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REVIEW ARTICLE

Instructional leadership and teacher self-efficacy for school improvement: A systematic review of empirical studies

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ABSTRACT

This study addresses a crucial aspect of school success in the context of current educational reforms by methodically examining how instructional leadership indirectly affects student outcomes through teacher self-efficacy. In order to synthesise methodological approaches, research trends, and conceptual frameworks across various educational contexts, bibliometric mapping and qualitative content analysis were integrated into a systematic literature review of 34 peer-reviewed empirical studies published between 2015 and 2025, adhering to PRISMA 2020 guidelines. The results demonstrate that by defining school missions, overseeing instructional programs, and creating a supportive learning environment, instructional leadership raises teacher self-efficacy and boosts teachers' confidence in their ability to deliver instruction, manage the classroom, and engage students. Although the review shows a preponderance of quantitative designs, a narrow cross-cultural breadth, and a dearth of longitudinal and mixed-methods research, which limit subtle contextual insights, these processes do contribute to increased student accomplishment. The report offers evidence-based suggestions for leadership development programs that aim to improve student learning outcomes by increasing teacher efficacy. In addition to highlighting methodological and contextual priorities for future research, this review adds originality and value to the field by providing an integrative conceptual framework that elucidates the psychological processes connecting instructional leadership to educational outcomes.

Keywords: instructional leadership; PRISMA; student outcome; systematic literature review; teacher self-efficacy

1. Introduction

Over the past decade, improving school outcomes and quality has been a central focus of educational research worldwide. By influencing the teaching and learning environment, instructional leadership has become a crucial school-level component that propels academic performance[1]. Principals' and school leaders' efforts to establish school objectives, oversee the curriculum, keep an eye on instruction, and create a positive learning environment are all included in instructional leadership[2]. These activities are essential to improving professional development and teacher effectiveness[3]. As a result, more and more academics studying educational administration are attempting to figure out how instructional leadership affects teachers' self-efficacy.

Researchers are conducting reviews to synthesise data on the relationship between teacher self-efficacy

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and instructional leadership as a result of the growing number of empirical studies. Previous reviews frequently concentrate on certain mediating factors or on leadership and teacher self-efficacy in general[4]. Recent research has shown that the relationship between instructional leadership and student learning outcomes is mediated by teacher self-efficacy, with professional development, teacher collaboration, and school climate being identified as key mechanisms[5]. The triadic relationship between instructional leadership, teacher self-efficacy, student accomplishment, educational outcomes, and school quality hasn't been thoroughly studied in an integrated framework, though. Although the extent of leadership impacts has been measured by meta-analyses[6,7], little is known about the psychological mechanisms behind these effects, notably teacher self-efficacy.

A review of the research that links instructional leadership, teacher self-efficacy, student achievement, educational outcomes, and school quality has been prompted by the decades' worth of accumulated empirical studies. The majority of literature reviews have concentrated on meta-analysis or the synthesis of important findings[4,8,9]. Nevertheless, there are few research that methodically combine data from many cultural and geographical contexts, which restricts our knowledge of how leadership techniques affect teacher self-efficacy around the world[10,11].

In general, there has been a growing movement to review the literature on the relationship between teacher self-efficacy and instructional leadership. To map out the nature of the pertinent literature, the discipline has been lacking a systematic evaluation with a more comprehensive viewpoint. This timeline was chosen to cover the last ten years of educational innovations, policy changes, and empirical research on instructional leadership and teacher self-efficacy in order to guarantee that the synthesis reflects the most recent evidence relevant to contemporary school improvement approaches[12]. Emerging themes that are extremely pertinent to modern school leadership practice are captured during this time, including data-driven instructional management, digital pedagogical techniques, and cross-cultural adaptations of leadership frameworks[13]. Our study gives priority to research that directly informs contemporary leadership methods and educational environments, even though earlier studies may provide insightful historical perspectives.

By examining peer-reviewed empirical research conducted between 2015 and 2025, this systematic literature review seeks to close these gaps by outlining the conceptual pathways via which instructional leadership affects student outcomes through teacher self-efficacy. The following research questions have been developed in order to do this.

RQ1: How is teacher self-efficacy impacted by instructional leadership?

RQ2: What role does teacher self-efficacy play in mediating the link between educational outcomes and instructional leadership?

RQ3: What research gaps still exist?

2. Theoretical perspective

Previous reviews of the literature in the field of educational administration serve as the foundation for this investigation[1,7,14]. Bellibaş and Gümüş (2019) state that review research in this area typically fall into three groups[14].

By identifying commonly cited works, well-known authors, popular keywords, research trends, study locations, and intellectual networks, bibliometric mapping—the first category—seeks to detect patterns in the body of current literature. For example, Hallinger and Kovačević (2019) used techniques like citation and co-citation analysis, keyword clustering, and descriptive statistics to thoroughly examine 22 journals related

to educational administration in order to identify prominent academics, regional research activity, schools of thought, and recurrent themes[7].

As demonstrated by Hammad et al. (2022), the second type consists of content analysis reviews, which methodically examine publications to investigate prevailing research themes, conceptual foundations, and methodological techniques[15].

The third type includes integrative syntheses, like those by Gümüş et al. (2021) and Oplatka and Arar (2017), which combine results from many studies to highlight overarching themes or draw broader conclusions[1,16].

Furthermore, some studies combine aspects of content analysis and bibliometrics in a mixed-methods approach. As an illustration, consider Gumus et al. (2018), who looked into the prevalence and development of leadership models in educational administration as well as methodological preferences, researcher leadership, and changing study goals over time[6].

The conceptual framework used in this study is in line with the mixed-methods approach, incorporating aspects of content analysis and bibliometrics. Our analysis focusses specifically on uncovering trends in journal publications, study design features, research geographical distribution, major findings, growth trends, and the general trajectory of academic output development in the discipline.

3. Research methods

3.1. Selection of papers

We started by performing a thorough literature study in order to provide an overview of current studies. The literature search focused on publications that discussed the connection between teacher self-efficacy and instructional leadership. The following search parameters were applied in order to identify the most relevant articles (**Table 1**).

The procedure was guided by predetermined inclusion and exclusion criteria (**Table 1**). Studies released between January 2015 and April 2025 were included in the search. Only English-language, peer-reviewed papers pertaining to education were kept. Theoretical articles, preprints, and grey literature were not included.

All records were reviewed separately by two reviewers in three steps: full-text evaluation, title/abstract review, and duplication elimination. Discussions were used to settle disagreements, and if agreement could not be reached, a third reviewer was engaged.

Table 1. Inclusion and exclusion criteria.

Criterion	Inclusion	Exclusion
Topic, Abstract,Keywords	Instructional leadership & teacher self-efficacy	
Population	Education-related	Non-education
Date	≥2015.1-2025.4	＜2015
Data collection source	Both original and secondary research were considered	
Language	English	Other languages
Publication Type	Peer-reviewed journal, bookchapter, conference papers, dissertations	Preprints, grey literature, and editorials
Study design	Qualitative research, quantitative research, mixed research	Theoretical research
Access Status	Open Access Content	

Note: *The "Data" inclusion criteria was set to ≥2015.1-2025.4 in order to streamline the selection of papers that concentrate on the impact of instructional leadership on teacher self-efficacy throughout the past ten years.*

258 records were found in the first search (**Table 2**). There were 227 studies left after duplicates were eliminated. 120 were eliminated during title/abstract screening and 74 during full-text review for lack of relevance or inadequate methodological quality, in accordance with Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) 2020 standards. 34 studies were ultimately kept for synthesis.

Table 2. T. Search results by database.

	Scopus	**Web of Science**	**Taylor&Francis**	**Wiley**	**Google Scholar**
Search keywords	Article title, Abstract, Keywords(ALL=(instructional leadership)) AND ALL=(teacher self-efficacy)	Abstract (ALL=(instructional leadership)) AND ALL=(teacher self-efficacy)			Keywords (ALL=(instructional leadership)) AND ALL=(teacher self-efficacy)
Amount	91	72	60	9	26
Total	258				

Figure 1 showed the flow diagram for the (PRISMA), which was utilised in the publication selection procedure.

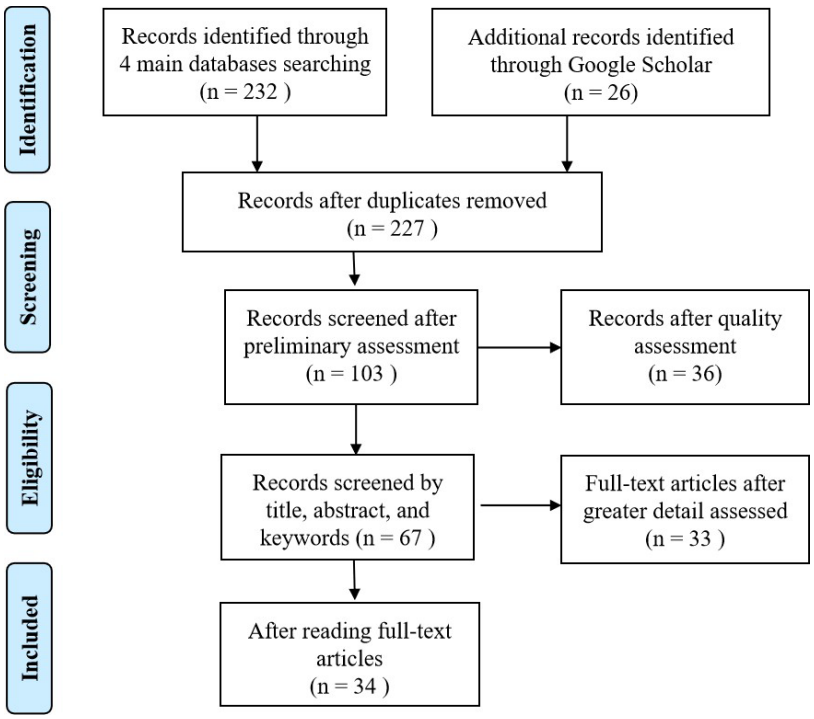

Figure 1. PRISMA flow diagram of the study.

3.2. Coding procedures and analysis

The research methodology (qualitative, quantitative, or mixed methods), the data source (such as survey-based or national datasets), the key findings focus, the key affecting dimensions, the mediating path (rational, emotional, organisational, etc.), and the mediating variable (classroom instruction, student motivation, etc.) were all systematically documented for each article as part of our data analysis process.

The Principal Instructional Management Rating Scale (PIMRS), created by Hallinger and Murphy (1986), and Bandura's (2001) social cognitive theory served as the basis for the coding scheme[17,19]. Independent coding was done by two researchers, and disagreements were settled by consensus after inter-coder reliability was examined.

Microsoft Excel was used for coding and descriptive statistics, and it also allowed for the visualisation of new patterns. After that, themes pertaining to findings, influencing factors, and mediating mechanisms were synthesised using content analysis.

4. Results

4.1. General findings

The literature search produced 34 papers that were categorised. a steady increase in the body of literature following 2020. To find out which journals the publications had appeared in throughout time, they were further examined. As shown in **Figure 2**, there were articles published in 27 journals, with the most in Educational Management Administration and Leadership, which had five studies.

Journal	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	Year
Journal of Educational Administration		1									1
International Journal of Educational Management			1			1					2
Educational Management Administration and Leadership			1		2	1	1				5
International Journal of Instruction			1								1
School Leadership Review				1							1
Elementary Education Online					1						1
Social Psychology of Education					2						2
International Journal of Progressive Education					1						1
Academic journal of interdisciplinary studies					1						1
International journal of leadership in education						1			1		2
Leadership and policy in schools						1					1
Journal of Theoretical Educational Science						1					1
Egitim ve Bilim						1					1
Cogent Education							1				1
School Effectiveness and School Improvement							1				1
Kasetsart Journal of Social Sciences							1				1
SAGE OPEN								1			1
Journal of School Administration Research and Development								1			1
Educational Studies								1			1
Educational Management Administration & Leadership								1			1
International Journal of Educational Policy Research and Review								1			1
Frontiers in education									1		1
Development Southern Africa									1		1
Malaysian Online Journal of Educational Management									1		1
Jurnal Ilmiah Ilmu Terapan Universitas Jambi									1		1
Humanities and Social Sciences Communications									1		1
Education										1	1
	0	1	3	1	7	6	4	5	6	1	34

Figure 2. Number of publications per journal and year.

According to **Table 3**'s classification, only one publication used qualitative methods, five used mixed methods, and 28 used quantitative methods. Table A1 in Appendix A contains a list of all considered papers, the authors' stated techniques, and the assigned methodological categories.

Table 3. Research methods of 34 empirical studies.

Qualitative		**Quantitative**		**Mixed Methods**		
Interviews	1	Survey	28	Interview+Survey	2	
				Survey	3	
Total	1		28		5	34

Further research revealed that the majority of the study was conducted in Asian countries, then Europe and North America, and finally Africa. Additionally, there was one instance of a secondary data study involving many countries (**Table 4**).

Table 4. Number of the country of studies.

Region	Country	Count
Asia (25)	Turkey (7), Indonesia (4), Malaysia (4), China (3), Iran (2), Azerbaijan (1), Thailand (1), Israel (1), Philippines (1), Vietnam (1)	**25**
North America (3)	US (3)	**3**
Europe (3)	Norway(3)	**3**
Africa (2)	South Africa (1), Nigeria (1)	**2**
Multi-nation (1)	34 countries (1)	**1**
Total		**34**

Table 5 shows the list of studies reviewed in this research.

Table 5. List of studies review.

Authors	Year	Title	Country of study	Research design
Anselmus Dami et al.[20]	2022	"Principal self-efficacy for instructional leadership in the perspective of principal strengthening training: Work engagement, job satisfaction and motivation to leave"	Indonesia, Asia	Quantitative
Akman[21]	2021	"The relationships among teacher leadership, teacher self-efficacy and teacher performance"	Turkey, Asia	Quantitative
Bada et al[22]	2024	"The effectiveness of teachers in Nigerian secondary schools: The role of instructional leadership of principals"	Nigeria, Africa	Quantitative
Bellibas and Liu[23]	2017	"Multilevel analysis of the relationship between principals' perceived practices of instructional leadership and teachers' self-efficacy perceptions"	Multination	Quantitative
Bozkurt et al[24]	2021	"How leadership, school culture, collective efficacy, academic self-efficacy, and socioeconomic status affect student achievement"	Turkey, Asia	Quantitative
Brandmo et al[25]	2021	"Antecedents of department heads' job autonomy, role clarity, and self-efficacy for instructional leadership"	Norway, Europe	Quantitative
Cansoy and Parlar[26]	2018	"Examining the relationship between school principals' instructional leadership behaviors, teacher self-efficacy, and collective teacher efficacy"	Turkey, Asia	Quantitative
Chen and Rong[27]	2023	"The Moderating Role of Teacher Collegiality in the Relationship Between Instructional Leadership and Teacher Self-Efficacy"	China,Asia	Quantitative
Çoban et al.[28]	2023	"Trust in principals, leaders' focus on instruction, teacher collaboration, and teacher self-efficacy: Testing a multilevel mediation model"	Turkey, Asia	Quantitative
Daing and Mustapha[29]	2023	"School administrators' instructional leadership skills and teachers' performance and efficacy in senior high schools in the national capital region, Philippines"	Philippines, Asia	Quantitative
Elfira et al.[30]	2024	"How does principal's instructional leadership shape teacher performance mediated by teacher self-efficacy in Indonesian education context? "	Indonesia, Asia	Quantitative
Goddard et al.[31]	2021	"Principal efficacy beliefs for instructional leadership and their relation to teachers' sense of collective efficacy and student achievement"	US, North America	Quantitative
Hallinger and Hosseingholizadeh [32]	2020	"Exploring instructional leadership in Iran: A mixed methods study of high-and low-performing principals"	Iran, Asia	Mixed Methods

Authors	Year	Title	Country of study	Research design
Hallinger et al.[33]	2018	"Do beliefs make a difference? Exploring how principal self-efficacy and instructional leadership impact teacher efficacy and commitment in Iran"	Iran, Asia	Quantitative
Hompashe[34]	2024	"Does instructional leadership drive educational improvement in South Africa? Evidence from Oaxaca-Blinder decomposition analysis"	South Africa, Africa	Quantitative
Ismail et al.[35]	2018	"Instructional Leadership and Teachers' Functional Competency across the 21st Century Learning"	Malaysia, Asia	Quantitative
Jalapang and Raman[36]	2020	"Effect of instructional leadership, principal efficacy, teacher efficacy and school climate on students' academic achievements"	Malaysia, Asia	Quantitative
Johnson and Williams[37]	2023	"Mathematics Instructional Leadership: Self-Efficacy Development for Elementary School Administrators"	USA, North America	Mixed methods
Kılınç et al.[38]	2021	"Antecedents and outcomes of teacher leadership: The role of teacher trust, teacher self-efficacy and instructional practice"	Turkey, Asia	Quantitative
Kılınç et al.[39]	2023	"Investigating the association between principal learning-centred leadership and teacher instructional practices: The mediating roles of teacher self-efficacy and collective teacher efficacy"	Turkey, Asia	Quantitative
Liu et al.[40]	2022	"To what extent is shared instructional leadership related to teacher self-efficacy and student academic performance in China? "	China, Asia	Quantitative
Ma and Marion[41]	2021	"Exploring how instructional leadership affects teacher efficacy: A multilevel analysis"	China, Asia	Quantitative
McBrayer et al.[42]	2020	"Instructional leadership practices and school leaders' self-efficacy"	US, North America	Quantitative
Mokhtar and Razak[43]	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.[44]	2025	"Principal instructional leadership and its influence on teachers' professional development at Vietnamese primary schools"	Vietnam, Asia	Qualitative
SumiAti and NiEmted[45]	2020	"The impact of instructional leadership on indonesian elementary teacher efficacy"	Indonesia, Asia	Quantitative
Özdemir et al.[46]	2020	"Teachers' Self-Efficacy Perceptions in Terms of School Principal's Instructional Leadership Behaviours"	Turkey, Asia	Mixed methods
Qadach et al.[47]	2020	"Instructional leadership and teachers' intent to leave: The mediating role of collective teacher efficacy and shared vision"	Israel, Asia	Quantitative
Ridwan et al.[48]	2024	"INSTRUCTIONAL LEADERSHIP AND TEACHER SELF-EFFICACY ON JOB SATISFACTION: THE MEDIATING EFFECT OF SCHOOL CLIMATE IN INDONESIAN ISLAMIC SENIOR HIGH SCHOOLS"	Indonesia, Asia	Mixed methods
Sindhvad et al.[49]	2022	"Factors influencing instructional leadership capacity in Baku, Azerbaijan"	Azerbaijan, Asia	Mixed methods
Siriparp et al.[50]	2022	"The effects of principal instructional leadership, collective teacher efficacy and teacher role on teacher self-efficacy: A moderated mediation examination"	Thailand, Asia	Quantitative
Skaalvik[51]	2020a	"School principal self-efficacy for instructional leadership: Relations with engagement, emotional exhaustion and motivation to quit"	Norway, Europe	Quantitative

Authors	Year	Title	Country of study	Research design
Skaalvik[52]	2020b	"Self-efficacy for instructional leadership: Relations with perceived job demands and job resources, emotional exhaustion, job satisfaction, and motivation to quit"	Norway, Europe	Quantitative
Thien and Liu[53]	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

Table 5. (*Continued*)

4.2. Results of content analysis

When presenting the findings, we not only descriptively synthesised recurrent themes but also critically assessed the study's quality, taking into account the strength of the evidence, the validity of the measures, and the robustness of the research methods. This two-pronged strategy makes sure that the results are interpreted cautiously and identifies both places with strong evidence and those with weaker evidence.

4.2.1. Key findings focus

Across all reviewed articles, instructional leadership appears as a primary topic, as seen in **Figure 3**. Teacher self-efficacy is often discussed in this context, and a number of research have shown how collective efficacy indirectly relates to it. Throughout the literature, the topic of teacher efficacy is discussed in a wide-ranging and complex way. Professional development (8), cooperation (7), collective teacher efficacy (7), school atmosphere (24 mentions), work satisfaction (16), educational management (15), school improvement (13), student accomplishment (12), and teacher performance (6) are the themes that appear most frequently. These theme areas align with the conceptual domains found in Bandura's (2001) framework on teacher self-efficacy and Hallinger and Murphy's (1986) Principal Instructional Management Rating Scale (PIMRS)[17,19].

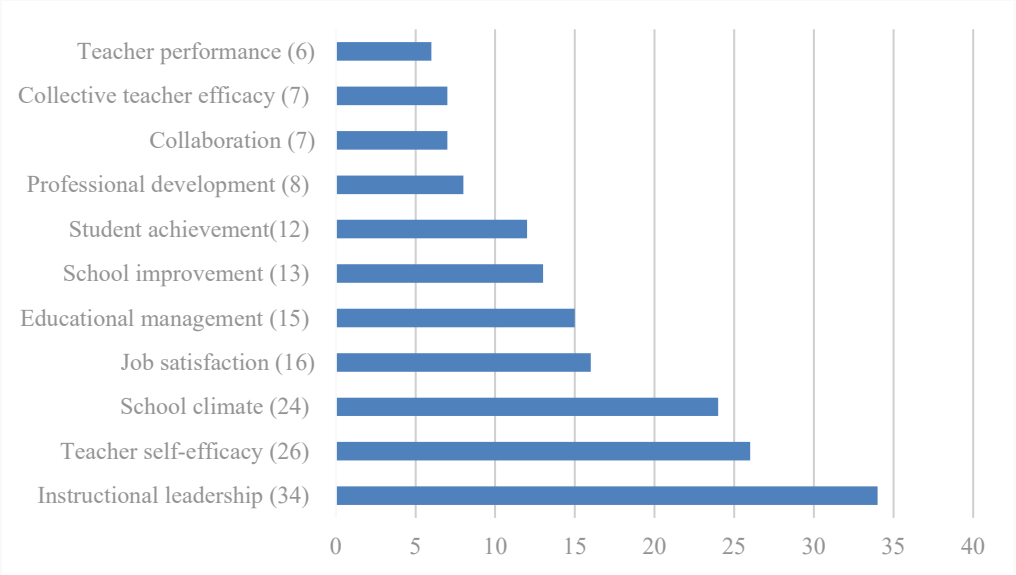

Figure 3. Findings focused in reviewed studies.

It should be noted that many research mostly relied on cross-sectional survey designs, even if these thematic clusters are consistent across studies. These designs restrict the strength of causal claims about how instructional leadership affects teacher self-efficacy, even though they are helpful for finding correlations. Furthermore, a number of research lacked sufficient information regarding validity checks and sample techniques, which casts doubt on how broadly applicable their conclusions might be.

4.2.2. Key affecting dimensions

Since the late 20th century, there has been an increase in scholarly interest in the crucial role that school leadership plays in both student achievement and institutional reform[54,55]. One of the most well-known models in this area is the Principal Instructional Management Rating Scale (PIMRS), which was developed by Hallinger and Murphy in 1986. This paradigm outlines three essential components of instructional leadership:

Determining the school's mission includes establishing and effectively communicating clear educational objectives, developing teacher capacity, and encouraging ongoing improvement.

Managing the educational program includes actively monitoring instructional strategies, ensuring curriculum coherence, and rigorously monitoring students' academic progress.

The main tactics for creating a positive school climate are safeguarding instructional time, encouraging professional growth, maintaining a visible leadership presence, and providing staff and students with inspiring rewards[56,57]. This model continues to be a key component of both the theoretical research and the practical application of instructional leadership.

Nevertheless, a more thorough examination shows variations in these research' methodological rigour. For instance, although some studies used longitudinal monitoring or multi-level modelling to improve validity, others relied solely on self-reported impressions without triangulation, which raised the possibility of common-method bias. Similar to this, despite the PIMRS framework's widespread use, a number of research modified it without disclosing psychometric revalidation, which raises concerns about the validity of some dimensions when applied in various cultural contexts. In this study, we identified the specific elements of instructional leadership that affect teachers' self-efficacy, as indicated in **Appendix Table A1**. Furthermore, **Appendix Table A2** shows the distribution of dimensions in the investigations.

According to this study, these aspects play a critical role in determining teacher self-efficacy, which in turn affects teacher motivation, the calibre of instruction, and eventually student accomplishment. **Appendix Table A2** summarises the study of pertinent literature and demonstrates the frequency of discussion of each subject area across research studies, suggesting the relative importance of promoting teacher effectiveness and professional development.

However, because of the inconsistent quality of the evidence, care should be used when interpreting frequency counts as measures of conceptual weight. Stronger empirical support is not always indicated by high citation or reporting frequency; instead, it may be a reflection of disciplinary trends or the availability of particular measurements.

4.2.3. Key dimensions affected educational outcome

Simultaneously, teacher self-efficacy, which is based on Bandura's (2001) social cognitive theory, describes how competent teachers believe they are at organising, carrying out, and overseeing learning activities that support students. Perera et al. (2019) discovered that it had a substantial impact on teachers' instructional choices, emotional resilience, professional satisfaction, tenacity in the face of adversity, and student achievement outcomes[58].

Teacher self-efficacy is commonly conceptualised across three interconnected dimensions rather than as a single attribute:

Confidence in one's ability to provide excellent education is known as instructional efficacy[59]; classroom management efficacy is the belief in one's capacity to regulate student behaviour and preserve an

ordered learning environment[60]; student engagement efficacy is the conviction that one can motivate and sustain students' participation in the learning process[61].

Even though previous research frequently defines teacher self-efficacy as a result moulded by elements like professional learning opportunities and background characteristics, leadership—particularly by school principals—has come to be recognised as a significant influencing factor. But this influence can be indirect and work through mediating factors like job satisfaction.

As shown in **Appendix Table A3**, we determined which particular aspects of teacher self-efficacy in this study influence educational results.

But it's crucial to remember that different dimensions have different levels of evidence strength. For example, classroom management and engagement efficacy are frequently evaluated through more limited case studies or teacher self-ratings, which restricts external validity, whereas instructional efficacy is continuously supported by large-sample, multi-context studies. Furthermore, it is challenging to determine whether increased self-efficacy propels student accomplishment or the other way around because many research rely on correlational designs, which limits causal inference.

The information compiled in **Appendix Table A3** demonstrates the multifaceted character of teacher self-efficacy and its significant impact on a variety of learning outcomes. The two dimensions that have been discovered are instructional efficacy, which is present in all literature, and student engagement efficacy, which has the greatest number of supportive studies overall. This implies that a teacher's confidence in their ability to inspire and maintain student participation is essential for developing deep learning and long-term academic performance in addition to classroom dynamics.

However, because of shared-method variance and social desirability, the prevalence of self-reported outcome measures creates an inflating risk. Triangulating teacher reports with student achievement data or classroom observations, which would have offered better validity evidence, was only done in a tiny subset of trials.

4.2.4. Mediating variables path

Furthermore, we identified the mediating pathways in the association between educational outcomes and teacher self-efficacy (**Figure 4**). Additionally, as illustrated in **Figure 5**, we identified the mediating elements that were most frequently employed in each path.

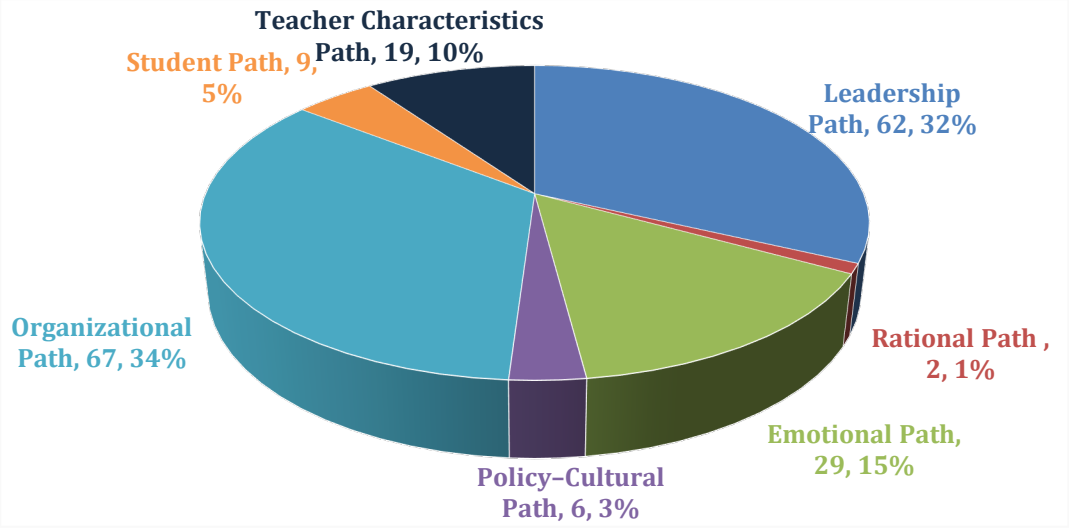

Figure 4. Mediating paths in the relationship between teacher self-efficacy and educational outcomes.

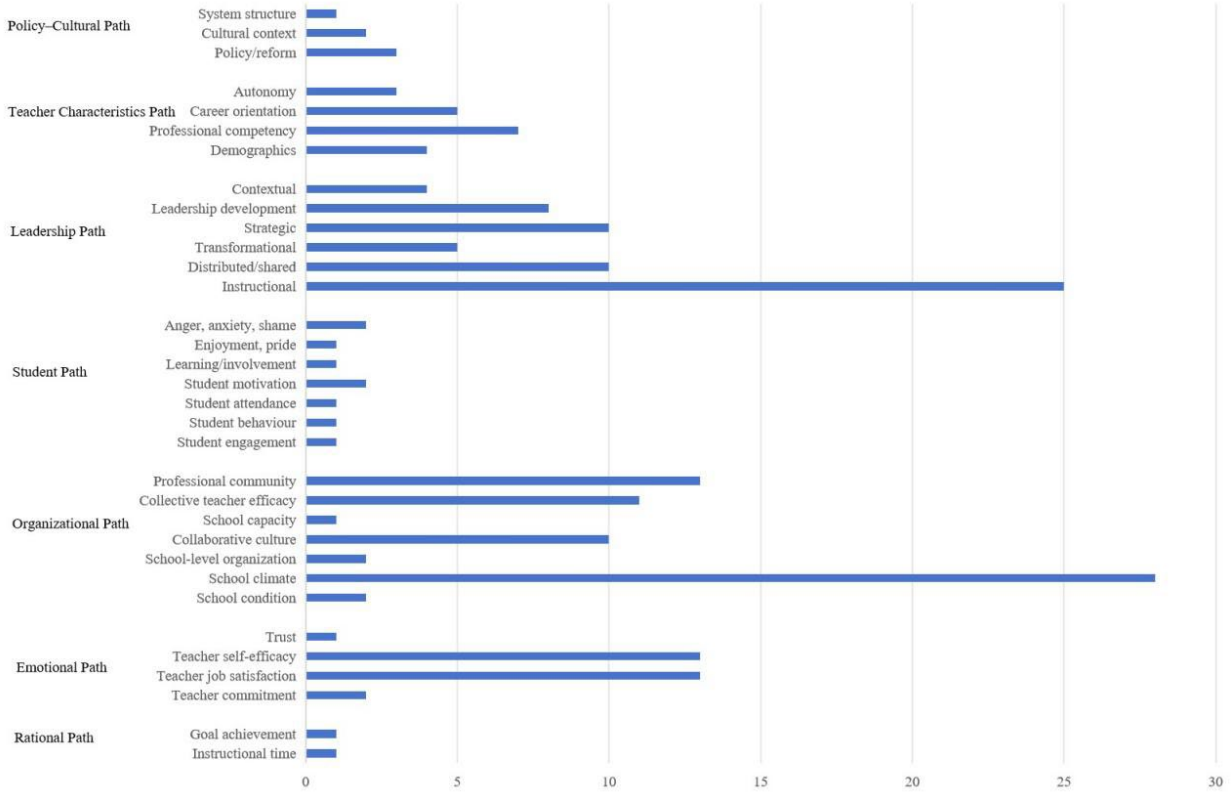

Figure 5. Mediating variables in each path.

Via a number of interrelated paths, teacher self-efficacy is crucial in determining educational results. According to the rational approach, it directly improves the quality of instruction since more self-assured teachers use more successful teaching techniques, which raises student involvement and academic accomplishment[62]. According to Yang et al. (2024), the emotional path emphasises how teacher self-efficacy supports teachers' emotional health by reducing stress and burnout and promoting a stronger dedication to the profession and increased job satisfaction[63].

The organisational path emphasises how teacher self-efficacy affects both collective teacher efficacy and the school climate. Strong self-efficacy beliefs among teachers foster a more favourable work atmosphere and create a sense of collective efficacy among coworkers[63].

By fostering supportive learning environments and practicing effective classroom management, instructors with high self-efficacy have a good impact on students' motivation, behaviour, and mental health[64]. According to the leadership route, teachers' self-efficacy significantly predicts their participation in leadership behaviours, especially when it comes to taking the initiative to promote instructional improvement and support school development[62]. The teacher characteristics path focusses on how elements including professional learning, teaching experience, and instructional confidence both influence and contribute to teacher self-efficacy. According to Aboagye et al. (2020), educators who engage in significant professional development tend to exhibit higher levels of self-efficacy, which enhances their instructional strategies[65]. Finally, the policy–cultural path demonstrates how teacher self-efficacy is shaped by and influenced by larger policy and cultural contexts. Cultural norms and institutional support are important moderators of teachers' efficacy beliefs, which influence how they perceive, react to, and carry out educational innovations[66].

The empirical foundation is still uneven, despite the fact that these mediating routes offer insightful conceptual information. The policy-cultural road, for instance, is primarily obtained from qualitative or small-scale case studies, which limits the scope of generalisation, whereas the emotional and organisational routes are well supported by studies using validated multi-scale instruments. Furthermore, a lot of studies relied on bivariate correlations to infer mediating effects rather than using rigorous mediation analysis approaches (such structural equation modelling). The strength of the evidence supporting the suggested pathways is limited by this methodological flaw.

Together, these paths highlight the significance of teacher self-efficacy not only in the classroom but also in the larger educational environment, illuminating its intricate and multifaceted influence on educational quality.

5. Discussion

5.1. Summary of findings

This analysis examined how classroom leadership influences teacher self-efficacy (TSE) in a variety of educational environments by synthesising empirical data from 34 studies published between 2015 and 2025. Leadership strategies can greatly boost instructors' confidence in classroom management, instructional delivery, and student engagement, according to a consistent positive connection found throughout the included studies. The analysis identified a number of important mediating mechanisms via which leadership affects TSE, such as professional development opportunities, teacher collaboration, and the climate of trust. Furthermore, it has been demonstrated that the intensity and direction of these connections are conditioned by contextual factors, including school size, cultural environment, and resource availability. Significantly, higher TSE was linked to more comprehensive results, such as better student learning and competences, increased instructional quality, and improved teacher well-being. This review contributes to a more comprehensive knowledge of how leadership practices transfer into teacher and school improvement results by charting these mediating and moderating routes.

5.2. Implications

The study's conclusions have practical ramifications for educational leaders who want to raise teacher self-efficacy and, consequently, raise student achievement. In the areas of classroom management, student engagement, and instructional delivery, in particular, instructional leadership is essential to fostering the environment that fosters instructors' confidence growth.

School administrators should take a strategic strategy that involves communicating school goals clearly in order to connect instructional practices and create a sense of purpose in order to boost teacher self-efficacy. Reflective practice and effective teaching can be strengthened by routine classroom observations combined with helpful criticism. Teachers' unique requirements and career stages should be addressed by customised professional development opportunities, and real-time support and encouragement can be obtained through a visible leadership presence. Recognising teachers' accomplishments also raises spirits and promotes a culture of excellence, which creates a positive atmosphere that supports teachers' confidence and improves the quality of their education.

School administrators should foster an organisational culture that encourages cooperation, peer learning, and pedagogical risk-taking in addition to these direct tactics. Mentorship programs can improve engagement and instructional confidence while reinforcing classroom management skills, especially when they connect new teachers with seasoned mentors. Teachers' confidence in their own and their group's effectiveness is further increased by providing forums for professional discussion and practice sharing.

Leadership practices that promote a positive school climate, psychological safety, and opportunities for teacher agency can be effective indirect levers for increasing teacher effectiveness and satisfaction, even though the direct impact of leadership on teacher self-efficacy may vary (Hallinger et al., 2018)[33].

More importantly, our synthesis goes beyond descriptive cataloguing to promote an integrative conceptual framework. This paradigm shows how educational leadership influences teacher self-efficacy, which in turn supports school improvement results, via a range of mediating and moderating mechanisms (including cooperation, trust climate, professional development, and contextual moderators). The review highlights the intricate connections and gives scholars and practitioners a more comprehensive understanding by mapping these interrelationships rather of taking variables into account separately.

It is also important to recognise that the current body of data lacks methodological balance, with 28 studies relying on quantitative designs and just a tiny proportion of the 34 studies using qualitative or mixed-methods techniques. While quantitative research yields findings that are generally relevant, it provides little understanding of the dynamics of teacher experiences and leadership styles that are distinctive to a given environment. To better comprehend these complex, context-dependent mechanisms, look at organisational and cultural variances, and document educators' lived realities, future research should use mixed-methods and qualitative methodologies.

6. Limitations and future research

There are various limitations on this review. The geographical imbalance caused by the majority of studies coming from Asian contexts restricts the findings' applicability in a variety of cultural and policy contexts. Language bias might have been created by limiting the search to English-language publications, and the synthesis might not have been as thorough if grey literature and subscription-based sources had been excluded. A certain amount of subjectivity in interpretation is inevitable even with the application of methodical screening and coding techniques. Lastly, the scope of findings is constrained by the limited incorporation of transdisciplinary views, highlighting the necessity for future research to engage with broader disciplinary frameworks.

The methodological mismatch mentioned above further limits contextual awareness. Future research should integrate mixed-methods and qualitative methodologies to better understand how teacher self-efficacy, instructional leadership, and school results interact. When it comes to recording how leadership effectiveness evolves over time, longitudinal research is especially useful. It is also important to look into moderating factors including the size of the school, the organisational culture, the availability of resources, and the socioeconomic backgrounds of the pupils.

Understanding how leadership practices transfer into student accomplishment can be improved by more research into mediating elements, such as teacher collaboration, emotional health, and work happiness. Increasing the geographic area of research will enhance cross-cultural understanding and promote the findings' generalisability. Building on the integrative approach presented in this review, future studies can evaluate and improve the pathways linking teacher self-efficacy, instructional leadership, and school development through empirical research.

In order to balance geographical representation and enhance comparative insights across educational systems, future evaluations should also incorporate a larger range of international studies. It is crucial to conduct longitudinal studies similar to Karakose et al.'s resarch (2023)[67]. Importantly, testing and expanding the conceptual model presented here will require a more methodologically varied body of evidence, which

will enhance the theoretical contributions and real-world applications of research on teacher self-efficacy and instructional leadership.

7. Conclusion

Our knowledge of how instructional leadership affects student learning outcomes through the mediating function of teacher self-efficacy is improved by this systematic literature review. The evidence compiled from 34 empirical studies between 2015 and 2025 shows that teachers' confidence in their professional abilities can be greatly increased by instructional leaders who successfully manage instructional programs, establish clear school missions, and create positive learning environments. These increased teacher self-efficacy beliefs are crucial psychological processes that convert leadership behaviours into better teaching methods and, eventually, higher student accomplishment, especially when it comes to classroom management, student engagement, and instructional quality.

There are still some significant gaps in the growing body of knowledge. Generalisability is limited since few research use cross-cultural comparisons or longitudinal designs. Furthermore, the creation of a comprehensive theoretical framework is impeded by discrepancies in the operationalisation and assessment of teacher self-efficacy and instructional leadership. Future study will need to address these constraints using a variety of more rigorous methodological approaches.

Practically speaking, this research emphasises the value of leadership development initiatives that specifically focus on boosting teachers' self-efficacy as a means of achieving better educational outcomes. School administrators may cultivate resilient, driven teachers who are prepared to address the varied demands of their students by giving priority to tactics that increase teachers' self-assurance and instructional competency. Researchers and practitioners can use this integrative perspective's rich conceptual model as a guide for creating interventions that maximise student learning outcomes by utilising instructional leadership.

Author contributions

Conceptualization, Shihui Hua, Azlin Norhaini Mansor, and Khairul Azhar Bin Jamaludin; Methodology, Shihui Hua; Software, Shihui Hua; Validation, Shihui Hua, Azlin Norhaini Mansor, and Khairul Azhar Bin Jamaludin; Formal Analysis, Shihui Hua; Investigation, Shihui Hua; Resources, Shihui Hua; Data Curation, Shihui Hua; Writing—Original Draft Preparation, Shihui Hua; Writing—Review & Editing, Shihui Hua; Visualization, Shihui Hua; Supervision, Azlin Norhaini Mansor and Khairul Azhar Bin Jamaludin; Project Administration, Azlin Norhaini Mansor and Khairul Azhar Bin Jamaludin.

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Conflict of interest

The authors declare no conflicts of interest.

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Appendix A

Table A1. The dimensions instructional leadership affecting teacher self-efficacy.

(From Hallinger & Murphy, 1986).

Dimension	#	Focus	Description	Count
Defining the School's Mission	1	Set and communicate clear school goals	Articulating and communicating clear, measurable learning goals	14
	2	Support teacher effectiveness	Ensuring staff understand and commit to the goals	22
	3	Support continuous improvement	Supporting shared norms, expectations, communication, and collaboration	13
Managing the Instructional Program	4	Supervise instruction	Observing classrooms, giving feedback, and improving instruction	14
	5	Aligning the curriculum	Ensuring vertical and horizontal alignment of the curriculum	5
	6	Track student progress	Using data to improve teaching and learning	12
Promoting a Positive School Learning Climate	7	Protect instructional time	Minimizing disruptions to classroom learning	3
	8	Encourage professional development	Supporting teacher learning and growth	18
	9	Maintain visibility	Being actively present in school/classrooms	8
	10	Offer incentives to teachers and students	Recognizing achievement, offering rewards	6

Note: *Count=Number of documents mentioned.*

Table A2. Distribution of dimensions in the studies.

#	Authors	Dimension 1	2	3	4	5	6	7	8	9	10
1	Akman (2021)	1			1		1	1			
2	Anselmus Dami et al. (2022)		1	1		1		1			1
3	Bada et al. (2024)	1			1				1	1	
4	Bellibas and Liu (2017)	1	1		1		1			1	
5	Bozkurt et al. (2021)		1	1		1			1		
6	Brandmo et al. (2021)	1			1		1				1
7	Cansoy and Parlar (2018)	1	1	1				1		1	
8	Chen and Rong (2023)			1		1			1		1
9	Çoban et al. (2023)	1	1		1	1	1				
10	Daing and Mustapha (2023)		1						1	1	
11	Elfira et al. (2024)	1	1	1					1		
12	Goddard et al. (2021)		1				1				
13	Hallinger and Hosseingholizadeh (2020)			1	1		1				
14	Hallinger et al. (2018)		1	1					1		
15	Hompashe (2024)		1			1	1				
16	Ismail et al. (2018)		1		1				1		
17	Jalapang and Raman (2020)	1	1				1				
18	Johnson and Williams (2023)		1		1				1		
19	Kılınç et al. (2021)		1	1					1	1	
20	Kılınç et al. (2023)		1							1	

#	Authors	Dimension 1	2	3	4	5	6	7	8	9	10
21	Liu et al. (2022)	1			1		1				
22	Ma and Marion (2021)	1			1					1	
23	McBrayer et al. (2019)	1	1		1		1		1		
24	Mokhtar and Razak (2024)			1					1		
25	Nguyen et al. (2025)[41]			1					1		
26	SumiAti and NiEmted (2020)	1			1						
27	Özdemir et al. (2020)		1	1			1		1		
28	Qadach et al. (2020)	1	1						1		
29	Ridwan et al. (2024)		1	1					1		
30	Sindhvad et al. (2022)				1				1		1
31	Siriparp et al. (2022)		1	1					1		
32	Skaalvik (2020a)		1							1	1
33	Skaalvik (2020b)		1				1				1
34	Thien and Liu (2024)	1			1				1		

Table A2. (*Continued*)

Table A3. The dimensions teacher self-efficacy affecting educational outcomes.

Dimension	#	Focus	Precious studies
Instructional efficacy	1	Belief in ability to deliver effective instruction	1-34
Classroom management efficacy	2	Confidence in managing student behavior	5,11,26
	3	Confidence in maintaining a productive classroom environment	4, 6, 14, 15, 16, 18, 23, 26, 29, 30, 32, 33
Student engagement efficacy	4	Belief in ability to motivate	2, 7, 8, 9, 11, 12, 13, 14, 15, 18, 19, 20, 23,24, 25, 27, 28, 31, 32, 33
	5	Belief in ability to actively engage students in learning	2, 5, 8, 9, 10, 12, 13, 15, 20, 21, 22, 24, 25, 28, 29, 31, 34

Note: *The serial number of the fourth column is the same as the serial number of the references in Appendix Table A2.*