The Relationship between Distributed Leadership and School Effectiveness: A Systematic Review

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DOI: https://dx.doi.org/10.47772/IJRISS.2025.905000237

Received: 28 April 2025; Revised: 08 May 2025; Accepted: 10 May 2025; Published: 10 June 2025

ABSTRACT

This study aims to explore how empirical research conceptualizes and measures the relationship between distributed leadership (DL) and school effectiveness (SE). A systematic literature review was conducted, analyzing 670 articles retrieved from four major academic databases. After applying selection criteria, 46 studies were identified for detailed analysis. The results revealed that four instruments were used to measure DL, with the Distributed Leadership Inventory (DLI) being the most widely adopted. For SE, four main instruments were identified, with many studies utilizing or adapting the School Effectiveness Questionnaire (SEQ). Among the theoretical frameworks explored in the relationship between DL and SE, Spillane's Distributed Leadership Theory is the most frequently applied. Additionally, Open Social Systems Theory is commonly utilized to understand how schools, as open systems, interact with their environment and how these interactions influence school effectiveness. Three types of effect mechanisms linking DL and SE were identified: direct effects, mediating effects, and DL as a mediating variable. Among these, mediating effects were the most frequently examined. The limited exploration of the direct relationship between DL and SE underscores a significant gap in the existing literature. Future research should prioritize examining this direct connection and consider incorporating diverse theoretical frameworks to enrich the understanding of how DL influences SE.

Keywords: Distributed Leadership; School Effectiveness; Systematic Literature Review; Effect Mechanism; Empirical studies

INTRODUCTION

The distinctive attributes of highly effective schools are closely associated with improved student achievement (Lezotte & Snyder, 2011). An effective school plays a critical role in providing quality education, preparing students for the workforce, and helping them achieve their personal and academic goals (Al-Harthi & Al-Mahdy, 2017). Therefore, enhancing school effectiveness and delivering high-quality instruction have become core responsibilities and shared objectives for school leaders, educators, and society at large.

In the Chinese context, the National Medium- and Long-Term Education Reform and Development Plan (2010–2020) explicitly identified improving school effectiveness and fostering a strong school culture as key priorities for the nation’s educational agenda. Furthermore, schools are increasingly expected not only to maintain high levels of operational efficiency but also to actively promote holistic student development. The release of the Opinions on Further Reducing the Burden of Homework and Campus Training for Students in Compulsory Education in July 2021—commonly referred to as the "Double Reduction" policy—underscored the importance of improving instructional quality and teaching effectiveness in schools. Issued by the General Office of the CPC Central Committee and the General Office of the State Council, this policy aims to reposition schools as the primary agents in delivering quality education and achieving educational outcomes. In response, provincial and municipal governments have introduced a range of initiatives aimed at improving quality and efficiency, placing the improvement of school effectiveness at the forefront of current educational reform efforts.

The principal's leadership is the foremost determinant of a school's improvement. Schools flourish most

effectively under the direction of a principal possessing robust leadership skills (Wiyono et al., 2023). The actions of school principals demonstrate that distributed leadership fosters the development of teachers' leadership abilities. Training further enhances the positive impact of distributed leadership on teachers' growth. School principals must consistently fulfill their obligations and prioritize the professional development of educators to enhance school effectiveness (Galdames-Calderón, 2023). Obadara (2013) demonstrated significant relationships between distributed leadership and school effectiveness. It is recommended that distributed leadership be adopted to empower all individuals within schools to improve the efficiency, relevance, and effectiveness of their roles.

A further discovery indicates that distributed leadership enhances school effectiveness. The prevailing autocratic leadership style in other schools contributes to the institution's decline (Shakir et al., 2011). A positive and strong correlation exists between distributed leadership and school effectiveness. This research suggests that a change in distributed leadership may result in a transformation in school effectiveness. Essentially, when school leaders demonstrate or enhance their use of distributed leadership, the perception of school success correspondingly improves (Al-Harthi & Al-Mahdy, 2017). Despite numerous references to the correlation between leadership and school effectiveness in both scholarly and mainstream literature, there has been limited systematic investigation into the specific nature of the relationship between distributed leadership and school effectiveness. This work aims to conduct a thorough analysis of the existing literature on DL and SE to elucidate the mechanisms of their interrelation, the methodologies employed, the measuring instruments utilized, and the theories that have been applied to connect DL and SE. Consequently, the following research questions are posed.

Research Questions

This study mainly focused on answering the following questions:

Q1. What methodological approaches (qualitative, quantitative, mixed methods) have been used to measure distributed leadership on school effectiveness?

Q2. Which theories have been used to explain the linkage between distributed leadership on school effectiveness?

Q3. What are the effect mechanisms between distributed leadership on school effectiveness?

METHODOLOGY

A systematic literature review (SLR) identifies, evaluates, and interprets all relevant research on a topic, issue, or research question (Lame, 2019). The primary goal of a SLR is to systematically identify, search for, and integrate existing literature that is directly relevant to prior studies. This process is carried out in a well-structured and transparent manner, employing consistent processes at each stage (Ismail et al., 2021). This study carried out an SLR to identify, synthesize, and interpret the findings of relevant studies regarding DL and SE.

The SLR utilized the PRISMA procedure, which stands for Preferred Reporting Items for Systematic Reviews and Meta-Analyses (Moher et al., 2009). This is a step protocol, and aims to reduce bias and enhance the clarity of the research process in systematic reviews, aiming to enhance the credibility and dependability of published papers (Moher et al., 2015).The PRISMA process consists of four stages: identification, screening, eligibility, and data abstraction and analysis.

Identification Phase

The initial stage of the SLR process is identification, which took place in March 2025. The process entailed keyword identification and database identification. Moher et al. (2009) suggested that it is necessary to have at least one database. In this study, four databases were used: Scopus, Google Scholar, ScienceDirect, and Sage Journals. Scopus contains more than 7000 publications from various fields. It is considered to be the largest database of peer-reviewed literature (Dias et al., 2019). Web of Science is a comprehensive global citation database that includes education-related articles from various disciplines. It is highly regarded as one of the most dependable resources for scholarly work globally (Nave & Ferreira, 2022). Science Direct was selected because

it contains over 18 million articles and more than 2500 journals. Sage Journals contains over 1100 journals, disciplines ranging from science, technology, and medicine to humanities and social sciences (Zhong & Zhu, 2024). These databases are considered the leading indexing systems for citations and are highly respected for publishing scientific articles. They cover all peer-reviewed research and gray literature from various professional fields related to education. The search string used for all the databases was: TITLE-ABS-KEY ("distributed leadership" OR "shared leadership" OR "collective leadership" OR "delegated leadership" OR "leadership distribution" OR "leadership decentralization" OR "distributed lead*") AND ("school effectiveness" OR "school performance" OR "school improvement" OR "student achievement"). The detailed search strings and results from each database are listed in Table 1. The results yielded a total of 670 documents from the four databases.

Table 1：Search strings and results

Database	Search strings	Results
Scopus	TITLE-ABS-KEY ("distributed leadership" OR "shared leadership" OR "collective leadership" OR "delegated leadership" OR "leadership distribution" OR "leadership decentralization" OR "distributed lead*") AND TITLE-ABS-KEY ("school effectiveness" OR "school performance" OR "school improvement" OR "student achievements")	136
Web of Science	TS= ("distributed leadership" OR "shared leadership" OR "collective leadership" OR "delegated leadership" OR "leadership distribution" OR "leadership decentralization" OR "distributed lead*") AND TS= ("school effectiveness" OR "school performance" OR "school improvement" OR "student achievements")	208
ScienceDirect	("distributed leadership" OR "shared leadership" OR "collective leadership" OR "delegated leadership") AND ("school effectiveness" OR "school improvement" OR "student achievement" OR "school performance")	261
Sage Journals	("distributed leadership" OR "shared leadership" OR "collective leadership" OR "delegated leadership" OR "leadership distribution" OR "leadership decentralization" OR "distributed lead*") AND ("school effectiveness" OR "school improvement" OR "student achievement" OR "school performance")	65
Total		670

Screening Phase (Inclusion And Exclusion Criteria)

Screening is a process of including or excluding publications based on criteria established by the authors. During the screening process, the eligibility, inclusion, and exclusion criterion were established to identify appropriate articles for inclusion in the systematic review. The criteria for inclusion and exclusion were shown in Table 2.

Table 2：The criteria for inclusion and exclusion

Criteria	Inclusion	Exclusion
Publication date	No time limitation	
Language	English	Non-English
Document type	No restriction; all document types (research articles, reviews, book chapters, etc.) were considered	None based on document type.
Topic	Studies focusing on distributed leadership and its	Studies not addressing distributed leadership or not related to school

relevance	relation to school effectiveness	effectiveness
Full-text availability	Full text accessible via institutional access or open access	Studies with no full text available

To ensure the relevance and quality of the selected literature, a set of inclusion and exclusion criteria was systematically applied. First, the author did not set time limitations; therefore, all the documents that met the initial search criteria were included. Second, the language was limited to English, as all eligible results retrieved from the selected databases (Scopus, Web of Science, ERIC, and ScienceDirect) were in English. Non-English publications were excluded to ensure clarity and consistency. Third, while no restrictions on document type were imposed during the initial search, the final selection included primarily peer-reviewed journal articles, ensuring academic rigor. Fourth, only studies that addressed distributed, shared, or collective leadership in relation to school effectiveness, including aspects such as school performance, school improvement, and student achievement, were included. Following the identification procedure, a total of 670 articles were screened, with 46 articles remaining (see Fig. 1).

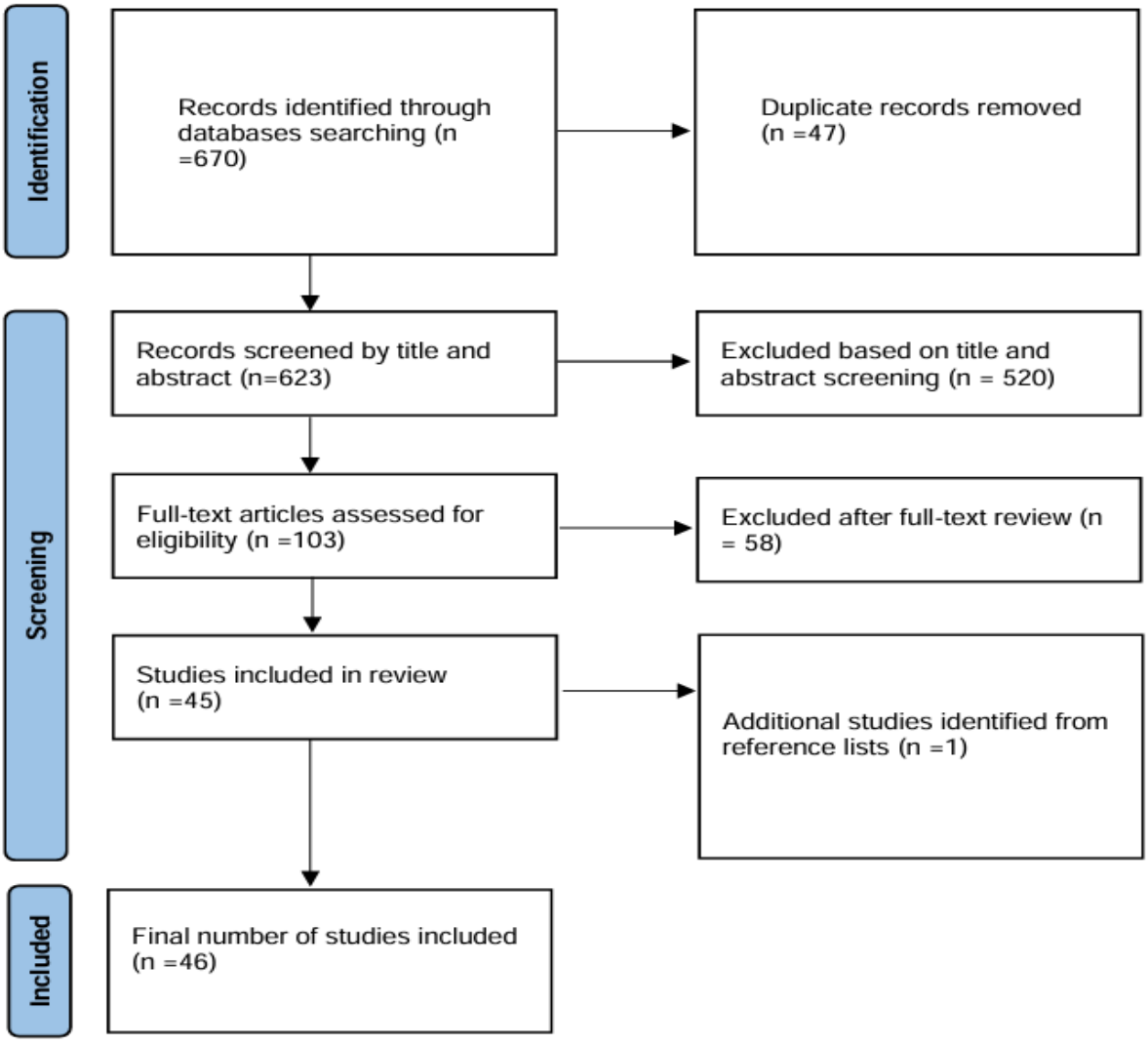

Figure 1: PRISMA Flow Diagram

Eligibility And Duplication Exclusion (Manual Screening)

Eligibility is a manual process in which authors selectively reject articles based on specific criteria. Prior to the eligibility process, duplicate articles should be removed. After conducting a thorough comparison of all four databases, we successfully identified and eliminated 47 duplicate articles, resulting in a final count of 623 unique articles. These retrieved articles were carefully reviewed during the eligibility process.

To facilitate the comprehensive selection of papers for inclusion and prevent any bias in the process, specific criteria were developed based on the research topics. The process of selecting and analyzing articles was carried out through a series of sequential steps.

In the first screening, we examined the title, abstract, and keywords of each article, using a binary categorization system (1 = relevant, 0 = not relevant). We set the following criteria: (a) at least one of the parts should contain both "distributed leadership" and "school effectiveness"; (b) articles that contained only one of the keywords were excluded. In this phase, 520 articles were excluded, leaving 103 articles remaining.

In the second screening, we carefully read the full text of each article. In this process, we defined the following criteria: (a) for quantitative research, the purpose should be related to examining the relationship between DL and SE; (b) for qualitative research, the research questions or the objective of the study should focus on the role of distributed leadership in formulating school effectiveness, or vice versa; (c) at least one of the hypotheses should mention the relationship between DL and SE; (d) the results should mention the relationship between DL and SE; (e) articles that only discuss one of the two variables should be excluded; (f) articles that mention DL and SE but do not discuss the relationship between them should be excluded; (g) full texts that are irrelevant to the research should be excluded. For articles that contained multiple research questions and/or hypotheses not relevant to the current study, only the relevant questions and/or hypotheses were included in the analysis. In this phase, 58 papers were excluded because they did not meet the criteria, and an additional paper was identified from reference lists. Finally, 46 articles were selected for analysis.

To mitigate bias in the selection of papers for inclusion, a separate researcher was tasked with reviewing and categorizing the studies according to predetermined inclusion and exclusion criteria. The researcher also coded the title, abstract, and keywords of each article, as well as the full text, in a binary manner (relevant/not relevant). For articles where the researchers had differing opinions, they reread and discussed them to decide whether they should be included. Finally, the 46 articles were considered to meet all the inclusion criteria.

Data Extraction and Analysis

In this study, 46 research articles were found to meet the inclusion and exclusion criteria. The literature was analyzed using a review matrix to extract and efficiently organize information. The structure of the matrix was based on the research questions and included the following features: instruments, effect mechanism (direct effect, mediator, moderator), and theory or model. All items were promptly retrieved and encoded.

RESULTS AND DISCUSSION

Descriptive Analysis

The selected references were categorized and summarized according to their type and publication date in Table 3.

Table 3： Types and Publication Dates of References

	Year of publication			
Type of reference	2009-2013	2014-2018	2019-2023	2024
Article	3	15	13	5
Book Chapter			1	1
Dissertation/Thesis	1	3	1	
Review			1	1
Short survey			1	
Total	4	18	17	7

The 46 reviewed papers were published in various journals. Most were published in the *International Journal of Educational Sciences* and *Educational Management Administration and Leadership*, followed by *Educational Administration Quarterly*, *Education Sciences*, *Education Policy Analysis Archives*, and *Africa Education Review* (see Table 4).

Table 4: Journals with the Most Publications

Journals	Number
International Journal of Educational Sciences	3
Educational Management Administration and Leadership	3
Educational Administration Quarterly	2
Education Sciences	2
Education Policy Analysis Archives	2
Africa Education Review	2

This section presents a review of how DL and SE have been examined in the literature. The results were organized according to the research questions.

A. Q1. What methodological approaches (qualitative, quantitative, mixed methods) have been used to measure distributed leadership on school effectiveness?

Out of the reviewed distributed leadership on school effectiveness studies. Quantitative papers were 20 (43%). The qualitative papers were 17 (37%) and 9 (20%) papers were mixed studies (see figure 2).

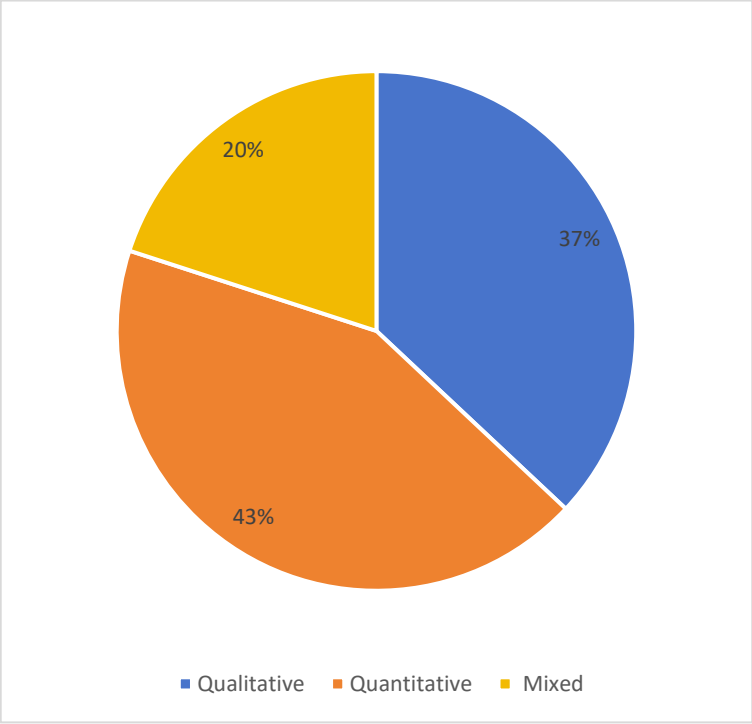

Figure 2: Research Methodologies of the Selected Articles

Among the reviewed papers, 17 used questionnaires (36.96%), 10 used interviews (21.74%), and 6 used documentary analysis (13.05%). Additionally, 4 papers used both interviews and observations (8.7%), 3 applied a combination of questionnaires and interviews, or interviews, observations, and documentary analysis (6.53%), and 1 paper used a mix of interviews and documentary analysis, online surveys and interviews, or focus groups (2.17%).

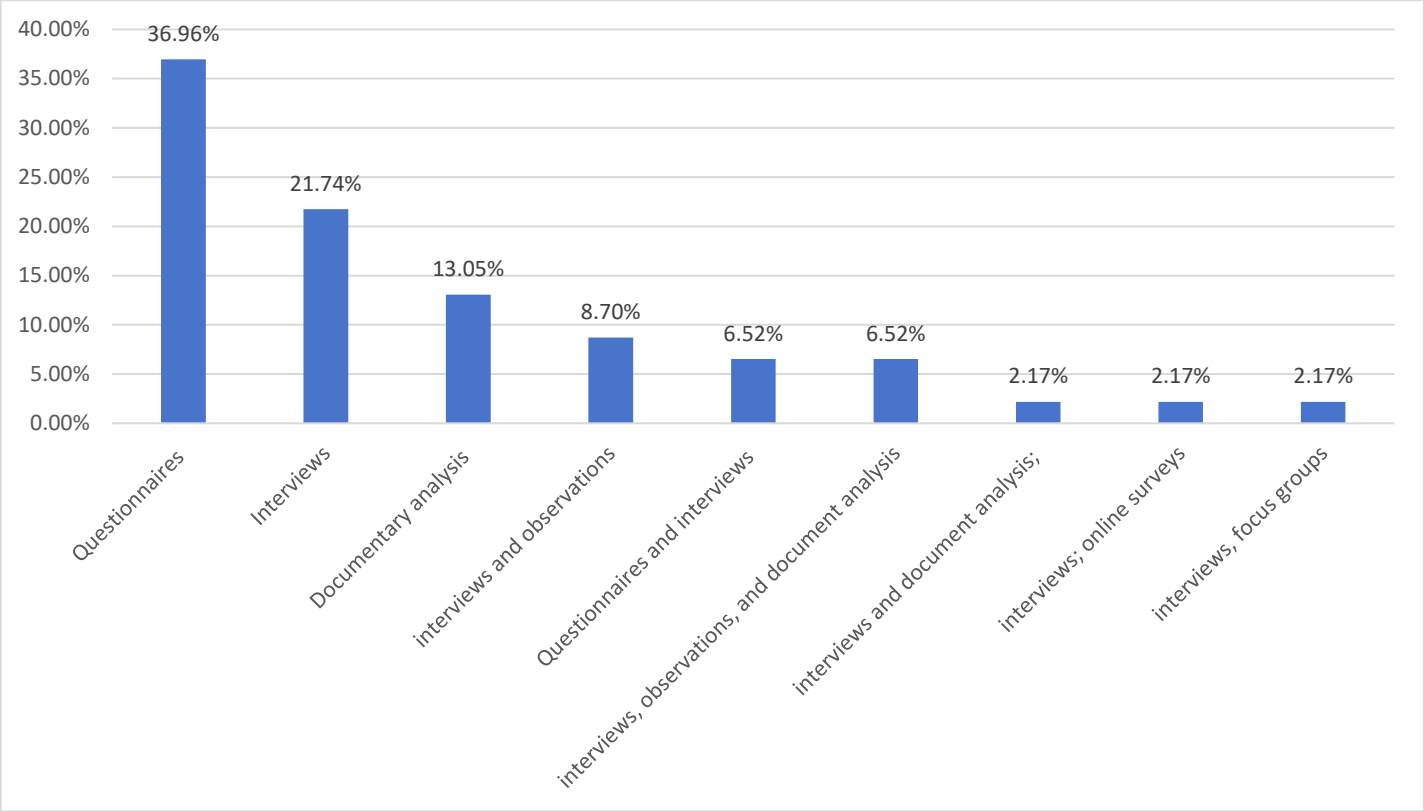

Figure 3: Data Collection Method

Having outlined the distribution of research methods used across the reviewed papers, including questionnaires, interviews, and documentary analysis, this section now focuses on the specific tools employed in empirical studies, namely SE and DL. These tools are essential for exploring the impact of leadership practices on school performance. SE measures how various factors influence student achievement and overall school performance, while DL offers a framework for understanding how leadership roles are shared among educators to drive school improvement. A closer examination of how these tools are applied provides valuable insights into their contribution to enhancing educational outcomes.

Our research also aimed to track the research instruments used to measure distributed leadership and school effectiveness (see Table 5 & Table 6). According to the summary of instruments used in the 20 quantitative articles, we found that a total of four different instruments were used to measure DL (see Table 5). Of these, four studies used self-constructed questionnaires, and two studies did not specify the source of the questionnaires. The Distributed Leadership Inventory (Hulpia et al., 2009) was the most widely used instrument among the 20 quantitative articles, making it the most commonly employed tool to measure DL. The second most frequently used tool was the DL Readiness Scale (DLRS), which was developed based on Elmore's theory.

Table 5: Frequency of DL instrument

Instrument (DL)	Frequency
Distributed Leadership Inventory (Hulpia, Devos & Van Keer, 2009）	6
Distributed Leadership Scale (Aslan & Bakır, 2015).	1
DL Scale (Özer and Beycioğlu , 2013)	2
DLRS developed by the Connecticut State Department of Education (2002), based on the theoretical framework of Elmore (2000)	4
self-constructed questionnaire	3
not mention	4

Among the 20 quantitative articles reviewed, 6 (30%) used the Distributed Leadership Inventory (DLI) to measure DL, making it the most widely used instrument. The DL Readiness Scale developed by the Connecticut State Department of Education (2002) was adopted in 4 articles (20%), ranking as the second most popular tool for measuring transformational leadership. The remaining instruments include: the Distributed Leadership Scale by Aslan and Ağıroğlu Bakır (2015), which accounted for 5%; the DL Scale by Özer and Beycioğlu (2013), which contributed 10%; and self-constructed questionnaires, which made up 15%. Instruments with unspecified origins accounted for 20%. Therefore, it is concluded that instruments measuring DL were in a relatively large number, but most scholars selected Distributed Leadership Inventory as their instrument to measure distributed leadership. Due to its established validity and reliability, DLI is mature enough and the most welcome instrument to measure DL.

Among the 20 quantitative studies reviewed, 3 studies utilized self-constructed questionnaires, while 4 studies used questionnaires without specifying their source. Regarding standardized measures of school effectiveness, 4 validated instruments were identified (see Table 6). The most frequently used instrument was the School Effectiveness Questionnaire (SEQ) developed by Lezotte and Snyder (2011), which appeared in seven studies (35%). The School Effectiveness Index (SE Index), developed by Hoy (2009), was used in 4 studies (20%). Following this, the Sustainable School Improvement Questionnaire (SSIQ) and the Institutional Effectiveness Inventory, adopted from Pihie and Mahyuddin (2008) and FRN (2004), were each used in one study (5%).

Table 6：Frequency of SE instrument

Instrument (SE)	Frequency
School Effectiveness Questionnaire by Lezotte and Snyder (2011).	7
SE Index (Hoy ,2009)	4
Sustainable school improvement questionnaire (SSIQ)	1
Institutional effectiveness inventory was adopted from Pihie and Mahyuddin (2008) and Frn (2004)	1
self-constructed questionnaire	3
not mention	4

Although the instruments used to measure school effectiveness originated from different developers, including Oregon County Public Schools (OCPS) and Çobanoğlu (2008), they all share a common conceptual foundation: the School Effectiveness Questionnaire (SEQ) proposed by Lezotte and Snyder (2011).

B. Q2. Which theories have been used to explain the linkage between distributed leadership on school effectiveness?

As shown in Table 7, all the theories referenced across the reviewed articles, except for those that were not mentioned. It can be observed that the Distributed Leadership Theory by Spillane (2006), Gronn (2002), and Elmore (2000) is the most frequently applied, appearing 24 times, accounting for 52.17% of the total mentions. This indicates that Distributed Leadership Theory is most frequently used to explain how DL enhances SE, more than any other theory. The second most frequently mentioned theory is the Open Social Systems model, which was cited three times (6.52%), suggesting its relevance in discussing the relationship between DL and SE. Other theories and models were mentioned only once in the articles.

Table 7: Theories in the Reviewed Studies

Theoretical Framework	Frequency	Source(s)
Devolution Theory	1	Naidoo (2002)

Situational Theory;	1	Hersey & Blanchard (1969);
Behavioral Theory;	1	Blake & Mouton (1969)
Participative Theory	1	Likert, R. (1960)
Distributed Leadership Theory	24	Spillane (2006); Gronn (2002); Elmore (2000)
Contingency Theory	1	Lawrence & Lorsch (1967)
Collective Leadership Development Framework	1	Eckert（2019）
Social Learning Theory	1	Bandura, A. (1986)
Social Cognitive Theory	1	Bandura, A. (2001)
Social Constructivist Learning Theory; Transformative Learning Theory; Action Research (Influenced by PDSA Cycle)	1	Andreoli, P. M., Klar, H. W., Huggins, K. S., & Buskey, F. C. (2019)
Shared Leadership Theory	1	Pearce & Sims（2000）
Theories of Action	1	Argyris & Schön（1974）
School Effectiveness Theory	1	Edmonds （1979）
Education for Sustainable Development (ESD) Framework	1	UNESCO (2014)
Open Social Systems Theory	3	Hoy & Miskel（2013）

Distributed Leadership Theory: Among the foundational theories of distributed leadership, the most frequently cited frameworks are those developed by James Spillane, Peter Gronn, and Richard Elmore, each offering distinct conceptualizations of how leadership is enacted across multiple individuals within educational settings (Davis, 2009). Spillane (2006) emphasizes a practice-based approach, viewing leadership as a distributed activity situated in the interactions among leaders, followers, and their context. Gronn (2002) introduces the notion of concertive action, highlighting the emergent, collaborative nature of leadership through shared tasks and joint work. Elmore (2000), on the other hand, links distributed leadership to instructional improvement, arguing that leadership must be spread throughout the system to support capacity building at all levels.

Elmore, Spillane, and Gronn contributed to the development of the contemporary notion of distributed leadership. Viewing DL as a conceptual framework allows it to be applied to the broader context of educational leadership. Largely, DL has focused on the educational context of elementary and middle schools. However, in the last decade, DL has been applied to post-middle educational contexts (Park & Datnow, 2009).

2) Open Social Systems Theory: Hoy and Miskel's (2013) framework is based on Scott's (2003) and Scott & Davis' (2007) open social systems theory definitions. The open-systems concept arose as a counterargument to the implausible notion that the conduct of organizations could be detached from external forces. The open-systems concept analyzes organizations as entities that are both affected by and reliant on their environment. Schools function as social institutions that utilize resources, including personnel, pupils, and financial support from their surroundings. They process these inputs through an educational transformation process to yield trained and educated individuals and graduates.

The open-systems approach in schools encompasses both structure and process, representing a dynamic system characterized by stability and flexibility, incorporating both formal and informal organizational links. The School Social System Model was first proposed by Hoy and Miskel (2013), who conceptualized the school as a social system defined by the interplay of "inputs," "transformation processes," and "outputs." They emphasize

the interdependence of components, a clearly defined population, differentiation from its environment, a complex web of social relationships, and a collective orientation. This model is illustrated in Figure 4.

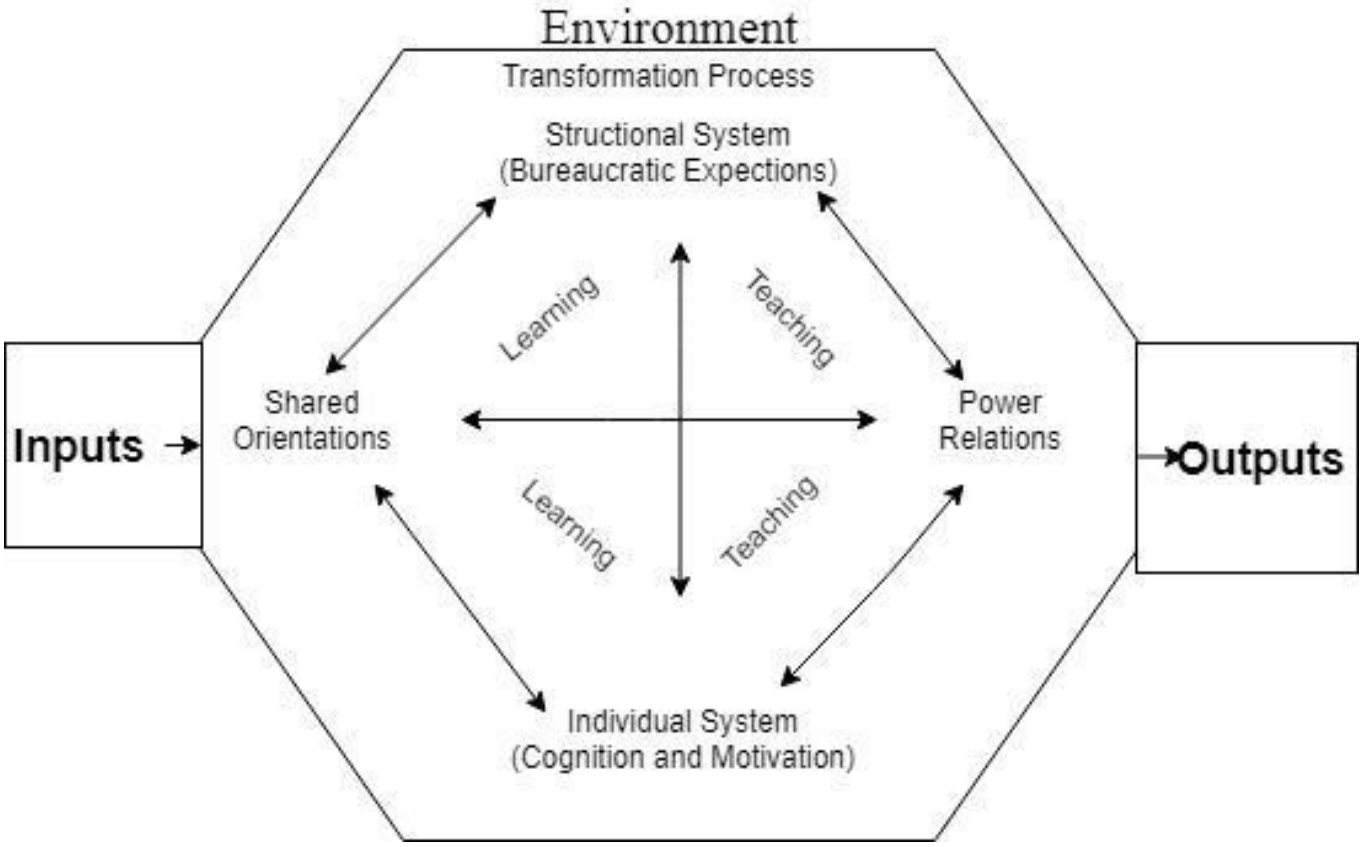

Figure 4: Open social system framework for school effectiveness

3) Other Relevant Theories*:* In addition to these core frameworks, Al Hassanieh (2020) highlighted the relevance of classical theories of leadership such as Situational Theory, Behavioral Theory, and Participative Theory in understanding the dynamics of distributed leadership. These theories contribute to DL research by providing insights into how leadership styles adapt to context (Situational Theory), how specific leader behaviors influence group outcomes (Behavioral Theory), and how inclusive decision-making fosters collaboration and shared responsibility (Participative Theory). Together, these theoretical foundations offer a multidimensional lens for examining the enactment and impact of distributed leadership in schools.

Devolution theory and distributive leadership both share similar traits, as they assume teachers should take on leadership roles and not just focus on imparting knowledge, skills, and values (Naidoo, 2002). Intriguingly, distributive leadership, like devolution, is based on the belief that it can contribute to the overall improvement of the school and indirectly enhance students' learning. The assumption extends to effective schools, labeled as self-managing schools, which are assumed to be more productive and autonomous than their counterparts (Cheng, 2022).

Social practice theory is essential for understanding the relationship between situations and leadership practices. According to Ariztía (2017), the theory of social practices asserts that these practices are collective actions marked by repetitive engagement. Distributed leadership is a social practice that emerges from the interaction of leaders, followers, and a specific situation. In this context, the school principal and teacher leaders are the key individuals involved, while the school environment provides the material context. This is directed towards school improvement (Supovitz et al., 2019).

Q3. What are the effect mechanisms between distributed leadership on school effectiveness?

To figure out the effect mechanism between DL and SE, the way the two were linked and the role the two played in the 46 articles were analyzed in detail (see Figure 5).

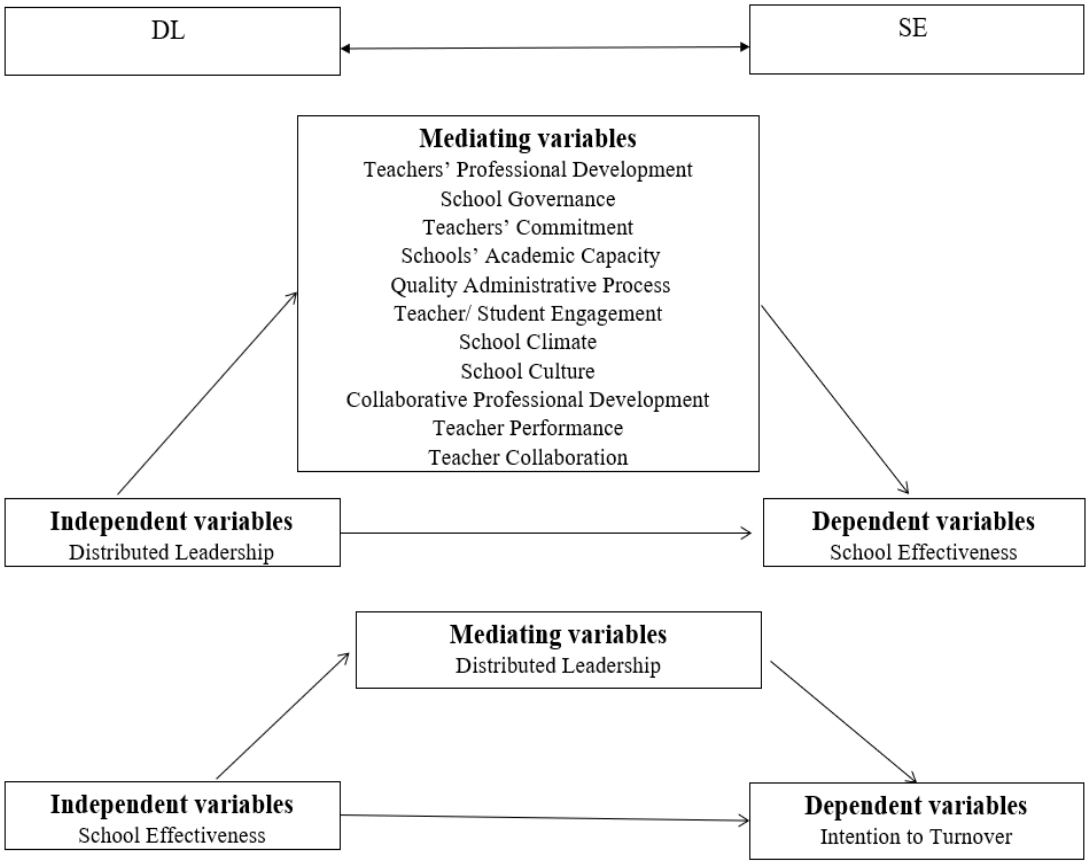

Figure 5: Effect Mechanism between DL and SE

Based on the findings, three distinct effect mechanisms were identified across the 46 reviewed articles. Among them, 12 studies investigated the direct effect between DL and SE, suggesting a reciprocal influence between these two variables. The relatively limited number of studies examining this direct relationship highlights its under-exploration in the existing literature, indicating a potential gap in the current understanding of the direct interaction between DL and SE.

Apart from the direct effect, 33 articles examined the mediating role of DL on SE. In all of these studies, DL was treated as the independent variable, SE as the dependent variable, and a total of 12 different mediating variables were identified. Interestingly, Bildirici and Özdemir (2021) found that DL played a mediating role in the relationship between school effectiveness (as the independent variable) and the intention to leave (as the dependent variable), suggesting a reversal of the typical variable structure found in other studies.

CONCLUSION

This systematic review highlights that DL generally has a positive impact on SE, as supported by most of the studies reviewed. However, the relationship between DL and SE is far from straightforward, as it can be influenced by various mediating factors and examined from multiple perspectives. This complexity underscores the need for a more nuanced understanding of how leadership practices translate into improved school outcomes. In terms of research tools, the Distributed Leadership Inventory（DLI）by Hulpia et al. (2009) was the most widely used instrument for assessing DL, while the School Effectiveness Questionnaire (SEQ) by Lezotte and Snyder (2011) was commonly employed to evaluate SE. The frequent use of these tools reflects their reliability and established validity. Overall, this review contributes to the growing body of literature advocating for distributed leadership as a strategic approach to enhancing school effectiveness and calls for continued inquiry into its mechanisms, impacts, and implementation across diverse educational settings. Among the theoretical frameworks explored in the relationship between DL and SE, Spillane's Distributed Leadership Theory is the most frequently applied. Additionally, Open Social Systems Theory is commonly utilized to understand how schools, as open systems, interact with their environment and how these interactions influence school effectiveness.

In terms of effect mechanisms, three distinct types were identified across the 46 reviewed studies. Among these, the most prevalent mechanism involves DL influencing SE indirectly through intermediary variables. Numerous studies have explored various mediating factors, indicating that DL typically impacts SE via these intermediaries. Interestingly, some research has positioned DL not only as an independent variable but also as a mediator, highlighting its dual role within educational effectiveness models. Notably, empirical studies that explicitly examine the direct relationship between DL and SE remain scarce, suggesting that this area is still underexplored within the broader field of educational leadership research. Within the reviewed articles, twelve unique mediators were identified in the DL-SE relationship: teachers' professional development, school governance, teachers' commitment, schools' academic capacity, quality administrative processes, teacher/student engagement, school climate, school culture, collaborative professional development, teacher performance, and teacher collaboration. Different scholars have investigated various mediators, yielding diverse findings. For instance, Al Hassanieh (2020) dedicated Research Question 2 to examining the impact of DL on school governance, which, in turn, contributes to enhanced school effectiveness. This underscores the contextual nature of mediators and suggests that the mechanisms linking DL and SE may vary across school environments, policy contexts, and leadership practices.

Limitations And Directions for Future Research

Though this study was conducted in accordance with the PRISMA guidelines, there are several limitations that should be acknowledged. First, no time limitations were imposed on the publication date of included studies. While this approach ensures a comprehensive overview of available literature, it may result in the inclusion of outdated studies that do not reflect the current state of research in the field. Second, due to language constraints, only articles published in English were included. This language bias may have led to the exclusion of significant research published in other languages, which could affect the generalizability of the findings. Third, the database search was limited to Scopus, Web of Science Core Collection, ScienceDirect, and SAGE Journals. While these databases are widely recognized and comprehensive, it is possible that relevant studies indexed in other academic databases were not captured in this review.

Another limitation of this review lies in the systematic review identified three distinct types of effect mechanisms in the relationship between DL and SE. However, several limitations should be noted. First, while various mediating variables were explored, studies examining the direct relationship between DL and SE remain limited, indicating a gap in direct-effect research. Additionally, the mediators identified, such as teachers' professional development and school governance, may vary across different educational contexts, suggesting that the mechanisms linking DL and SE could differ based on school environments, policy contexts, and leadership practices. Moreover, the reviewed studies employed diverse methodologies, leading to varying findings and potential inconsistencies in understanding the effect mechanisms. Finally, the inclusion of only studies with accessible full texts may introduce publication bias, as studies with null or negative results are less likely to be published. These limitations highlight the complexity of the relationship between DL and SE, indicating the need for further research to address these gaps and provide a more comprehensive understanding of the effect mechanisms involved.

Future systematic reviews should consider including studies published in multiple languages to mitigate potential language bias and enhance the generalizability of findings. Incorporating non-English language studies can provide a more comprehensive understanding of the topic and reduce the risk of overlooking relevant research. Additionally, expanding the database search to include a broader range of academic databases beyond Scopus, Web of Science Core Collection, ScienceDirect, and SAGE Journals can help capture a wider array of studies, including those indexed in specialized or regional databases. Employing a combination of databases, such as ERIC, ProQuest, JSTOR and Google Scholar, has been shown to improve coverage and recall in systematic reviews. By adopting these strategies, future reviews can enhance the robustness and comprehensiveness of their findings.

Future studies should delve deeper into the direct relationship between distributed leadership and school effectiveness. While numerous studies have identified mediating variables, research focusing on direct effects remains limited. This underscores the necessity for further empirical investigations into the direct pathways linking DL to SE. Additionally, adopting diverse research methodologies, such as mixed-methods approaches,

could illuminate the mechanisms through which DL directly influences SE. Combining quantitative data's breadth with qualitative insights' depth may offer a more comprehensive understanding of these dynamics. By implementing these strategies, future research can enhance our comprehension of the direct connections between DL and SE, thereby informing more effective educational policies and practices. Based on the identified limitation regarding the variability of mediators in the relationship between DL and SE across different educational contexts, future research should prioritize examining the contextual factors that influence these mediating variables. Understanding how elements such as school culture, governance structures, and teacher professional development programs mediate the DL-SE relationship can provide deeper insights into the mechanisms at play.

ACKNOWLEDGEMENTS

1. I would like to express my sincere gratitude to all those who supported and guided me throughout the process of completing this systematic review. First and foremost, I am deeply thankful to my supervisor Suhaida and co-supervisor Nurzatulshima, for their insightful feedback, continuous encouragement, and invaluable advice at every stage of this work.

2. I am also grateful to the faculty and staff of Educational Studies for providing a stimulating academic environment and access to the necessary resources. Special thanks go to my friends and peers, whose discussions and suggestions greatly enriched my thinking. Finally, I would like to thank my family for their unwavering support, patience, and understanding during this journey. Their encouragement has been a constant source of motivation.

This work would not have been possible without the contributions and inspiration from the academic community whose research on distributed leadership and school effectiveness laid the foundation for this review.

Statement of Declaration of Interest

The author(s) of this article have declared that they have no potential conflicts of interest pertaining to the research, writing, or publication of this piece.

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