	M, C	Supportive organizational climate and professional learning connected leadership with teacher human-capital development.
Admiraal et al. (2021)	Netherlands; qualitative	V, C	School-embedded learning communities supported sustained professional exchange and improvement.
Braseth (2021)	Norway; qualitative	P, V	Clear instructional aims, teacher ownership, and leader support structured mathematics-related professional learning.
Amzat et al. (2022)	Indonesia; quantitative	D, P	Distributed and instructional leadership were associated with teacher professional development.
Gümüş et al. (2022)	Türkiye; quantitative	D, M	Professional learning mediated the relationship between teacher leadership capacity and self-efficacy.
Galdames-Calderón (2023)	Chile; qualitative	D, V	Principal practices supporting participation encouraged teacher leadership and collective school improvement.
He et al. (2024)	Nigeria; quantitative	P, C	Instructional leadership predicted teacher professional development in school-level survey evidence.

Hsieh et al. (2024)	Taiwan; quantitative	D, R	Distributed and instructional leadership were linked with different dimensions of professional collaboration.
Lafferty et al. (2024)	Ireland; qualitative	P, C	Continuous professional development depended on leaders' facilitation, time, and resource allocation.
Polatcan (2024)	Türkiye; quantitative	D, M	Teacher agency accounted for part of the association between distributed leadership and professional learning.
So-Oabeb et al. (2024)	Namibia; mixed methods	P, C	Leaders used several complementary strategies to address teacher learning needs and barriers.
Thien & Liu (2024)	Malaysia; quantitative	P, M	Teacher self-efficacy mediated instructional leadership–learning relations, including nonlinear patterns.
Hulsbos et al. (2025)	Netherlands; qualitative	D, R, C	Patterns of distributed leadership required differing organizational and principal supports.
Özdoğru et al. (2025)	Türkiye; quantitative	M, P	Principal–teacher relationships mediated the association between innovative leadership and professional learning.
Hotham & Perry (2026)	England; qualitative	V, R, C	Networked middle leaders enabled learning through collegial facilitation and feedback structures.
Yang & Chang (2026)	China; quantitative	D, V	Professional learning communities and identity mediated distributed leadership–development links.

Note. D = distributed participation; P = pedagogical support; M = motivation and relationships; V = shared vision; R = reflection and innovation; C = continuity and enabling conditions. Multiple codes per study were permitted

Cross-study distribution of thematic domains

Through thematic coding, six interrelated explanatory domains were identified rather than discrete leadership styles. The most frequently coded category was distributed engagement, which appeared in nine of the 18 studies. This was followed by organizational characteristics and instructional support related to continuity, which were evident in seven studies. Six studies focused on relationships and motivation, five examined shared vision, and four addressed reflective innovation. Figure 2 presents the descriptive frequencies of these domains. Because a single study could be assigned to multiple categories, the frequencies do not sum to 18 and should not be interpreted as combined effect estimates.

Figure 2

Frequency of leadership and professional-learning domains across the included studies

Domain	Studies (n)	Frequency (0–18)
Distributed participation	9/18 (50.0%)	■■■■■■■■■·····
Pedagogical support	7/18 (38.9%)	■■■■■■■·····
Relational motivation	6/18 (33.3%)	■■■■■■·····
Shared vision	5/18 (27.8%)	■■■■■·····
Reflection and innovation	4/18 (22.2%)	■■■■·····
Continuity and enabling conditions	7/18 (38.9%)	■■■■■■■·····

Note. Domain frequencies reflect study-level coding and not effect sizes; each article may contribute to several domains

Distributed leadership: participation must be meaningful

Research on distributed leadership suggests that the most effective form of teacher participation involves sharing administrative responsibilities while also giving teachers genuine control over professional practice. Amzat et al. (2022) found positive associations between distributed and instructional leadership and teachers' professional growth. Polatcan (2024) identified teacher agency as a key mediator, suggesting that participation in formal activities does not guarantee professional development. In addition, Yang and Chang (2026) identified professional learning

communities and professional identity as mediating mechanisms. These findings indicate that teachers need the autonomy to identify problems, make pedagogical decisions, and evaluate multiple strategies for promoting student progress.

The qualitative findings help explain why seemingly similar approaches to distributing leadership may lead to different experiences. Whereas Hulsbos et al. (2025) identified several forms of distributed leadership that require context-relevant support, Galdames-Calderón (2023) highlighted key practices that legitimize teachers' leadership roles. This distinction is important because a school may have numerous committees yet fail to create a professional environment that promotes collaboration. The practical issue is to assess the degree of engagement, the clarity of responsibilities, and the opportunities for teacher-led inquiry, rather than simply the number of leadership positions.

Pedagogical guidance and feedback as proximal conditions

A second consistent pathway was the provision of instructional support. Whereas Amzat et al. (2022) identified an association between instructional and distributed leadership and developmental outcomes, He et al. (2024) found that instructional leadership was a factor that strongly influenced teachers' professional development. Thien and Liu (2024) found that teacher self-efficacy helped explain the relationships between instructional leadership and professional growth. The nonlinear patterns identified suggest that these relationships should not be assumed to increase uniformly across different contexts. At the educational level, qualitative reports help interpret these findings in terms of practical application.

Braseth (2021) described the importance of teacher ownership and collaboration among teacher leaders in the provision of mathematics-centered professional development. In contrast, Lafferty et al. (2024) emphasized the need to align professional development activities with staff needs and available resources. Rather than offering isolated training sessions, support for professional growth should take the form of cycles involving diagnostic assessment, demonstration, feedback, collaborative planning, and follow-up. Leadership is more likely to influence learning when teachers can connect institutional goals to current educational issues.

Trust, motivation, self-efficacy, and professional identity

A key finding from the survey-based research was the role of relational and motivational factors. Bektaş et al. (2020) examined teachers' trust in the principal and motivation as mediators between distributed leadership and professional learning. Similarly, Özdoğru et al. (2025) found that principal–teacher relationships mediated the association between innovative school leadership and professional learning. Gümüş et al. (2022) linked teacher leadership capacity to self-efficacy through professional learning. These findings suggest that trust, agency, and professional confidence help explain why two schools with seemingly comparable leadership structures may provide different learning experiences.

These results do not establish a general causal hierarchy among the processes involved. Most quantitative studies used cross-sectional or perceptual measures, which cannot determine whether motivated teachers are more likely to view leadership positively or whether leadership is more likely to motivate teachers. However, the convergence of several mediation models supports a conceptually coherent interpretation: credible leadership creates an environment in which teachers are willing to seek feedback, disclose challenges, engage in professional dialogue, and persist in improvement efforts.

Shared vision, collaboration, reflection, and innovation

A shared vision was most effective when it was translated into frameworks that could be implemented through inquiry. Admiraal et al. (2021) described initiatives to manage schools as professional learning communities. Whereas Hotham and Perry (2026) proposed a networked middle-leadership model that facilitates the exchange of ideas, support, and feedback among teacher groups, Braseth (2021) emphasized the need for clear professional goals. These perspectives converge on the idea that statements of shared objectives are sufficient to produce results only when teachers participate in goal setting and in assessing evidence of growth.

Research on reflective innovation provides important insights. van Schaik et al. (2020) identified a range of strategies that school leadership may use to encourage collaborative learning. Hsieh et al. (2024) found a relationship between leadership practices and teachers' collaborative behaviors, although the specific pathways varied according to leadership characteristics. The findings indicate that professional reflection is not solely an individual attribute. Its social structure includes mentoring, curriculum development, peer evaluation, productive dialogue, and opportunities to challenge established norms. A more effective way to promote innovation may be through ongoing inquiry cycles rather than occasional calls for new ideas.

Continuity of professional learning and methodological appraisal

The domain of continuity reveals the structural elements that make professional development activities mutually reinforcing. Schools need leaders who strengthen, rather than diminish, professional autonomy. Such institutions require coordinated efforts, clear goals, and access to learning materials and other resources. Studies conducted in the Netherlands, Ireland, Namibia, and England (Admiraal et al., 2021; Hotham & Perry, 2026; Lafferty et al., 2024; So-Oabeb et al., 2024) addressed the importance of practical work in developing professional communities, responding to staff needs, and assigning facilitation roles. The findings indicate that organizational infrastructure is not a trivial administrative issue but an essential component of meaningful professional growth.

The methodological appraisal revealed that the 10 quantitative studies showed substantial patterns of association but provided less evidence of temporal causality. The most common limitations were the inability to adjust for contextual confounding variables, the use of self-reported data, and the concurrent measurement of leadership and teacher outcomes. The six qualitative studies offered valuable insights into processes and organizational contexts, but the transferability of their findings was limited by purposive sampling and small numbers of schools. The two mixed-methods studies provided complementary interpretations of practices and outcomes, but they integrated qualitative and quantitative data in different ways. Table 2 summarizes the strengths and limitations of the evidence.

Table 2

Methodological appraisal and interpretation of the evidence

Evidence group	Main strength	Main concern	Implication for interpretation
Quantitative (n = 10)	Comparisons across teachers and estimated indirect associations	Common-source measures, limited temporality, and contextual confounding	Treat reported coefficients as associations, not causal effects.
Qualitative (n = 6)	Detailed explanations of leadership enactment and school processes	Purposive samples and limited transferability	Use for mechanism development and contextual interpretation.
Mixed methods (n = 2)	Complementary description of practices and contextual barriers	Variable integration of qualitative and quantitative findings	Interpret convergence cautiously and examine design coherence.

Integrated explanatory framework

The evidence can be organized into a four-stage structure (Figure 3). Leadership practices create opportunities and constraints; organizational conditions influence the availability of opportunities; teacher-level processes shape engagement; and professional-learning outcomes emerge from repeated participation. The framework is not intended to suggest that all studies examined the same sequence. Rather, it clarifies the analytical levels that are often conflated in discussions of leadership. It also helps explain why professional growth may be limited when support is motivating but lacks instructional substance, or when collaboration is promoted without autonomy and protected time.

Figure 3

Integrative framework linking leadership practices to professional development

LEADERSHIP PRACTICES	ORGANIZATIONAL CONDITIONS	TEACHER-LEVEL MECHANISMS	LEARNING OUTCOMES
Shared decisions; instructional guidance; middle leadership; collective goals	Protected time; role clarity; supportive climate; relevant resources	Agency; trust; self-efficacy; motivation; identity; collaborative engagement	Reflective inquiry; pedagogical knowledge; instructional adaptation; continued learning

Leadership creates direction and opportunity	Structures make the opportunity actionable	Relationships and professional capacities sustain participation	Repeated cycles consolidate professional growth

Note. The framework represents an integrative interpretation of the evidence and does not imply a statistically estimated causal pathway

Practical implications, limitations, and future research

The synthesis supports a comprehensive approach to school improvement rather than the adoption of a particular leadership style. Leaders may establish teacher-led inquiry groups, connect observation and feedback to teaching and learning goals, develop middle leaders as facilitators, and explicitly allocate time for collaborative analysis. Success should be measured in terms of visible professional practices and evidence of teacher learning, rather than simply satisfaction with administrators. Table 3 provides a straightforward mapping between the six review objectives, leadership actions, and relevant implementation indicators.

Table 3

Leadership strategies and implementation indicators

Objective	Operational leadership action	Indicator for monitoring
1. Distributed leadership	Create teacher-led instructional decisions with recorded responsibilities.	Teachers' substantive participation and resulting decisions implemented.
2. Pedagogical support	Schedule coaching, observation, and feedback cycles tied to lessons.	Completion and quality of feedback-to-practice cycles.
3. Motivation	Build trust, recognize initiative, and support professional agency.	Evidence of voluntary engagement and professional confidence.
4. Shared vision	Co-design a small set of measurable school-learning priorities.	Alignment between collaborative goals and instructional plans.
5. Reflection	Support peer observation, action research, and collective analysis.	Documented reflective inquiry and adaptations to teaching.
6. Continuity	Protect collaborative time and resource multi-term learning communities.	Sustained participation and follow-through across school terms.

This review has several limitations. The evidence base comprised 18 eligible studies, a relatively small and methodologically heterogeneous corpus that limits generalizability. Its size reflects the application of the defined eligibility criteria and should not be interpreted as a statistically determined sample size. Definitions and measures of distributed leadership and teacher professional learning varied across studies, as did school governance, staffing, and available resources. Most of the quantitative evidence was observational, which restricts causal inference. The restriction to English- and Spanish-language publications and the exclusion of non-peer-reviewed literature may have omitted relevant findings; seven reports could not be retrieved for full-text assessment. The heterogeneity of the evidence prevented meta-analysis and a meaningful assessment of publication bias. Future research should use longitudinal or intervention designs, independent observations of teaching practice, clearer contextual reporting, and cross-school comparisons to examine whether teacher agency and professional learning communities mediate sustained changes in instruction.

Conclusions

School leadership supports teachers' professional development when it connects professional voice to tangible learning opportunities. The synthesis suggests that distributed responsibility alone is not sufficient: involvement becomes developmentally beneficial when it is mediated by teacher agency, trust, meaningful decision-making, and collaborative professional frameworks. Instructional leadership contributes an important pedagogical dimension by focusing attention on classroom practice, feedback, and the use of new information.

Motivation, professional identity, and self-efficacy are mechanisms that help explain the link between leadership structures and teachers' participation in learning. A shared vision fosters progress when it is jointly developed and embedded in routines of reflection, mentoring, and inquiry. Therefore, school leaders should combine intentional instructional leadership with shared professional accountability, as these approaches can be complementary rather than competitive.

A sustainable approach involves protected time for learning, capable facilitators, adequate resources, and regular evaluation of improvements in teaching. Because the evidence is largely observational and context-dependent, the findings suggest a plausible integrative explanation rather than a universal causal effect. More rigorous longitudinal and intervention studies are needed to determine whether combinations of leadership strategies produce sustained gains in professional learning and classroom teaching.

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