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# TEACHER LEADERSHIP FOR SUSTAINABLE SCHOOL IMPROVEMENT: A REVIEW OF OUTCOMES AND MEDIATING PATHWAYS

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## ABSTRACT

*Teacher leadership has emerged as a pivotal construct for advancing instructional quality and sustainable school improvement, yet the cumulative evidence on its outcomes remains fragmented across varied methodologies and theoretical anchorings. This study maps and synthesizes the outcomes of teacher leadership by combining a systematic literature review (SLR) with bibliometric analysis. Following the PRISMA protocol, 78 peer-reviewed articles published between 2013 and 2023 were retrieved from ScienceDirect, Springer, Emerald, ERIC, and ProQuest, and analyzed using Publish or Perish, Mendeley, VOSviewer, and Microsoft Excel. Five interrelated outcome domains emerged: professional learning communities (PLCs), student learning, effective instructional practice, organizational learning, and teacher self-efficacy and job satisfaction. Teacher leadership exerts its most consistent effects on student learning, realized through effective instructional practice and mediated by PLCs and organizational learning, with principal leadership functioning as a structural enabling condition. The study contributes an integrated conceptual model linking teacher leadership to sustainable school improvement via two mediating pathways, including PLCs and organizational learning, and identifies the absence of structured, principal-led teacher leadership development programs as a critical research gap warranting urgent empirical attention.*

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**KEYWORDS:** Systematic Literature Review; Teacher Leadership; Teacher Leadership Outcomes; Professional Learning Community; Organizational Learning; Sustainable School Improvement.

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## 1. INTRODUCTION

Teacher leadership has received sustained scholarly attention as an analytical lens for understanding how instructional quality, school effectiveness, and sustainable improvement are cultivated within schools (Curtis, 2013; Harris & Muijs, 2002; York-Barr & Duke, 2004). School systems increasingly recognize the strategic value of cultivating leadership capacity among teachers, such that the influence teachers exert on students and colleagues is regarded as integral to organizational improvement (Curtis, 2013). Beyond the formal authority of the principal, leadership practice is understood to be distributed across the teaching workforce, with teachers playing substantive roles in instructional decision-making, mentoring novice colleagues, leading school-wide initiatives, and engaging with the broader community (Harris & Jones, 2019; Sharar & Nawab, 2020).

Conceptually, teacher leadership is grounded in the theoretical tradition of distributed leadership, which conceptualizes leadership not as the property of a single individual but as a relational practice enacted across multiple actors within an organization (Harris, 2005; Spillane, 2006). Empirical evidence consistently indicates that when teachers participate in leadership activities, their perspectives on school decision-making are reshaped, and their investment in collective goals deepens (Elfers & Plecki, 2016). Teacher leadership is further characterized by a distinctive profile of attributes, including work ethic, teamwork, openness, positive influence, willingness to take risks, and teaching-related expertise, that together enable teachers to act as agents of change (Jackson, Burrus, Bassett, & Roberts, 2010; Lowery-Moore, Latimer, & Villate, 2016).

A substantial strand of research has demonstrated the consequential outcomes of teacher leadership, particularly for student learning (Fairman & Mackenzie, 2015; Nguyen, Harris, & Ng, 2020; Ningsih & Wijayanti, 2019; Valdez, Broin, & Carroll, 2015; Wilson, 2016) and effective classroom instruction (Coggins & McGovern, 2014; Lai & Cheung, 2015; Xie & Shen, 2013). These effects, however, are rarely direct; rather, they are mediated by organizational conditions, a supportive school environment (Lowery-Moore *et al.*, 2016; Pang & Miao, 2017; Schott, van Roekel, & Tummers, 2020), a functioning professional learning community (Curtis, 2013; Ding & Thien, 2025; Sales, Moliner, & Francisco Amat, 2017; Sebastian, Allensworth, &

Huang, 2016), and an embedded culture of organizational learning (Cherkowski, 2018; Printy & Liu, 2021; Wieczorek & Lear, 2018). Teacher leadership has also been associated with higher job satisfaction and professional self-confidence (Meredith *et al.*, 2023; Sun & Xia, 2018). Nevertheless, effective implementation remains challenging, as entrenched norms and a persistent status quo within the teaching profession constrain change (Curtis, 2013).

Recent scholarship continues to deepen this picture. Polatcan, Özkan, and Bellibaş (2024) demonstrated that transformational leadership indirectly cultivates teacher innovativeness through the fully mediating role of teacher agency, with teacher trust strengthening this relationship, a finding that underscores the relational and agentic conditions under which leadership influences teacher practice. Ghamrawi, Shal, and Ghamrawi (2024) further showed, through a three-year grounded-theory study of a transformative professional development model in Lebanese schools, that structured opportunities for teachers to lead professional learning directly cultivate teacher leadership capacity among their colleagues. Dasci Sonmez, Cemaloglu, and Kahraman (2025) similarly demonstrated in a Turkish sample that both instructional and teacher leadership significantly contribute to teachers' professional learning. These contributions highlight that the linkage between teacher leadership and sustainable school improvement is not automatic but is contingent upon specific organizational, relational, and developmental conditions, precisely the mediating architecture that the present study is designed to map.

Given the breadth and heterogeneity of this evidence base, a systematic appraisal is needed to consolidate findings, map intellectual structures, and identify research gaps concerning the outcomes of teacher leadership for sustainable school improvement. Prior reviews have relied predominantly on narrative or empirical synthesis (Nguyen *et al.*, 2020; Schott *et al.*, 2020); what remains underdeveloped is a bibliometric mapping that triangulates publication trajectories, citation influence, geographic distribution, and thematic clusters. Figure 1 illustrates the growth trajectory of publications on the outcomes of teacher leadership over the past decade, including a pronounced rise in 2022.

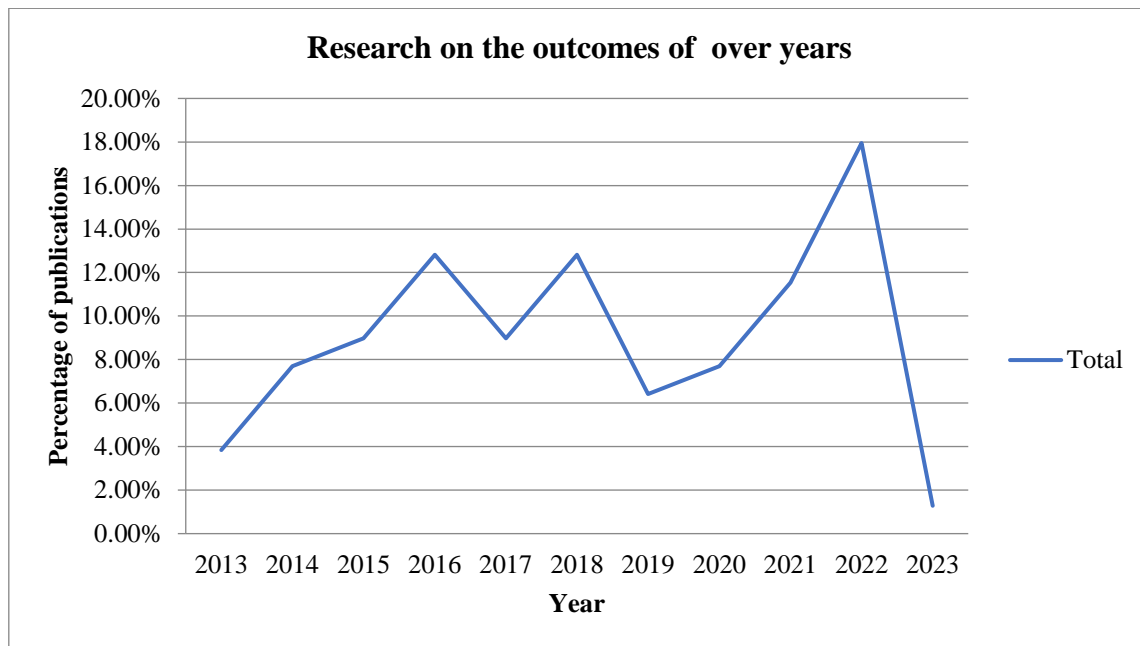


Figure 1: Publications On the Outcomes of Teacher Leadership (2013–2023).

A systematic literature review, supplemented by bibliometric analysis, constitutes an effective and reliable approach for consolidating prior research and identifying research gaps within a defined field (Linde & Willich, 2003; Torres-Carrion, Gonzalez-Gonzalez, Aciar, & Rodriguez-Morales, 2018). Accordingly, the present study examines the methodological patterns, disciplinary orientations, keyword configurations, and thematic findings in the prior literature concerning the outcomes of teacher leadership for schools' sustainable improvement. Through this procedure, dominant approaches, persistent gaps, and directions for future inquiry are identified.

The remainder of this paper is organized as follows. Section 2 presents the theoretical framework grounding the study. Section 3 articulates the research questions. Section 4 details the methodology, including the search strategy and inclusion and exclusion criteria. Section 5 presents and interprets the bibliometric results. Section 6 discusses the thematic findings in relation to the theoretical framework, and Section 7 concludes with contributions, limitations, and directions for future research.

## 2. THEORETICAL FRAMEWORK

This section establishes the theoretical foundations for the present bibliometric analysis. Four interrelated theoretical strands inform the study: (i) distributed leadership as the macro-theoretical lens for understanding teacher leadership; (ii) conceptualizations of teacher

leadership as a bounded construct; (iii) professional learning community (PLC) theory as a mediating mechanism; and (iv) organizational learning theory as an enabling condition for sustainable school improvement. Together, these strands provide the analytical framework for interpreting the bibliometric findings.

### 2.1. Distributed Leadership as the Macro-Theoretical Lens

Distributed leadership theory provides the overarching lens for understanding teacher leadership as a practice enacted across multiple actors rather than confined to formal roles (Gronn, 2002; Harris, 2005; Spillane, 2006). Within this perspective, leadership is understood as a relational and situated activity that emerges from interactions among leaders, followers, and organizational contexts, rather than as a set of individual traits or positional authority. This view emphasizes the importance of shared responsibility, collective expertise, and the dynamic distribution of leadership tasks across members of the organization. In educational settings, this positions teacher leadership as an integral component of distributed leadership practice, in which teachers contribute to instructional improvement through collaborative, contextually embedded actions (Harris, 2005; Harris & Jones, 2019). Teacher leadership, therefore, extends beyond classroom instruction to include roles in curriculum development, peer mentoring, and participation in school-wide decision-making processes. Such contributions highlight how teachers act as key

agents in fostering professional learning and sustaining school improvement efforts within a distributed leadership environment.

## 2.2. Conceptualizations Of Teacher Leadership

Within the distributed leadership tradition, teacher leadership has been conceptualized in various ways but converges on several common features. In their seminal synthesis, York-Barr and Duke (2004) defined teacher leadership as “the process by which teachers, individually or collectively, influence their colleagues, principals, and other members of school communities to improve teaching and learning practices with the aim of increased student learning and achievement.” This definition foregrounds three theoretical commitments: (a) influence as the central mechanism of leadership; (b) teaching and learning as the substantive target of leadership action; and (c) student learning as the ultimate criterion of leadership effectiveness.

Building on this foundation, Harris (2002, 2005) conceptualized teacher leadership as a form of leadership practice grounded in expertise rather than positional authority, emphasizing that leadership is earned through professional credibility and peer recognition. Curtis (2013) further operationalized the construct by delineating the specific roles and responsibilities through which teachers enact leadership, including instructional leadership, collaborative planning, mentoring, and systemic advocacy. More recent scholarship (Nguyen *et al.*, 2020; Schott *et al.*, 2020) has refined the construct by distinguishing between formal teacher leadership (e.g., department heads, instructional coaches) and informal teacher leadership (e.g., collegial influence exerted through everyday practice). This distinction is theoretically significant because it implies different pathways through which leadership outcomes are produced – the former through delegated authority and the latter through relational legitimacy.

Taken together, these conceptualizations frame teacher leadership in this study as a multidimensional construct comprising instructional, collaborative, developmental, and change-oriented dimensions. This multidimensionality is consequential for bibliometric analysis, as it implies that the outcomes of teacher leadership are likely to appear not as a single effect but as a constellation of effects operating across multiple organizational levels.

## 2.3. Professional Learning Community

The theoretical linkage between teacher leadership and student outcomes is, in many empirical accounts, mediated by the professional learning community (PLC) construct. Stoll and Louis

(2008) defined a PLC as a group of practitioners who share and critically interrogate their practice in an ongoing, reflective, collaborative, inclusive, and learning-oriented manner, with a focus on mutual growth. DuFour (2006) articulated three foundational commitments that characterize PLCs: a focus on learning rather than teaching, collaborative work, and a results-oriented approach. These commitments theorize PLCs as structured spaces in which teacher leadership can be cultivated and channeled into instructional improvement.

Katz, Earl, and Ben Jaafar (2009) further specified the conditions under which PLCs generate their intended effects: a challenging focus, productive relationships grounded in collegial trust, collaboration for mutual benefit, and rigorous inquiry. These theoretical conditions align closely with the attributes of teacher leadership identified by Jackson *et al.* (2010), like teamwork, openness, and teaching-related skill, suggesting a theoretical convergence: teacher leadership supplies the agentic capacity that PLCs require to function effectively, while PLCs supply the organizational structure through which teacher leadership is exercised collectively. This mutual constitution positions the PLC as a theoretically central mediating mechanism in the pathway from teacher leadership to student outcomes. Empirical scholarship reinforces this theoretical architecture. Hairon, Goh, and Chua (2015) conducted an ethnographic case study of three PLCs in Singapore and showed that teacher leadership supports PLC conversations across multiple dimensions of the construct. Dorukbaşı and Cansoy (2024) further demonstrated, in a Turkish sample, that teacher professional learning mediates the relationship between perceived instructional leadership and teachers’ instructional practices, corroborating the mutual reinforcement theorized here between teacher-led professional learning structures and instructional improvement.

## 2.4. Organizational Learning Theory

Organizational learning theory (Argyris & Schön, 1978; Senge, 1990) provides a complementary theoretical lens for understanding how teacher leadership produces sustained effects at the school level. Argyris and Schön (1978) distinguished between single-loop learning (incremental adjustment within existing norms) and double-loop learning (revision of the governing norms themselves). Senge (1990) extended this framework by identifying five disciplines, such as systems thinking, personal mastery, mental models, shared vision, and team learning, through which organizations develop the capacity to learn continuously. Applied to schools, organizational learning theory theorizes that sustainable

improvement depends not on discrete initiatives but on the school's collective capacity to question, revise, and institutionalize its practices.

Within this framing, teacher leadership serves as a primary generative mechanism for organizational learning (Wieczorek & Lear, 2018). Kilinç (2014) demonstrated that teacher self-efficacy mediates the relationship between teacher leadership and instructional practice, suggesting that organizational learning is not a disembodied property of the school but is enacted through teachers' professional development. Kurt (2016) further showed that principals' distributed leadership indirectly influences the organizational learning environment, with teacher leadership serving as the mediating mechanism. These findings position organizational learning as the theoretical construct through which teacher leadership's effects are sustained and institutionalized over time. More recent evidence reinforces these theoretical claims. Polatcan, Özkan, and Bellibaş (2024) showed that transformational principal leadership cultivates teacher innovativeness through teacher agency – a relational mechanism that exemplifies how organizational learning is enacted through teachers' capacity to generate, adapt, and enact new practice. Shal, Ghamrawi, Abu-Tineh, Al-Shaboul, and Sellami (2024) further demonstrated that virtual communities of practice foster distributed leadership and teacher agency, extending organizational learning beyond the physical school. Collectively, these findings confirm that organizational learning is not a passive backdrop but an active enabling condition that both requires and reproduces teacher leadership.

### 2.5. An Integrated Theoretical Model

Synthesizing the four strands above, the present study adopts an integrated theoretical model in which teacher leadership is conceptualized as a distributed leadership practice that generates outcomes for schools' sustainable improvement through two mediating mechanisms, the professional learning community and organizational learning, with principal leadership functioning as a structural enabling condition and effective instructional practice functioning as the proximal pathway to student learning. This model guides the interpretation of the bibliometric findings in Section 5 and the discussion in Section 6.

## 3. RESEARCH QUESTIONS

Guided by the theoretical framework articulated in Section 2, the present study formulates one overarching research question and four subsidiary questions. The overarching question is: How do the outcomes of teacher leadership contribute to schools' sustainable improvement?

**To operationalize this overarching question within a bibliometric design, four subsidiary research questions are posed:**

- RQ1. What are the descriptive bibliometric characteristics: publication trajectory, source distribution, geographic concentration, and leading outlets, of research on the outcomes of teacher leadership between 2013 and 2023?
- RQ2. Which publications constitute the intellectual core of the field, as indicated by citation influence, and what substantive themes do they address?
- RQ3. What thematic clusters emerge from the titles and abstracts of the selected corpus, and how do they map onto the theoretical mechanisms of the professional learning community and organizational learning?
- RQ4. What research gaps and future research directions are identifiable from the bibliometric and thematic synthesis, particularly regarding the conditions under which teacher leadership contributes to sustainable school improvement?

These research questions inform the selection of keywords, the inclusion and exclusion criteria, and the analytical procedures applied in the SLR. Together, they constitute the study's empirical agenda and provide the analytical structure for the subsequent sections.

## 4. METHODOLOGY

### 4.1. Research Design

The study adopts a systematic literature review (SLR) design combined with bibliometric analysis. The SLR is directed at consolidating prior research on the outcomes of teacher leadership, while the bibliometric component examines the structural properties of the literature, including publication trajectory, source distribution, citation patterns, and thematic clustering. The combination is theoretically warranted because thematic synthesis alone cannot reveal the structural dynamics of a research field, whereas bibliometric analysis alone cannot illuminate the substantive meaning of the identified patterns (Donthu et al., 2021).

### 4.2. Research Objectives

The study pursues four methodological objectives aligned with the research questions: (1) to streamline the search process and select studies on teacher leadership from multiple databases; (2) to identify the publication year, publisher, country, most-cited works, and substantive topics addressing the outcomes of teacher leadership implementation; (3) to identify the methods employed in the prior literature and the rationale for

their use; and (4) to identify research gaps and directions for future inquiry.

#### 4.3. Protocol And Reporting Standards

The review was conducted in accordance with the procedures, principles, and evaluative criteria of the SLR method, following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) protocol. The procedure comprised six sequential steps: (i) establishing the study background, (ii) formulating the search strategy, (iii) collecting the data, (iv) identifying the research questions, (v) applying assessment criteria to select relevant studies, and (vi) conducting the data analysis. Each step was designed to exclude irrelevant papers and retain only publications aligned with the research questions.

#### 4.4. Data Sources and Search Strategy

Articles were retrieved from five reputable bibliographic databases: Science Direct, Springer, Emerald, ERIC, and ProQuest. The search was restricted to the ten-year window from 2013 to 2023, a period during which publications on teacher leadership outcomes grew substantially. Search queries combined keywords derived from the research questions, including "teacher leadership," "outcomes of teacher leadership," "professional learning community," "organizational learning," and "sustainable school improvement." Retrieval and management of records were supported by Publish or Perish and Mendeley; bibliometric visualization was performed in VOSviewer; and Microsoft Excel was used for data processing and charting.

#### 4.5. Inclusion And Exclusion Criteria

Studies were included if they (a) were published between 2013 and 2023, (b) appeared in peer-reviewed journals or indexed conference proceedings, (c) addressed the outcomes, implications, or effects of teacher leadership, and (d) were written in English. Studies were excluded if they (a) fell outside the publication window, (b) were purely theoretical or editorial commentaries with no substantive engagement with outcomes, (c) were not accessible in full text, or (d) addressed teacher leadership only tangentially. Citation score and benchmarking were used as additional criteria during the screening phase to prioritize publications of substantive scholarly influence.

#### 4.6. Selection Process

The initial search yielded 975 records across the five databases. In the first exclusion stage, records were screened against the inclusion criteria based on citation score, publication type, and topical relevance to the research questions, with benchmarking used to prioritize substantive contributions. In the second stage, titles and abstracts were screened; titles were examined first, and abstracts were consulted when the titles provided insufficient information. This stage excluded 590 records. In the third stage, a manual full-text retrieval was conducted via Google Scholar, resulting in the exclusion of 307 records that could not be retrieved in full. The final corpus comprised 78 studies, which were subjected to bibliometric and thematic analysis.

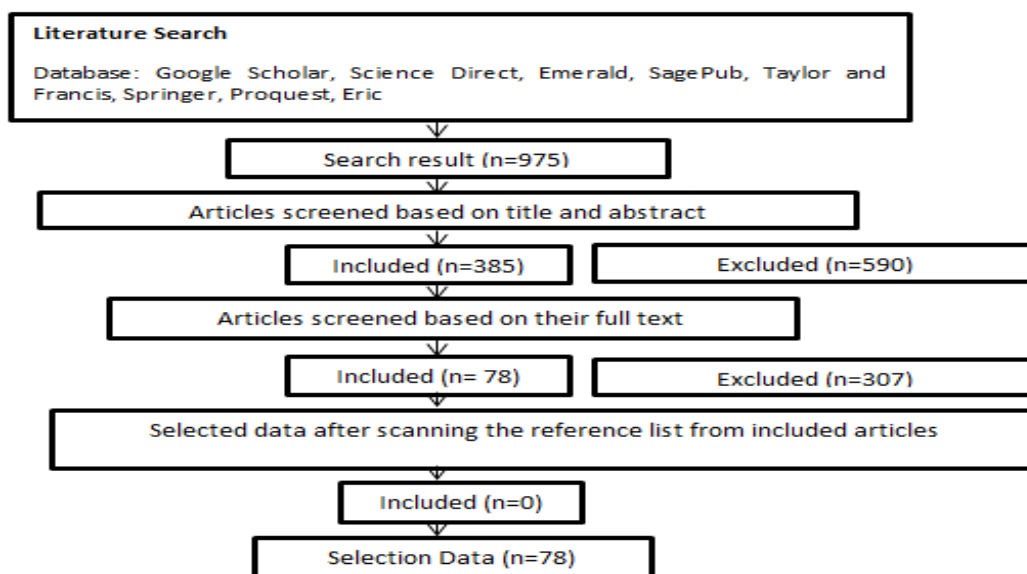


Figure 2: PRISMA-Based on the Paper Selection Procedure.

#### 4.7. Analytical Procedures

The analysis proceeded along two

complementary axes. The bibliometric axis examined descriptive indicators (publication type, database distribution, citation trajectory, country distribution, and leading outlets) and network indicators (keyword co-occurrence clusters and thematic maps) generated in VOSviewer. The thematic axis involved close reading of abstracts and, where warranted, full texts, to map the identified studies onto the mediating mechanisms articulated in the theoretical framework. The two axes were triangulated in Section 6 to address the overarching research question.

To enhance analytical rigor, the thematic coding process followed a structured, iterative procedure in which titles and abstracts were first subjected to open coding to identify recurrent concepts related to teacher leadership outcomes, after which these codes were grouped into higher-order categories through axial coding guided by the theoretical framework of professional learning communities and

organizational learning; to ensure consistency, the coding scheme was continuously refined through comparison across studies, and representative articles were re-examined to validate thematic alignment, enabling the identification of stable thematic clusters that informed the outcome categories presented in the findings.

## 5. RESULTS AND INTERPRETATION

This section presents the findings of the bibliometric analysis of the 78 studies in the final corpus. Results are reported along the dimensions specified in the research questions: publication type (5.1), database distribution (5.2), leading journals (5.3), benchmark publications (5.4), citation trajectory (5.5), geographic distribution (5.6), and thematic clusters (5.7).

### 5.1. Publication Type

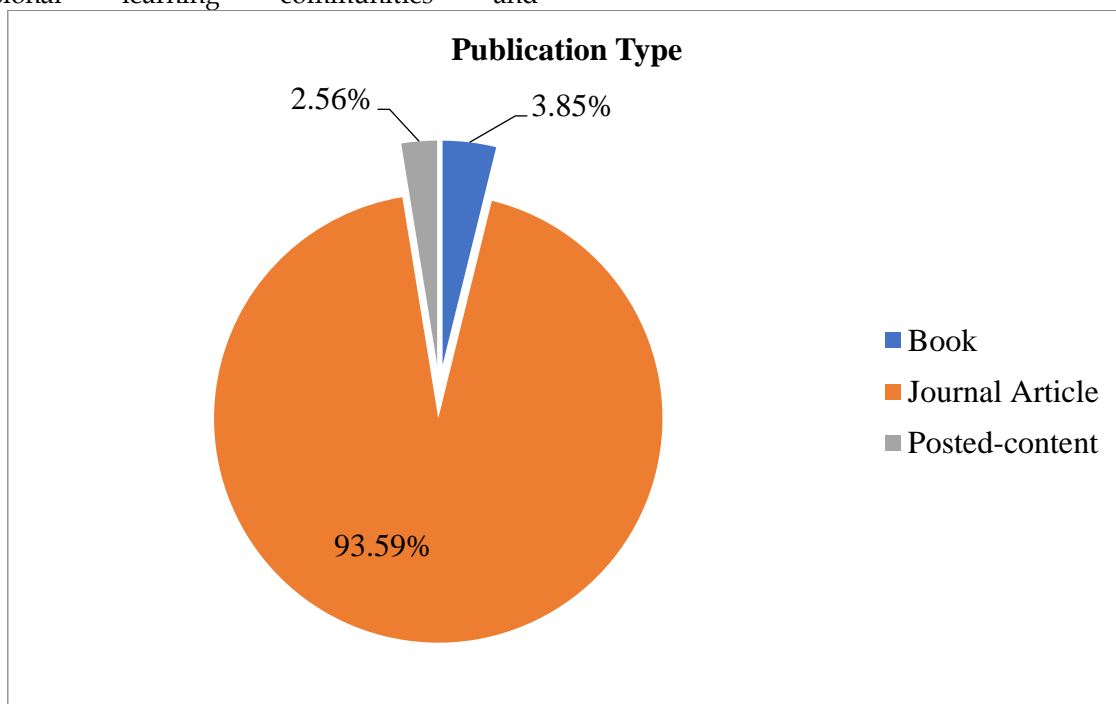


Figure 3: Distribution Of Publication Types in the Corpus.

Figure 3 indicates that the overwhelming majority of publications in the corpus are peer-reviewed journal articles. This distribution is consistent with the field's maturation, as scholarship on teacher leadership has increasingly consolidated in indexed journals rather than conference proceedings or grey literature. The pattern also suggests that the outcomes of teacher leadership are being examined against the methodological and theoretical standards of peer review, which strengthens the warrant for bibliometric synthesis.

### 5.2. Database Distribution

Figure 4 displays the distribution of publications across the source databases. Science Direct accounts for the largest share, followed by Springer and Google Scholar, each of which exhibits substantial growth across the review window. This pattern mirrors broader trends in educational leadership scholarship, in which flagship international journals indexed in these databases serve as the primary venues for theoretically informed empirical work.

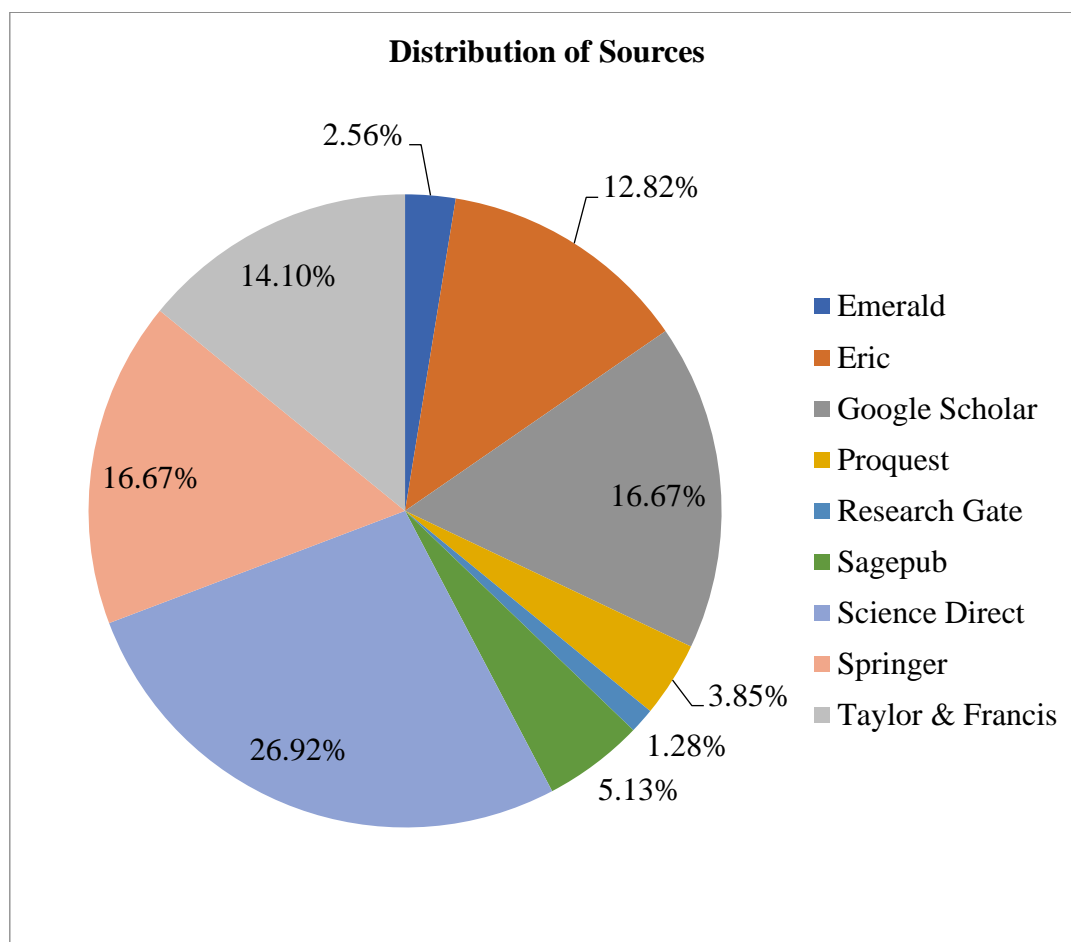


Figure 4: Distribution Of Publications Across Databases.

### 5.3. Leading Journals

Table 1: Top 10 Journals Publishing on the Outcomes of Teacher Leadership (By Citation Count).

No.	Source	Citations
1	International Journal of Leadership in Education	454
2	Teaching and Teacher Education	406
3	Journal of Educational Change	347
4	International Journal of Teacher Leadership	229
5	American Journal of Education	228
6	Educational Management Administration & Leadership	211
7	School Effectiveness and School Improvement	179
8	Educational Research Review	155
9	Aspen Institute (Research Report)	138
10	International Journal of Educational Research	110

Table 1 identifies the ten journals that have most shaped the field's intellectual trajectory, ranked by aggregate citation count within the corpus. The top three, including International Journal of Leadership in Education, Teaching and Teacher Education, and Journal of Educational Change, are established outlets in educational leadership and teacher professional learning, reinforcing the theoretical embeddedness of teacher leadership research within

these intersecting fields. The presence of Educational Management Administration & Leadership and School Effectiveness and School Improvement within the top ten further indicates that the field's intellectual core sits at the confluence of leadership studies and school improvement research.

### 5.4. Benchmark Publications

Table 2: Publications With More Than 100 Citations in the Corpus.

No.	Title	Citations
1	How teacher leaders influence others and understand their leadership (Fairman & Mackenzie, 2015)	332
2	The role of teacher leadership in how principals influence classroom instruction and student learning (Sebastian et al., 2016)	228
3	Enacting teacher leadership: The role of teachers in bringing about change (Lai & Cheung, 2015)	211
4	Examining integrated leadership systems in high schools: Connecting principal and teacher leadership to organizational processes and student outcomes	179
5	The teacher leadership process: Attempting change within embedded systems	173
6	Finding a new way: Leveraging teacher leadership to meet unprecedented demands (Curtis, 2013)	138
7	Teachers' perceived professional space and their agency	130
8	Who am I and where do I belong? The perception and evaluation of teacher leaders concerning teacher leadership practices and micro-politics in schools	120
9	Teacher-perceived distributed leadership, teacher self-efficacy and job satisfaction: A multilevel SEM approach using the 2013 TALIS data (Sun & Xia, 2018)	110

Table 2 presents the benchmark publications within the corpus, each cited more than 100 times. The most influential, Fairman and Mackenzie (2015), with 332 citations, address the relational mechanics through which teacher leaders exert influence. Sebastian et al. (2016) and Lai and Cheung (2015), ranked second and third, respectively, theorize the principal-teacher leadership nexus and the change-

agentive role of teachers. Collectively, these benchmark publications constitute the intellectual scaffolding of the field and signal the recurrent centrality of three theoretical themes, influence, principal-teacher coupling, and change agency, that structure subsequent inquiry.

5.5. Citation Trajectory

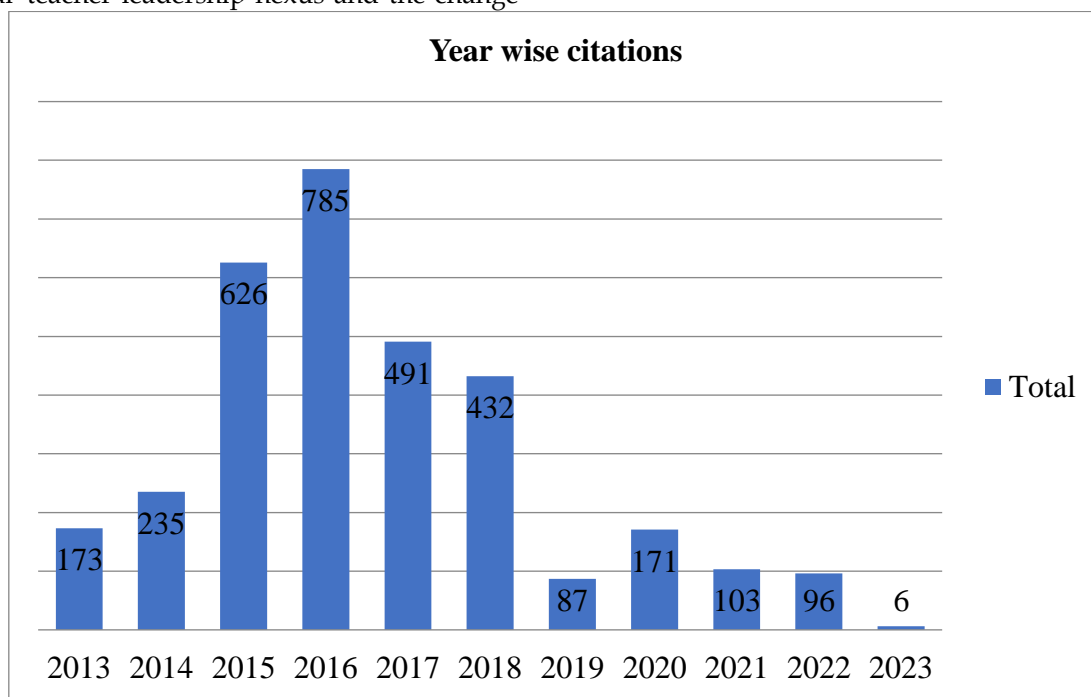


Figure 5: Citation Trajectory of Publications on the Outcomes of Teacher Leadership (2013–2023).

Figure 5 displays the annual citation trajectory of the corpus. Citations increased steadily from 2013, peaking in 2016 with 785 citations, followed by a moderate decline in subsequent years. A renewed upward trajectory is anticipated from 2023 onward, reflecting both the growing empirical base and the consolidation of teacher leadership within contemporary educational reform discourse. The peak in 2016 coincides with the publication of several benchmark works, including Sebastian et al. (2016)

and Lai and Cheung (2015), suggesting that the field experienced a period of intensive theoretical consolidation mid-decade.

5.6. Geographic Distribution of Research

Figure 6 presents the geographic distribution of the corpus. The United States accounts for 33 publications over the review window, followed by China and Turkey, both of which have contributed substantially to the field's expansion. This



framework, including clusters oriented toward professional learning communities, instructional practice, organizational learning, and principal-teacher leadership coupling. Complementary manual thematic coding of the abstracts yielded a finer-grained mapping of the outcome areas, displayed in Figure 8.

Figure 8 displays five general outcome areas

through which teacher leadership contributes to sustainable school improvement. The professional learning community, a dimension of teachers' professional development, is the most prominent outcome area, accounting for 46.5 percent of the coded outcomes. This is followed by outcomes related to student learning and to teachers' classroom instructional practice.

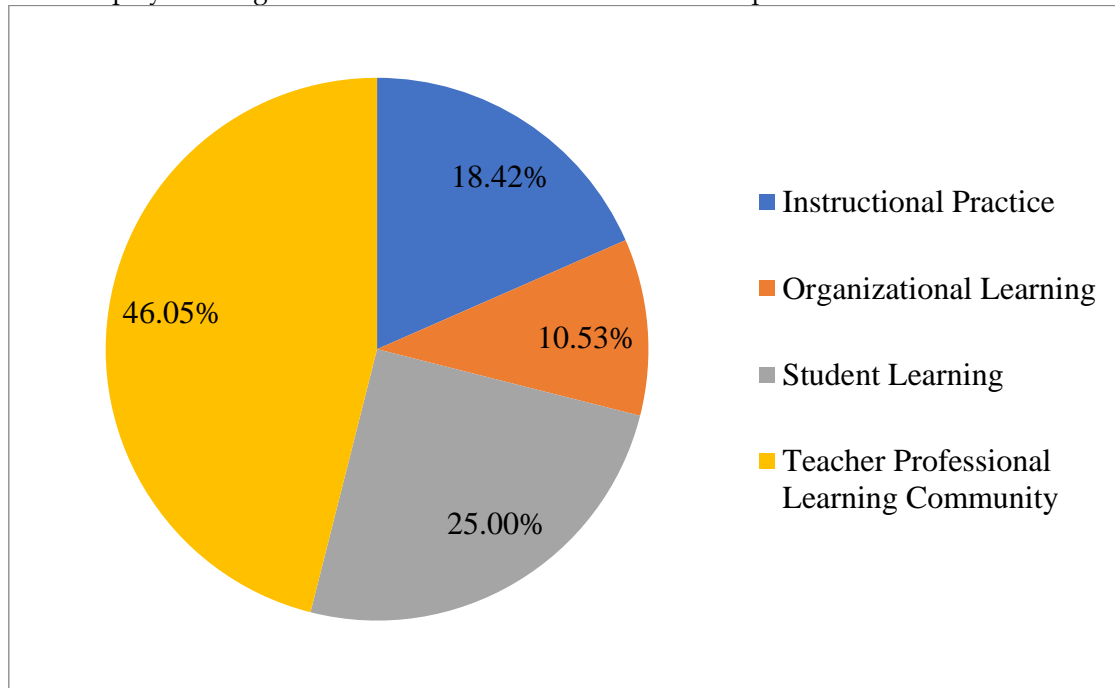


Figure 8: Outcome Areas of Teacher Leadership.

The remaining outcomes are distributed across organizational learning, teacher self-efficacy and job satisfaction, and school-level change. This distribution empirically substantiates the theoretical claim that the pathway from teacher leadership to student outcomes is mediated by collegial learning structures and cultural conditions rather than enacted through direct effects.

## 6. DISCUSSION

The bibliometric findings presented in Section 5 are interpreted in this section in light of the integrated theoretical model articulated in Section 2. The discussion is organized along three theoretically informed pathways: the distributed leadership process linking principal and teacher leadership (6.1), the mediating role of the professional learning community (6.2), and the mediating role of organizational learning (6.3).

### 6.1. The Distributed Leadership Process and Teacher-Principal Coupling

Teacher leadership is now widely regarded as a

catalyst for educational reform, with educational systems increasingly recognizing the contributions of teacher leaders to school progress (Pang & Miao, 2017). The bibliometric findings reinforce the theoretical claim that teacher leadership is relationally coupled with principal leadership: three of the benchmark publications in Table 2, including Sebastian et al. (2016), Lai and Cheung (2015), and the integrated-leadership-systems study, explicitly theorize this coupling. The coupling operates through the distributed leadership mechanism articulated by Harris (2005) and Spillane (2006): principals create the structural and cultural conditions under which teacher leadership can be legitimately enacted, while teacher leaders supply the proximal agency through which instructional improvement is realized.

Ankrum (2016) and García-Carrión (2015) extend this argument by positioning teachers as strategic agents of change within sustainable school improvement. York-Barr and Duke's (2004) foundational articulation, that teacher leadership is the process by which teachers individually or collectively influence colleagues, principals, and the

school community, is empirically substantiated by the distribution of outcome areas in Figure 8, which shows that teacher leadership operates through relational influence rather than positional authority. This picture is reinforced by recent scholarship. Al-Mahdy, Hallinger, Emam, Hammad, Alabri, and Al-Harthi (2024) demonstrated, in a study of 887 teachers across 78 Omani middle schools, that principals' learning-centered leadership supports teacher professional learning through the mediating roles of teacher trust and teacher agency – a finding that empirically substantiates the principal-teacher

coupling emphasized in this section. Adams, Harris, Moosa, Jones, and Khaleel (2025), in a science-mapping review of distributed leadership research from 1988 to 2023, further documented that the sustainability of leadership-distribution practices remains closely tied to how principals' structure, support, and legitimate teacher-led work, a conclusion that aligns directly with the bibliometric prominence of principal-teacher coupling in the reviewed corpus. Figure 9 summarizes the discussion of the teacher leadership process as enacted in the reviewed corpus.



*Figure 9: The Teacher Leadership Process and Its Outcome Pathways.*

The literature review indicates that teacher leadership is most effectively implemented where principal leadership is also effective, with the effect on student learning outcomes mediated by the professional learning community (PLC) and organizational learning, both of which shape instructional practice. This mediational logic is theoretically coherent with the integrated model articulated in Section 2 and is empirically supported by the thematic distribution in the corpus.

## **6.2. Professional Learning Community as a Mediating Mechanism**

Ding and Thien (2025) demonstrated that teacher leadership implementation affects the school's PLC through the principal's learning-centered leadership. This finding empirically instantiates the theoretical mechanism proposed by DuFour (2006) and Stoll and Louis (2008), in which PLCs function as structured spaces for collegial inquiry. Ankrum (2016) likewise argued that school leaders play an important role in exploring and harnessing teachers' leadership potential by cultivating shared leadership, responsibility, and accountability within the school community, commitments that, in turn, catalyze

change. Stoll and Louis (2008) conceptualized the PLC as teachers' critical stance in interrogating their own instructional practices in an ongoing, reflective, and collaborative manner, oriented toward enhanced student learning.

Other research has shown that PLCs play an important role in supporting change by developing coherent structures, fostering a collaborative culture, and promoting effective learning activities. These conditions, in turn, help novice teachers overcome early-career difficulties and foster their motivation to engage in transformative practice (Tam, 2015). This finding aligns with DuFour (2006), who argued that cultivating a PLC requires three commitments: prioritizing learning over teaching, working collaboratively, and holding the community accountable for strong learning outcomes. DuFour further theorized that PLCs are enacted through the combined engagement of individuals across organizational levels, from grade-level teaching teams and school committees to school departments, districts, ministries, and national professional organizations. Katz et al. (2009) specified four conditions for PLC success: teachers maintain a challenging focus; build productive relationships

through trust; collaborate for mutual benefit; and engage in rigorous inquiry.

Langdon Warren (2021) examined the importance of teacher leadership in improving student learning, arguing that teachers who lead both inside and outside the classroom are driven by the goal of enhancing student learning, ultimately contributing to academic success. Consistent with this view, a cluster of studies reports that teacher leadership has a positive effect on classroom student learning (Fairman & Mackenzie, 2015; Nguyen et al., 2020; Ningsih & Wijayanti, 2019; Valdez et al., 2015; Wilson, 2016), that this effect is realized through effective instructional practices (Coggins & McGovern, 2014; Elfers & Plecki, 2016; Lai & Cheung, 2015; Xie & Shen, 2013), and that these practices are supported by a conducive school environment (Lowery-Moore et al., 2016; Pang & Miao, 2017; Schott et al., 2020) and by a functioning PLC (Curtis, 2013; Ding & Thien, 2025; Sales et al., 2017; Sebastian et al., 2016). The bibliometric prominence of the PLC outcome area in Figure 8 – 46.5 percent of coded outcomes – provides direct empirical support for this theoretical pathway. Extending these findings to the post-2023 period, Ghamrawi, Shal, and Ghamrawi (2024) showed, in a three-year grounded-theory study of a transformative professional development model in Lebanon, that structured opportunities for teachers to lead collaborative professional learning days are a primary driver of teachers' capacity for leadership among colleagues. Kılınc, Polatcan, Savaş, and Er (2024) similarly demonstrated, in a Turkish structural equation modelling study, that transformational principal leadership predicts teachers' innovative practices via teacher commitment, with trust in the principal moderating this effect, corroborating the finding in Figure 8 that PLCs and teacher well-being outcomes are analytically intertwined. Taken together, these converging lines of evidence confirm that the PLC is not merely a context in which teacher leadership is exercised but a substantive outcome that teacher leadership actively constructs and sustains.

### **6.3. Organizational Learning as an Enabling Condition**

Teacher leadership also serves to develop organizational learning and build instructional capacity (Wieczorek & Lear, 2018). Kılınc (2014) examined the direct and indirect effects of teacher leadership on instructional practice and found that teacher self-efficacy directly influences teacher leadership, but that teacher leadership itself does not directly affect instructional practice; rather, its

influence is mediated by teacher self-efficacy and a supportive organizational environment. This finding is theoretically consistent with Senge's (1990) emphasis on personal mastery and team learning as disciplines of the learning organization, and with Argyris and Schön's (1978) distinction between single-loop and double-loop learning, suggesting that teacher leadership's impact on instructional practice depends on the organization's capacity to institutionalize the learning that teacher leadership generates.

Sokol, Gozdek, and Figurska (2015) emphasized that principal leadership is central to cultivating teachers' leadership capacities, which in turn shape the school's learning culture as an organization. Damkuvienė, Valuckienė, and Balčiūnas (2019) further argued that teachers who exercise strong leadership contribute to collegial learning, promote institutional change, and sustain a shared learning culture in schools. Kurt (2016) demonstrated that distributed leadership, exercised by principals, indirectly influences the organizational learning environment and teacher self-efficacy, with teacher leadership serving as the mediating mechanism.

More specifically, high student learning outcomes are attainable in the presence of a supportive organizational learning culture and are shaped by how teachers exercise leadership in instructional processes both inside and outside the classroom (Cherkowski, 2018; Printy & Liu, 2021; Wieczorek & Lear, 2018). Complementarily, students' self-efficacy and teacher leadership are jointly consequential for students' motivation to learn; where teacher leadership is inadequate, students' motivation and academic attainment suffer (Öqvist & Malmström, 2018). Taken together, these findings support the theoretical proposition that organizational learning functions as the sustaining condition through which teacher leadership's effects are institutionalized over time. Recent evidence deepens this understanding. Polatcan, Özkan, and Bellibaş (2024) demonstrated that transformational leadership cultivates teacher innovativeness through teacher agency – a mechanism that constitutes an individual-level expression of the double-loop learning that Argyris and Schön (1978) theorized as the engine of organizational transformation. Dasci Sonmez, Cemaloglu, and Kahraman (2025) further showed, in a Turkish sample, that both instructional leadership and teacher leadership significantly contribute to teachers' professional learning – findings that directly corroborate the integrated model proposed in Section 2. Hairon, Goh, and Chua (2015) additionally demonstrated, in the Singaporean context, that even within highly centralized educational systems, teacher leadership embedded in structured professional learning

teams remains a decisive factor in sustaining collegial learning. Collectively, these contributions confirm that the organizational learning pathway identified in the reviewed corpus is a generalizable, contemporary theoretical mechanism.

These findings carry important implications for school leadership development programs. Specifically, principals need to move beyond symbolic support for teacher leadership toward the deliberate design of structured professional learning opportunities, such as teacher-led professional learning communities, mentoring systems, and collaborative inquiry cycles. Leadership development programs should therefore prioritize building principals' capacity to create enabling conditions, including trust, distributed decision-making structures, and sustained professional learning cultures, through which teacher leadership can be effectively enacted and sustained.

## 7. CONCLUSION AND FUTURE RESEARCH

### 7.1. Summary Of Findings

The bibliometric synthesis of 78 publications from 2013 to 2023 establishes that teacher leadership plays a consequential role in schools' sustainable improvement. Research on the topic has expanded steadily over the past decade, with a pronounced peak in 2016, and is concentrated in high-impact journals indexed by Springer, ScienceDirect, ProQuest, Emerald, and ERIC. The outcomes of teacher leadership cluster into three substantive areas: student learning, organizational learning, and the professional learning community, which jointly mediate the pathway to sustainable improvement. Student learning is realized when teachers, acting as leaders within the classroom, enact effective instructional practice supported by organizational learning and a PLC; teacher leadership, in turn, is

enabled by the principal's leadership.

### 7.2. Theoretical And Practical Contributions

Theoretically, the study contributes an integrated model that positions teacher leadership within a distributed leadership framework and specifies two mediating mechanisms, including PLC and organizational learning, through which teacher leadership's effects are realized. Practically, the study underscores that principals must understand how to cultivate and sustain teacher leadership if sustainable school improvement is to be achieved. The findings also provide evidence-based support for identifying the field's intellectual core and for informing doctoral training, systematic reviews, and policy-oriented syntheses.

### 7.3. Limitations And Future Research

This study has three principal limitations. First, the corpus is restricted to English-language, peer-reviewed publications retrieved from five databases; future work could broaden the scope to include non-English scholarship and grey literature to capture comparative and contextual perspectives. Second, the study has not yet identified the specific strategies or professional development programs that principals can adopt to effectively cultivate teacher leadership. Third, the bibliometric analysis captures aggregate patterns but does not adjudicate the quality of individual studies; complementary meta-analytic work would strengthen the evidentiary base. Future research should therefore prioritize (a) the design and empirical evaluation of principal-led professional development programs for teacher leadership; (b) comparative international studies examining how cultural and institutional contexts shape the teacher leadership-outcomes relationship; and (c) longitudinal investigations of the sustainability of teacher leadership effects on school improvement.

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