

REVIEW

Improving teacher professional learning through instructional leadership: For better school climate

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ABSTRACT

This systematic literature review (SLR) examines the growing significance of instructional leadership (IL) in enhancing teacher professional learning (TPL) for better school climate. Synthesizing findings from 31 peer-reviewed articles published between 2016 and 2025, selected through a rigorous PRISMA-based procedure and guided by three research questions: 1) What recent developments have occurred regarding the impact of instructional leadership on teacher professional learning? 2) How have instructional leadership strategies supported the enhancement of teacher professional learning and addressed key challenges? 3) What are the emerging directions for future research on instructional leadership in the context of teacher professional learning? The review addresses the fragmented understanding of IL's role in TPL, explores strategies to overcome implementation challenges, and proposes future research directions. This study provides a comprehensive account of the dynamic influence of IL on teacher learning, offering a foundation for further empirical research and innovative policy development. Despite the increasing scholarly interest, notable limitations persist. Research remains predominantly concentrated in Asian contexts and largely reliant on quantitative methodologies, highlighting the need for more diverse and in-depth qualitative investigations, especially in underrepresented regions. Furthermore, theoretical integration regarding the mechanisms of IL's impact remains underdeveloped. The review calls for future studies to explore contextual mediators, cross-cultural adaptations, and the long-term sustainability of instructional leadership practices to foster continuous teacher growth and educational advancement.

Keywords: Instructional leadership; teacher professional learning; educational improvement, systematic literature review, PRISMA, school climate.

1. Introduction

Teacher professional learning (TPL) has emerged as a critical pillar in global educational reform, aimed at enhancing both student outcomes and teacher quality^[1,2]. The OECD (2024) underscores the development of teachers' professional competencies as vital to achieving sustainable educational progress^[3]. High-quality TPL not only equips teachers to address broader challenges—such as student diversity, curriculum innovation, and digital transformation^[4,5]—but also enables the implementation of more effective teaching strategies,

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thereby improving student learning outcomes ^[6,7]. Moreover, sustained professional development initiatives contribute positively to teacher well-being, job satisfaction, and career longevity ^[8,9].

Despite its recognized importance, the effectiveness of TPL is significantly influenced by contextual factors such as school culture, leadership structures, and resource availability^[10]. Among these, leadership—particularly instructional leadership (IL)—has increasingly been identified as a crucial driver of teacher learning^[11]. Emphasizing goal-setting, curriculum oversight, and the cultivation of supportive learning environments, instructional leadership plays a vital role in promoting teacher collaboration, motivation, and self-directed professional development ^[12,13]. Its impact has been especially pronounced during periods of educational disruption and reform, such as the COVID-19 pandemic ^[14,15].

Nevertheless, several gaps remain in the existing body of research. The mechanisms through which instructional leadership influences teacher learning are not yet clearly articulated, due largely to the lack of theoretical integration across studies ^[16]. Furthermore, the cross-cultural applicability of instructional leadership models has been insufficiently explored, and mediating and moderating variables—such as teacher beliefs and school culture—have not been adequately examined ^[10].

To address these gaps, the present study systematically reviews the literature to investigate the ways in which instructional leadership influences teacher professional learning, with particular attention to contextual variations and influencing factors. Specifically, the review is guided by the following research questions:

RQ1: What recent developments have occurred regarding the impact of instructional leadership on teacher professional learning?

RQ2: How have instructional leadership strategies supported the enhancement of teacher professional learning and addressed key challenges?

RQ3: What are the emerging directions for future research on instructional leadership in the context of teacher professional learning?

By synthesizing contemporary findings, this review seeks to advance theoretical understanding, inform future research aimed at optimizing TPL in diverse educational settings, and offer practical insights for leadership practices that enhance teacher learning.

2. Materials and methods

Research manuscripts reporting large datasets that are deposited in a publicly available database should specify where the data have been deposited and provide the relevant accession numbers. If the accession numbers have not yet been obtained at the time of submission, please state that they will be provided during review. They must be provided prior to publication.

This study adopts a systematic literature review (SLR) approach, following the PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) guidelines to ensure transparency, methodological rigor, and replicability. A systematic review was selected as the appropriate method to synthesize contemporary research on instructional leadership (IL) and teacher professional learning (TPL), while simultaneously identifying theoretical gaps, methodological inconsistencies, and emerging trends within the literature.

The literature search was conducted across three major academic databases: Web of Science, Scopus, and Google Scholar. Web of Science and Scopus were chosen for their comprehensive coverage of high-impact, peer-reviewed educational research, while Google Scholar was included to capture additional relevant studies, particularly those published in regional or less mainstream journals ^[17]

Search queries were created using Boolean operators (AND, OR) based on important terms found during an initial examination of the literature in order to optimize both coverage and precision. To guarantee the inclusion of current and pertinent contributions, the search focused on papers released between January 1, 2016, and March 30, 2025. The start point for 2016 was purposefully chosen to correspond with changes in education around the world brought about by the adoption of the Sustainable Development Goals (SDGs) of the United Nations, particularly SDG 4 (Quality Education), which places an emphasis on inclusive and equitable quality education and lifelong learning. This time frame is also a logical one for examining advancements in IL and TPL because it represents a notable acceleration of pedagogical reform and digital transformation in educational systems around the globe.

In total, 526 articles were retrieved: 151 from Web of Science, 189 from Scopus, and 186 from Google Scholar. The selection process—including identification, screening, eligibility assessment, and data extraction—was conducted systematically and is elaborated upon in the following section.

Table 1. Search strings used in databases

Database	Search String	Count
Web of Science	(ALL = ("Instructional Leadership" OR "Learning-centered leadership" OR "Pedagogical leadership" OR "Principal Leadership") AND ALL = ("Teacher Professional Learning" OR "Teacher Learning" OR "Teacher Professional Development" OR "Staff Development" OR "Teacher Growth"))	151
Scopus	TITLE-ABS-KEY (("Instructional Leadership" OR "Learning-centered leadership" OR "Pedagogical leadership" OR "Principal Leadership") AND ("Teacher Professional Learning" OR "Teacher Learning" OR "Teacher Professional Development" OR "Staff Development" OR "Teacher Growth"))	189
Google Scholar	"Instructional Leadership" OR "Learning-centered leadership" OR "Pedagogical leadership" OR "Principal Leadership" AND "Teacher Professional Learning" OR "Teacher Learning" OR "Teacher Professional Development" OR "Staff Development" OR "Teacher Growth"	186
Total		526

Following the initial identification of studies, a multi-step screening process was implemented to ensure the inclusion of studies most relevant to the research objectives. In the first stage, 270 duplicate records were removed, resulting in 256 unique studies for further evaluation. Subsequently, the remaining studies were assessed against predefined eligibility criteria (Table 2). A total of 194 studies were excluded due to reasons such as the absence of empirical evidence, misalignment with the research objectives, or classification as non-peer-reviewed sources. This screening process yielded 62 studies for full-text review.

Table 2. Inclusion and exclusion criteria

	Inclusion Criteria	Exclusion Criteria
Publication Date	January 1, 2016- March 30, 2025	<January 1, 2016
Articles type	Articles indexed as "journal articles"	Documents classified as conference abstracts, book reviews, editorials, or commentaries
Study Design	Empirical research with quantitative, qualitative, or mixed methods	Literature reviews, commentaries, or meta-analyses
Relevance	Explicitly examines the impact of instructional leadership on teacher professional learning	Does not explicitly examine the impact of instructional leadership on teacher professional learning
Whether Peer-reviewed	Peer-reviewed publications	Not undergone peer review or lack methodological rigor
Language	English	Other than English

To ensure that the final selection of studies directly aligned with the research questions, a full-text review was conducted on the 62 shortlisted articles. During this phase, 12 studies were excluded based on criteria such

as limited relevance, insufficient methodological rigor, or lack of alignment with the review's objectives. Ultimately, 31 studies were retained for inclusion in the systematic review (Appendix A:Table A1).

Following the selection process, key data were systematically extracted from each study and organized to facilitate thematic analysis. A PRISMA-based flow diagram (**Figure 1**) visually represents the literature selection process, thereby enhancing methodological transparency and replicability.

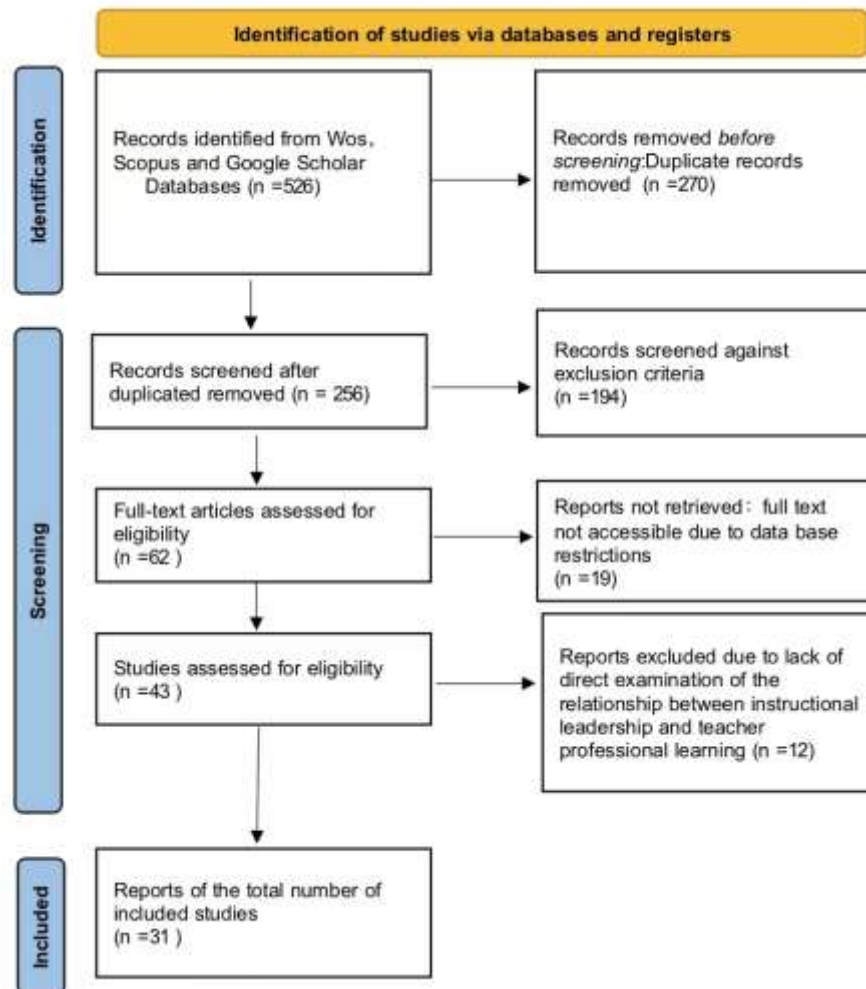


Figure 1. PRISMA flow diagram (Source: Page et al., 2021) ^[18]

3. Results

3.1. General findings

The initial step in this investigation involved developing a preliminary synopsis of the characteristics of the evaluated literature. The systematic search yielded 31 studies that were subsequently classified for analysis. An annual distribution analysis revealed that the highest number of publications occurred in 2024 (Figure 2). Further examination was conducted to identify the journals in which these studies were published over time. Notably, nine of the 31 articles appeared in Educational Management Administration & Leadership, as depicted in **Figure 2**

Journal	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	Year
Teaching and Teacher Education	1										1
In Proceedings of ADVED 2016 2nd International Conference on Advances in Education and Social Sciences	1										1
Educational Administration Quarterly			1				1				2
Compare: A Journal of Comparative and International Education				1							1
Education					1						1
International Journal of Educational Management						1					1
Journal of Cases in Educational Leadership						1					1
Educational Management Administration & Leadership						2		2	4	1	9
Studies in Educational Evaluation						1			1		2
International Journal of Leadership in Education							1				1
Educational Studies								1	1		2
Professional development in education								2			2
KEDI Journal of Educational Policy								1			1
European Journal of Education									1		1
Asian-Pacific Journal of Second and Foreign Language Education									1		1
Leadership and Policy in Schools									1		1
Malaysian Online Journal of Educational Management									1		1
Cambridge Journal of Education									1		1
Humanities and Social Sciences Communications										1	1
Total	2	0	1	1	1	5	2	6	11	2	31

Figure 2. Number of publications per journal and year

All of the included studies are shown in Table A1 of Appendix A, together with the nations and methodological categories that were applied to them. The majority of the research was carried out in Asia (reached 27), America, and Africa, with two countries being studied separately (Figure 3). Additionally, Figure 3 demonstrates that four studies were classified as qualitative approaches and 27 as quantitative approaches.



Figure 3. Number of country & study design of studies

3.2. Main findings

A key component of this research involved content analysis, with findings organized around the study's three research questions. This section begins by summarizing recent advancements regarding the influence of instructional leadership on TPL, emphasizing emerging approaches and patterns. It then examines how instructional leadership has been employed to overcome challenges in promoting TPL. Finally, it identifies

future research directions, focusing on how instructional leadership is evolving to sustain and enhance TPL across diverse educational contexts.

3.2.1. Recent developments

About RQ1 of “What recent developments have occurred about the impact instructional leadership on teacher professional learning?”, recent studies reveal that the impact of instructional leadership on teacher professional learning (TPL) varies substantially depending on contextual factors, including resource availability, school autonomy, governance structures, and cultural values.

In centralized education systems such as Iran, Egypt, and Turkey, school leaders often operate under strict policy constraints, limiting their direct influence over TPL. Instead, they exert influence indirectly by fostering trust, shaping school culture, and providing organizational support^[19,21]. In contrast, principals in decentralized systems, such as the United States, have greater autonomy and can directly lead TPL initiatives through individualized development programs and school-based training^[22,23].

Cultural perspectives further shape instructional leadership practices. In collectivist cultures (e.g., China, Iran, Thailand), instructional leadership emphasizes collaboration, trust-building, and shared goals to promote TPL^[24,25]. In more individualistic cultures (e.g., the United States), instructional leadership has evolved toward a facilitative role, prioritizing the provision of resources, time, and autonomy for self-directed teacher learning^[26].

The educational level also moderates instructional leadership’s impact. instructional leadership tends to have a stronger influence in primary schools due to the generalist nature of instruction, requiring broad-based instructional support^[27,28]. In secondary schools, where instruction is subject-specific, instructional leadership more effectively fosters subject-centered collaboration and professional learning communities^[29,31].

Finally, resource availability plays a significant role. In resource-constrained environments, instructional leadership efforts often focus on addressing basic instructional challenges, while in well-resourced schools, leaders can encourage innovation, experimentation, and continuous professional growth^[32,33].

These results highlight the need of context-sensitive instructional leadership, in which leaders modify their approaches to conform to the structural, material, and cultural realities of their learning contexts.

3.2.2. Instructional leadership strategies

About RQ2 of “How have instructional leadership strategies supported the enhancement of teacher professional learning and addressed key challenges?” while instructional leadership (IL) can enhance teacher professional learning (TPL), its effectiveness in addressing challenges is mediated and moderated by several factors that influence the implementation and perception of leadership strategies.

School culture and interpersonal trust

The presence of a trusting school culture significantly amplifies instructional leadership’s impact. Teachers in high-trust environments feel safer engaging in collaborative learning and instructional experimentation. This aligns with Leithwood et al.^[34], who emphasized the role of leader-teacher relationships in motivating teachers, and with Fullan and Hargreaves^[35], who highlighted trust as a foundation for effective professional development.

Consistency and credibility of leadership

Teachers responded more positively when leaders demonstrated consistency, clear communication, follow-through, and active engagement in instructional activities. Leaders who participated directly in classroom practices, such as co-teaching or instructional walkthroughs, or who had prior teaching experience,

were perceived as more credible and influential. Conversely, inconsistent leadership practices diminished teacher engagement, supporting Hallinger et al.'s assertion that leadership credibility strengthens influence over instructional practice ^[36].

Teacher readiness and prior professional development experience

Teachers' openness to IL initiatives was shaped by their previous professional development experiences. Educators with negative, top-down PD experiences displayed greater resistance and required trust-building efforts, whereas those with positive collaborative PD histories were more receptive. These observations support Opfer and Pedder's view that contextual complexity and prior experience critically shape teacher learning ^[37].

Perceived support and empowerment

Teachers who felt acknowledged, listened to, and given leadership opportunities were more proactive and engaged in their professional learning. This finding corroborates Leithwood et al.'s argument that empowering leadership fosters ownership and sustained engagement in TPL ^[34].

In sum, instructional leadership supports TPL by fostering trust, establishing credibility, responding to teacher readiness, ensuring institutional support, and empowering educators. However, understanding and addressing these mediating and moderating factors is crucial for the strategic, sustainable promotion of professional learning.

3.2.3. Emerging directions for future research

About RQ3 of "What are the emerging directions for future research on instructional leadership in the context of teacher professional learning?", the synthesis of reviewed literature and interview data reveals the increasingly complex and dynamic role of instructional leadership in fostering TPL. Although its importance is well-recognized, several key areas remain underexplored.

Investigating the Long-Term Impact of IL on Teacher Growth

Future research should move beyond immediate outcomes, such as improved lesson planning or increased collaboration, and explore instructional leadership's influence on teachers' long-term motivation, identity development, retention, and resilience. Longitudinal studies are particularly needed to capture these dynamics.

Contextualizing IL Across Diverse Educational Settings

Given that instructional leadership is shaped by institutional, cultural, and policy contexts, future research should explore how instructional leadership functions in underrepresented and rapidly changing environments, such as multilingual, rural, or international school settings ^[38], to better inform contextually appropriate leadership models.

Examining Digital Instructional Leadership in Online and Hybrid TPL

The shift to digital learning environments post-pandemic necessitates greater attention to digital instructional leadership. Research should examine how leaders build online professional learning communities, ensure equitable access to digital resources, and utilize learning analytics to support teacher development ^[39-40].

Advancing Research on Distributed Leadership and Teacher Agency

Emerging leadership models emphasize empowering teachers to lead their own professional development. Studies should investigate how instructional leadership supports distributed leadership structures, peer mentoring, and collaborative learning design ^[41-42].

Unpacking Micro-Level Mechanisms Linking IL to TPL

Further research is needed to explore the specific mechanisms—such as feedback loops, emotional support, and instructional modeling—through which instructional leadership influences TPL. Fine-grained mixed-methods studies employing techniques like social network analysis and design-based research could provide valuable insights ^[43].

Future research should not only identify what works but also delve into how, why, and under what conditions instructional leadership strategies successfully promote professional learning. As global educational landscapes evolve, understanding temporal, contextual, and technological complexities will be crucial for designing inclusive, sustainable, and adaptive professional learning cultures.

4. Discussion

Authors should discuss the results and how they can be interpreted from the perspective of previous studies and of the working hypotheses. The findings and their implications should be discussed in the broadest context possible. Future research directions may also be highlighted.

4.1. Discussion of the findings

This systematic review, encompassing 31 peer-reviewed articles published between 2016 and 2025, provides a contemporary examination of the relationship between instructional leadership and TPL. The findings emphasize instructional leadership's flexible, context-sensitive nature and the evolving role of school leaders as facilitators of teacher growth.

Contextual Variation and Adaptive Leadership

The influence of instructional leadership on TPL is deeply contingent upon governance structures, cultural norms, educational levels, and resource availability. Recent studies demonstrate that uniform leadership practices are often inadequate across diverse educational systems ^[26, 27, 29]. In centralized systems like Turkey and Egypt, instructional leadership often exerts indirect influence by cultivating trust and shaping school culture, whereas in decentralized systems like the United States, leaders can engage more directly with teacher development ^[22-23]. These differences underscore the necessity for adaptive leadership tailored to specific institutional and cultural contexts.

Mediators and Moderators in Overcoming Challenges

The review also highlights mediators and moderators that enhance or inhibit instructional leadership's impact on professional learning. Interpersonal trust emerges as a key mediator ^[34], while structural factors such as time constraints, workload, and collaboration infrastructure serve as significant moderators. Additionally, teacher readiness, previous professional development experiences, and perceptions of empowerment critically shape the effectiveness of instructional leadership strategies ^[41].

Emerging Trends and Strategic Leadership Practices

Several emerging practices point to a shift toward more collaborative and context-specific approaches: building subject-specific professional learning communities^[30], fostering individualized teacher growth in resource-rich environments^[32], and enhancing collective efficacy in collectivist cultures^[25].

4.2. Gaps and future research directions

There are still a number of significant research gaps. First, in order to evaluate the long-term effects of instructional leadership (IL) on teacher professional learning (TPL), longitudinal studies are required. Second, under-represented contexts, such as bilingual, international, and rural schools, where current instructional

leadership models might not be entirely applicable, should receive more attention^[38]. Third, further research into digital forms of instructional leadership is becoming more and more important as hybrid and digital learning settings continue to grow. Fourth, more research is required to investigate how instructional leadership may support teacher agency and creativity without sacrificing organizational coherence, given the increasing focus on distributed and teacher-led leadership models^[41]. Lastly, the majority of current research uses quantitative approaches, which may ignore the complex ways that IL affects teacher learning behaviors. Little is known about how teachers in various situations experience and interpret particular IL activities, such as peer cooperation, formative feedback, instructional modelling, and emotional support^[43]. Future study should use more qualitative and mixed-methods techniques, such as social network analysis, design-based research, and case studies, to address this. By capturing contextual variables, revealing relationship dynamics, and furthering theory-building pertaining to the micro-processes of instructional leadership, these techniques have the potential to enhance the body of evidence.

4.3. Implications for policy and practice

The findings highlight the need for context-responsive leadership policies. Rather than prescribing uniform strategies, reforms should empower leaders with the autonomy and training to adapt instructional leadership practices to their local contexts. To maximize the impact of instructional leadership, investments in building trust, cultivating collaborative cultures, and allocating sufficient time for professional development are essential.

Instructional leadership must be understood as more than supervision; it involves creating networks of emotional, intellectual, and relational support that empower educators to continually refine and improve their practice.

4.4. Limitations of the study

While this review offers valuable insights, several limitations must be acknowledged. First, its reliance on 31 published studies may exclude under-represented perspectives and relevant grey literature. Second, the geographic concentration on Asian contexts limits the generalizability of the findings to other regions, particularly parts of Europe and Latin America. Third, although content analysis was employed to synthesize the results, qualitative data interpretation is inherently subjective, and alternative frameworks may yield different conclusions. Moreover, the predominance of quantitative research restricts a deeper examination of leadership as it is experienced in practice. Finally, while the review proposes directions for future research, these suggestions are conceptual and require empirical validation. Further empirical studies are needed to substantiate and refine the conceptual propositions advanced here.

5. Conclusion

This review offers a comprehensive analysis of the evolving role of instructional leadership in shaping teacher professional development for better school climate. The content analysis of 31 peer-reviewed studies reveals that instructional leaders are increasingly influential in cultivating collaborative learning cultures, enhancing pedagogical practices, and supporting professional development through strategic vision and supportive networks.

In Asian educational contexts, where legislative reforms and accountability demands have elevated the role of school leaders, instructional leadership is emerging as a transformative force. Nevertheless, the review identifies critical gaps, including an over-reliance on quantitative methodologies and a lack of rich, qualitative insights into the lived experiences of teachers and leaders across diverse settings.

By synthesizing recent scholarship, this study underscores the pivotal role of instructional leadership in transforming schools into dynamic learning communities. It also provides a foundation for future empirical inquiry and policy debate. Specifically, it highlights core instructional leadership practices—such as shared decision-making, fostering teacher agency, coaching, and building trust—that significantly impact teacher development.

However, several constraints must be considered. The limited number of studies and their regional concentration may affect the breadth and generalizability of the findings. Additionally, the dominance of quantitative research potentially obscures more nuanced or context-specific perspectives.

Future research should prioritize the use of mixed-methods and qualitative approaches, investigate under-represented educational contexts, and apply diverse theoretical frameworks to deepen our understanding. These efforts will enhance our knowledge of how school leaders can sustainably and contextually support teacher development and improve instructional quality.

Abbreviations

SLR: systematic literature review, IL: instructional leadership, TPL: teacher professional learning, PRISMA: Preferred Reporting Items for Systematic Reviews and Meta-Analyses.

Author contributions

Conceptualization, Xinkun Xie, Bity Salwana Alias and Mohamed Yusoff Bin Mohd Nor; methodology, Xinkun Xie; software, Xinkun Xie; validation, Xinkun Xie, Bity Salwana Alias and Mohamed Yusoff Bin Mohd Nor; formal analysis, Xinkun Xie; investigation, Xinkun Xie; resources, Xinkun Xie; data curation, Xinkun Xie; writing—original draft preparation, Xinkun Xie; writing—review and editing, Bity Salwana Alias, Mohamed Yusoff Bin Mohd Nor; visualization, Xinkun Xie; supervision, Bity Salwana Alias, Mohamed Yusoff Bin Mohd Nor; project administration, Bity Salwana Alias, Mohamed Yusoff Bin Mohd Nor. All authors have read and agreed to the published version of the manuscript.

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Conflict of interest

The authors declare no conflicts of interest..

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Appendix A

Table A1. List of studies review.

Authors	Year	Title	Country of study	Study design
Alazmi & Hammad	2023	“Modeling the relationship between principal leadership and teacher professional learning in Kuwait: The mediating effects of Trust and Teacher Agency”	Kuwait, Asia	Quantitative
Bellibaş & Gümüş	2023	“The Effect of Learning-Centred Leadership and Teacher Trust on Teacher Professional Learning: Evidence from a Centralised Education System”	Turkey, Asia	Quantitative
Bellibaş et al.	2021	“The moderation role of transformational leadership in the effect of instructional leadership on teacher professional learning and instructional practice: An integrated leadership perspective”	Turkey, Asia	Quantitative
Bellibaş et al.	2025	“Instructional leadership and student achievement across UAE schools: Mediating role of professional development and cognitive activation in teaching”	United Arab Emirates (UAE), Asia	Quantitative
Bellibaş et al.	2022	“Linking instructional leadership to teacher practices: The mediating effect of shared practice and agency in learning effectiveness”	Turkey, Asia	Quantitative
Dasci Sonmez et al.	2024	“Teachers’ professional learning: Do instructional leadership and teacher leadership make a difference in Türkiye?”	Turkey, Asia	Quantitative
Dorukbaşı & Cansoy	2024	“Examining the mediating role of teacher professional learning between perceived instructional leadership and teacher instructional practices”	Turkey, Asia	Quantitative
Er	2024	“The relationship between principal leadership and teacher practice: Exploring the mediating effect of teachers’ beliefs and professional learning”	Turkey, Asia	Quantitative
Hallinger et al.	2019	“Does principal leadership make a difference in teacher professional learning? A comparative study China and Thailand”	Thailand and China, Asia	Quantitative
Hammad et al.	2024	“Promoting teacher professional learning in Egyptian schools: the contribution of learning-centered leadership”	Egypt, Africa	Quantitative
He et al.	2024	“School principals’ instructional leadership as a predictor of teacher’s professional development”	Nigeria, Africa	Quantitative
Hendawy Al-Mahdy et al.	2024	“Supporting teacher professional learning in Oman: The effects of principal leadership, teacher trust, and teacher agency”	Oman, Asia	Quantitative
Hosseingholizadeh et al.	2023	“Instructional leadership, and teacher’s collective efficacy, commitment, and professional learning in primary schools: a mediation model”	Iran, Asia	Quantitative
Huang et al.	2024	“Examining principal instructional leadership effects on the rural-urban instructional quality gap in China: The mechanism of teacher professional learning”	China, Asia	Quantitative
Kalman & Şimşek	2023	“The Mediating Effect of School Climate in the Relationship Between School Principals' Learning-Centered Leadership and Teacher Professional Learning in Türkiye”	Turkey, Asia	Quantitative

Authors	Year	Title	Country of study	Study design
Karacabey et al.	2022	“Principal leadership and teacher professional learning in Turkish schools: Examining the mediating effects of collective teacher efficacy and teacher trust”	Turkey, Asia	Quantitative
Kılınç & Zepeda	2024	“Exploring Shared Instructional Leadership Strategies to Improve Teacher Professional Learning: A Case Study in a Southeastern School System”	US, America	Qualitative
Liu & Hallinger	2018	“Principal instructional leadership, teacher self-efficacy, and teacher professional learning in China: Testing a mediated-effects model”	China, Asia	Quantitative
Liu et al.	2016	“Supporting the professional learning of teachers in China: Does principal leadership make a difference?”	China, Asia	Quantitative
Miller & Anthony	2021	“Professional Learning Plan: A Tool to Facilitate Teacher Collaboration and Improve Instructional Practice”	US, America	Qualitative
Mokhtar & Razak	2024	“Principal instructional leadership and teacher self-efficacy as a mediating variable between teacher leadership and teacher professional learning practices in secondary schools in Kelantan”	Malaysia, Asia	Quantitative
Nguyen et al.	2025	“Principal instructional leadership and its influence on teachers’ professional development at Vietnamese primary schools”	Vietnamese, Asia	Qualitative
Pan & Chen	2021	“How principal leadership facilitates teacher learning through teacher leadership: Determining the critical path”	China Taiwan, Asia	Quantitative
Rodzi & Mansor	2016	“The relationship of instructional leadership with professional learning practices in high prestige school in Selangor”	Malaysia, Asia	Quantitative
Savaş & Demirkasımoğlu	2024	“The impact of school- and teacher-related factors on teachers’ professional learning”	Turkey, Asia	Quantitative
Shengnan & Hallinger	2021	“Unpacking the effects of culture on school leadership and teacher learning in China”	China, Asia	Quantitative
Talebizadeh et al.	2021	“Analyzing the relationship between principals’ learning-centered leadership and teacher professional learning: The mediation role of trust and knowledge sharing behavior”	Iran, Asia	Quantitative
Tayag & Ayuyao	2020	“Exploring the relationship between school leadership and teacher professional learning through structural equation modeling”	Philippines, Asia	Quantitative
Thien & Liu	2024	“Linear and nonlinear relationships between instructional leadership and teacher professional learning through teacher self-efficacy as a mediator: a partial least squares analysis”	Malaysia, Asia	Quantitative
Thien et al.	2023	“Configuring effects of learning-centred leadership in promoting teacher professional learning and teacher self-efficacy”	Malaysia, Asia	Quantitative
Thien & Yeap	2023	“Investigating a multiple mediated-effects model of instructional leadership and teacher professional learning in the Malaysian School Context: A partial least squares analysis”	Malaysia, Asia	Quantitative

Table A1. (Continued)