Distributed Leadership and Teacher Professional Learning: The Mediating Role of Teacher Agency in Iranian EFL Context

Roya Aghaee Motlagh[1] iD, Majid Nemati[2] iD, Hossein Karami[3] iD

[1]Ph.D. Candidate, English Department, Faculty of Foreign Languages and Literatures, University of Tehran, Tehran, Iran, Email: motlagh@ut.ac.ir

[2]*Corresponding author*, Associate Professor, English Department, Faculty of Foreign Languages and Literatures, University of Tehran, Tehran, Iran, Email: nemati@ut.ac.ir

[3]Associate Professor, English Department, Faculty of Foreign Languages and Literatures, University of Tehran, Tehran, Iran, Email: hkarami@ut.ac.ir

Abstract

A sustained, school-based approach that offers in-service EFL teachers opportunities for collaboration in creating an environment that promotes their capacity-building and instructional growth is necessary for their professional growth. This study aimed to contribute to the growing body of research on the effect of distributed leadership in teacher professional learning. Specifically, this study scrutinized the connection between distributed leadership and professional learning of teachers, focusing on the mediating role of teacher agency. A cross-sectional survey design was applied, collecting data from 458 teachers in Iran. Teacher Professional Learning Scale, Teacher Agency Scale, and Distributed Leadership Scale were completed by them. Structural equation modelling was run to analyze the relationship between variables. The findings revealed a minimal direct relationship between distributed leadership and the professional learning of teachers, with teacher agency acting as a major mediating factor. These results contribute to existing research by suggesting that distributed leadership may not have a substantial direct effect on teacher learning, but rather indirectly improves teacher agency.

Keywords: teacher professional learning, distributed leadership, teacher agency

1. Introduction

The effective implementation of education is often seen as heavily reliant on teachers (Fullan & Hargreaves, 2013; van der Heijden et al., 2018). The idea of teachers as active participants in policy-making and educational reform is long overdue in the majority of educational systems (Harris & Jones, 2019). This poses the question of how the instruction might be improved to facilitate the overall improvement of the educational milieu. A burgeoning body of literature has acknowledged the crucial connection between teacher competence and student learning, with a specific emphasis on the strategic elements that influence teacher professional learning (Li et al., 2016; Vescio et al., 2008). While there has been significant attention given to research on teacher professional learning, there are still gaps in our understanding of approaches that support teachers' professional development (Borko, 2004; Opfer & Pedder, 2011).

Recent research has underscored the significance of teacher leadership due to its potential to improve internal capacity for promoting teacher professional learning and sustainable school enhancement (Bellibaş & Gümüş, 2021; Bellibaş et al., 2020; Hallinger et al., 2017; Heck & Hallinger, 2014; Liu et al., 2016a,b; Qian & Walker, 2013; Szeto & Cheng, 2017; Vanblaere & Devos, 2016). Teacher leadership has emerged as a central topic in the global discourse on educational transformation and change, offering a potential avenue for instructional improvement and educational reform through continuous, site-based professional learning opportunities for instructors (Poekert, 2012). Thriving professional learning opportunities are fostered when principals relinquish some control and empower others to take on leadership roles (McLaughlin & Talbert, 2006). They collaborate with teachers and give them opportunities to engage in joint inquiry and assume various leadership responsibilities related to transforming education (Bolam et al., 2005).

The influence of leadership on the education system, curriculum, and school reform is supported by an expanding body of studies (e.g., Hallinger & Heck, 2010; Hallinger & Lu, 2014; Liu & Hallinger 2018; Margolis & Strom, 2020; Wang, 2016), however, there has not been much focus on figuring out how various individual factors moderate the influence leadership exert on the professional growth of teachers (Liu et al., 2016b). Empirical evidence has confirmed the indirect impact of leadership on professional growth of teacher through various individual factors, including work motivation (Bektaş et al., 2022), self-efficacy (Liu & Hallinger, 2018; Malmir & Mohammadi, 2018), collective teacher efficacy (Joo, 2020; Karacabey et al., 2020), and trust in principal and colleagues and knowledge sharing (Bektaş et al., 2022; Talebizade et al., 2021). However, the mediating role of teacher agency has not been thoroughly investigated.

Cultivating teacher agency at the personal, cultural, and institutional levels is a viable long-term approach for preserving everything beneficial in schooling as well as advancing it (Priestley et al., 2015). The need for illuminating teachers' agentic roles in professional learning and school reform is urged by persistent change in professional and academic growth (Eteläpelto et al., 2013;

Priestly et al., 2012). This study aimed to further this area of inquiry by concentrating on the link between distributed leadership and the professional learning of teachers. However, a one-size-fits-all approach might not be optimal. This study explores how individual differences in teacher agency might moderate the effectiveness of distributed leadership. This knowledge can inform the design of leadership structures that cater to diverse teacher needs and maximize growth potential. By understanding the interplay between these variables, we can move beyond rote learning programs towards fostering a culture of continuous, self-driven improvement. By focusing on empowering teachers and fostering their sense of ownership, this research has the potential to unlock a new era of sustainable, teacher-driven educational change. It was assumed that teacher agency acted as a mediator between the direct and indirect impacts of distributed leadership on teachers' professional growth. This hypothesis is put to test in order to identify the type of impacts that distributed leadership has on teacher learning-whether they are direct, indirect, or both as well as how different aspects of teacher agency work together with distributed leadership to create these effects.

2. Literature Review

2.1. Distributed Leadership

The 1950s was a key decade for the introduction of distributed leadership. Gibb (1954), who first introduced the phrase to investigate the type and degree of effect on the works of formal organizations, is credited with developing its theoretical underpinnings. In the 1990s, researchers asserted that modern leadership theories were needed to handle the continually rising complexity of education since conventional approaches to school leadership could not meet educational requirements (Lambert, 1998). However, until the start of the 20th century, the concept did not garner a significant degree of scholarly study (Harris, 2008). In the following years, a burgeoning group of educational scholars under the direction of Gronn (2002), Elmore (2000), Harris (2008), and Spillane (2005) made significant academic contributions to the conceptualization and support of the concept's theoretical underpinnings.

A distributed standpoint views leadership as a practice instead of a series of predetermined responsibilities that are normally ascribed to the school principal (Harris, 2013). MacBeath et al. (2004) assert that distributed leadership is the same as democratic, participative, and cooperative leadership. A distributed type of leadership is predicated on the idea that there are several leaders and that people regularly share leadership duties amongst themselves. (Harris, 2007; Spillane et al., 2004). According to House and Aditja (1997), distributed leadership is a process where collaborative relationships form the foundation for collective action, which is driven by the shared values of those working together to enact positive change. Distributed leadership is often described as influential activities and decision-making carried out by multiple individuals at various organizational levels rather than by an individual principal at the highest point of a hierarchical structure (Leithwood et al., 2009). Distributed style of leadership model emphasizes the

professional growth of teachers through collaborative research cycles (Park & Datnow, 2009; Spillane et al., 2004; Spillane & Zuberi, 2009).

Distributed leadership inspires teachers to collaborate with colleagues to address educational issues, take part in decision-making, and exercise leadership (Harris & DeFlaminis, 2016). Distributive leadership, according to Leithwood and Reid (2003), ensures that instructors work together to advance the growth of the whole school and its objectives. This shows that from a dispersed leadership perspective, schools are portrayed as places where teachers are required to perform leadership roles. Distributed leadership will increase teachers' feeling of agency given that those who feel they have a lot of control over their classrooms are more likely to take chances and show flexibility in their approach to instruction (Liu et al., 2016).

The distribution of leadership in educational institutions has been widely recognized in previous studies to have direct and indirect impacts on pupil performance, educational practice, and improvement in educational capacity (Bellibaş & Gümüş, 2021; Bellibaş et al., 2020; Bektaş et al., 2020; Lahtero et al., 2017). Teachers are more inclined to be agents of transformation and invest more time and effort into the education of their pupils in educational settings where distributed leadership methods are implemented and encouraged. Additional research by Parise and Spillane (2010) showed that when given the chance to interact and take part in school-based choices, teachers are more likely to participate in professional learning. One of the elements contributing to a decline in teacher absenteeism was also shown to be a higher level of teacher engagement in school decision-making (Rosenholz, 1989).

The ability of an organization to learn and adapt can be improved by a well-supported distribution of leadership (Amels et al., 2020). Distributed leadership stimulate creativity (Scribner et al., 2007) as well as a better commitment to the school's common mission, with more sustainability of commitment and ownership (Morrison, 2002; Muijs & Harris, 2003). Conversely, instructors become more resistant to curriculum changes and show less dedication when they are not included in the curriculum development process (Oloruntegbe, 2011).

2.2. Teacher Professional Learning

According to available data, teacher professional learning is a critical factor that influences teaching effectiveness, educational practices, and overall enhancement of schools. (Borko, 2004; Desimone, 2009; Kwakman, 2003). A rising body of educational academics has linked enhanced teaching quality to the process of successful and sustained professional learning in schools (Thoonen et al., 2011; Walker, 2007). Teacher-professional learning is characterized as a type of workplace learning that is marked by a dynamic, continuing, interactive interaction between instructors (Kwakman, 2003; Timperley, 2011). It emphasizes the need for continual growth of teachers' education and experience.

Teacher-professional learning is known as a school-based learning process which involves instructors actively participating and closely collaborating with one another to improve teaching strategies (Darling-Hammond & Richardson, 2009). Professional learning, in other words, includes changes in professionally pertinent reasoning, knowledge, abilities, and attitudes of mind (Knapp, 2003). It reveals itself in changes in instructors' capacity for practice as well as real changes in their practice (Knapp, 2003).

Traditionally, teacher education has been viewed as a collection of externally supplied training that teachers must systematically complete in order to become proficient educators (Darling-Hammond et al., 2009). This external technique to professional learning overlooked the reality that teachers in schools possess a wealth of professional knowledge (Cosner, 2009). The concept of teacher-professional learning, on the other hand, has garnered increasing attention lately as it stresses a more practice-based and cooperative approach to professional learning (Hallinger et al., 2017; Hallinger & Kulophas, 2020; Liu et al., 2016a; Prenger et al., 2020; Salehizadeh et al., 2020). This presents the chance to advance beyond ongoing professional development into a productive culture of professional learning, where teachers are able to generate new meanings and professional knowledge via interacting with challenges (Timperley, 2011). Teachers in this type of environment are supposed to be thinkers, conceptualizers, builders of knowledge, and reflective practitioners who collaborate to create innovative teaching strategies (Rismark & Sølvberg, 2011).

Based on previous research, the current study assumed professional learning of teachers as a continuous, context-dependent process that involves a variety of activities frequently carried out in formal environments, as well as individual and group learning for teachers (Kwakman, 2003, Fu & Clarke, 2017). Consequently, the concept is examined under four components: reflection, collaboration, experimentation, and reaching out to the knowledge base, in alignment with Liu et al.'s (2016) model of teacher-professional learning. Reflection is an introspective process where educators critically analyze their teaching methods and student learning outcomes. By reflecting on their practice, teachers can identify areas for improvement and develop more effective instructional strategies. Collaboration fosters professional growth through shared experiences and knowledge exchange among educators. Through collaboration, teachers learn from one another's successes and challenges, improving their teaching practices. Experimentation encourages teachers to embrace new ideas and approaches in the classroom. Openness to experimentation allows educators to test innovative practices and refine their teaching for better student learning outcomes. Reaching out to the knowledge base refers to how teachers leverage various resources to enhance their craft knowledge and teaching abilities. This includes incorporating student feedback, utilizing online resources, learning from colleagues' experiences, and observing effective practices in other classrooms (Liu et al., 2016).

2.3. Agency

Teacher agency is a fundamental tenet of a teacher's professionalism (Molla & Nolan, 2020), representing their capacity to enact changes and make choices that have a profound impact on their professional work and the broader educational landscape (Eteläpelto et al., 2013; Wang et al., 2017). It has been broadly embraced in educational literature that teacher agency occupies a fundamental role in enhancing teacher professional learning (Fu & Clarke, 2017; Imants & Van Der Wal, 2020; Liu et al., 2016a). Teachers who possess a profound sense of agency are more inclined to join collaborative activities with their colleagues and demonstrate a greater willingness to invest in their own professional development, thereby contributing to the improvement of their educational context (Frost, 2006; Priestley et al., 2015).

Teacher agency is a multifaceted interplay between the personal attributes, external support systems, the prevailing school cultures, and the structural framework of educational institutions that influence professional journey (Bryk & Barbara, 2002; Miller et al., 2020; Simpson et al., 2018). Teachers' capacity to exercise their professional agency may be constrained or empowered by the power dynamics within schools, both formal and informal, (Eteläpelto et al., 2013; Vahasantanen, 2015). Professional agency encompasses self-regulation, purposeful actions, and introspection aimed at personal and collective growth (Bandura, 2006). Teacher agency also includes the quality of engagement with the educational environment and the manner in which teachers actively contribute to reshaping and revitalizing their respective schools (Biesta et al., 2015).

This study adopts the approach of Liu et al. (2016) and defines teacher agency based on four factors: teaching effectiveness, learning effectiveness, constructive engagement, and optimism. Teacher agency encompasses teachers' perceptions of their abilities and determination to continue learning, which in turn contributes to students' education (Emirbayer & Mische, 1998). A profound belief in learning effectiveness implies that teachers' willingness to engage in professional development. Teaching effectiveness involves teachers' confidence in applying successful teaching approaches, interacting with learners from diverse academic backgrounds, and keeping a good rapport with parents (Liu et al., 2016). Optimism refers to the cultivation of positive relationships with coworkers, while constructive engagement encompasses goal-setting, hard work, experimentation with new teaching methods, active participation in learning-related activities, and the ability to influence others to learn (Liu et al., 2016).

Numerous studies in the literature have demonstrated the association between distributed leadership and professional growth of teachers. For instance, Bellibaş et al. (2020) examined the impact of principal leadership on teaching practices and found that instructional leadership directly affected instructional quality, while distributed leadership had an indirect effect mediated by teacher collaboration and job satisfaction. Similarly, Bektaş et al. (2020) explored the influence of distributed leadership on teacher professional learning and discovered that it had a positive indirect influence mediated by teacher trust in the principal and job motivation. Furthermore, Torres (2019)

discovered that, even after adjusting for other individual and educational characteristics, teachers' opinions of distributed leadership were substantially and positively linked with work satisfaction. Furthermore, there was a mutually reinforcing relationship between professional collaboration and distributed leadership. While research has established a positive link between distributed leadership and teacher professional learning in Western contexts, a gap exists in understanding this relationship within the Iranian educational system. By exploring this hitherto under-researched area, this study illuminates best practices for implementing distributed leadership models that foster teacher professional learning within the Iranian EFL context. Ultimately, this research aspires to inform the development of strategies that harness the power of distributed leadership to empower Iranian educators and cultivate their professional growth trajectory.

3. Research Questions

1. What is the relationship between distributed leadership, teacher professional learning, and teacher agency within the Iranian EFL context?
2. How do dimensions of teacher agency mediate the effect of distributed leadership on teacher professional learning within the Iranian EFL context?

4. Methodology

4.1. Design of the Study

This study employed a cross-sectional survey design with quantitative methods to investigate the relationships between distributed leadership, teacher professional learning, and teacher agency within the Iranian EFL context.

4.2. Participants

The participants in the study were 458 Iranian EFL teachers recruited through convenience sampling. Convenience sampling is a non-probability sampling method in which participants are chosen depending on variables such as willingness, geographic proximity, accessibility, and so on (Etikan et al., 2016). They came from different cities in Iran. They encompassed 301 female and 157 male EFL teachers. Their age ranged from 20 to 51 years old with one to 28 years of teaching experience. This diverse representation aimed to capture a holistic understanding of the influence of distributed leadership on teacher professional learning, with the potential mediating roles of teacher agency.

4.3. Instruments

The study data were gathered through a questionnaire. The participants were asked to complete a) Teacher Professional Learning Scale, b) Distributed Leadership Scale, and c) Teacher Agency Scale. A teacher professional learning scale was used to gather data for the dependent variable. Liu et al. (2016) created this scale. It is composed of 25 questions that are taken from previously created scales that tap into four elements (Collaboration, Reflection, Experimentation, and Reach out to the Knowledge Base) (Evers et al., 2016, Kwakman, 2003 as cited in Liu et al. 2016). Likert scales are used to score items, with 1 denoting "strongly disagree" and 5 denoting "strongly agree." Teacher Agency Scale was used as the mediating variable that linked distributed leadership to teacher professional learning. The Teacher Agency Scale was created by Liu et al. (2016b) using the Peng et al. (2006) and Shen (2015) agency scales as a foundation. The 24 items on the scale are divided into four categories: Constructive Engagement (CE), Optimism (ON), Teaching Effectiveness (TE), and Learning Effectiveness (LE). Using a 5-point Likert scale, instructors are asked to score how much they agreed with each statement on a particular behavior. Distributed leadership scale was used to collect data for the independent variable. Özer and Beycioğlu (2013) designed and verified the distributed leadership scale. The purpose of the survey is to evaluate the principal's and other school employees' leadership levels. All of the scale's elements measure the same dimension as the survey only includes one dimension. The scale consists of ten items, each with five possible answers ranging from 1=Always to 5=Never. To assess the construct validity of the questionnaires, confirmatory factor analysis (CFA) was employed using structural equation modeling (SEM). The findings from the CFA, presented in Figures 1, 2, and 3 alongside their corresponding interpretations, provide insights into the degree to which the questionnaires effectively measure the intended latent constructs in the context of this study.

4.4. Procedure

The data collection procedure was conducted over a period of 5 weeks, specifically during the spring semester of 2023. In order to gather the necessary information, online versions of the Teacher Professional Learning Scale, Distributed Leadership Scale, and Teacher Agency Scale were meticulously formulated. Additionally, inquiries regarding demographic details and professional attributes of educators, including gender, teaching experience, and educational level, were included in the data collection instruments. The objectives and aims of the research endeavor were effectively communicated to EFL teachers through targeted notifications disseminated within What's App groups. Teachers who expressed their willingness to participate in the study were promptly provided with a hyperlink, enabling them to conveniently access and complete the aforementioned questionnaires through online platforms.

4.5. Data Analysis

Structural equation modeling (SEM) was applied for data analysis. The data was analyzed through the Mplus software (Muthén & Muthén, 1998–2010). Before starting the statistical modeling, we had to make sure that each individual scale was performing as expected. Hence, separate confirmatory factor analyses (CFA) were run to examine the factorial structure of the scales. The second step was to run SEM analyses to address the research questions. The Yuan–Bentler estimator was used for parameter estimation since it is robust against violations of the normality assumption (Wang & Wang, 2012). It is denoted as MLR in the Mplus.

The examination of model fit was done through examining both the fit indices reported in the Mplus and the inspection of the plausibility of the estimated parameters. As for the latter, all parameters were scrutinized individually so that no out-of-bound estimates were given by the models (Kline, 2015). For fit analysis, Mplus reports the following four indices: The Root Mean Square Error of Approximation (RMSEA), the Comparative Fit Index (CFI), the Standardized Root Mean Square Residual (SRMR), and the Tucker-Lewis Index (TLI).

Although there are no hard and fast rules for interpreting these indices, it is usually suggested that RMSEA values should be less than 0.6 to show adequate fit (Brown, 2006). Usually, a 90% interval is also normally reported for the RMSEA. The upper bound of this interval should not be higher than 0.8. In addition, the CFI and TLI indices must be higher than 0.90 and the SRMR should not exceed 0.80.

5. Results

As explained earlier, the first step was to examine the factorial structure of the individual scales. In the next sections, the results for each of these scales are reported.

1. Distributed Leadership

The distributed leadership (DL) scale had 10 items. The inspection of the parameters revealed no out-of-bound estimates. The following overall fit indices were obtained for the DL scale: RMSEA: 0.024, CFI=0.979, TLI=0.973, and SRMR=0.037. Overall, these indices show very good model data fit. Figure 1 shows the estimated parameters for the DL scale.

Figure 1

Estimated Parameters for the DL Scale
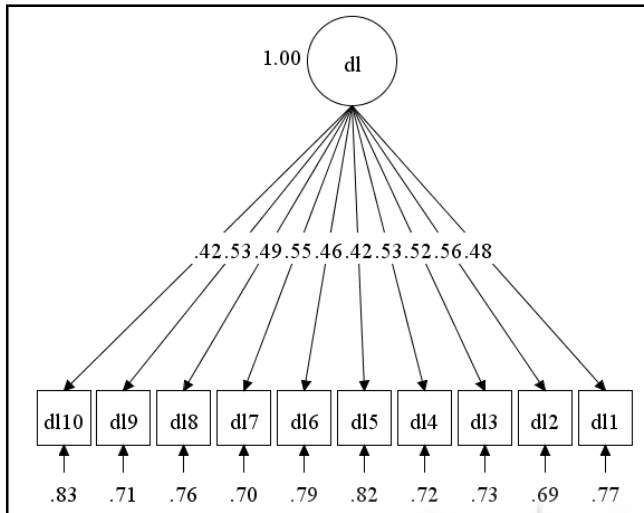
2. Teacher Professional Learning

The teacher professional learning (TPL) scale had three factors: collaboration (6 items), reflection (10 items), experimentation (5 items), and reach out to the knowledge base (6 items). The initial analysis revealed that four items did have adequate loading on the relevant factors. Three items belonged to the *reflection* factor and one item belonged to the *experimentation* factor. The final model revealed adequate fit: RMSEA: 0.033, CFI=0.945, TLI=0.939, and SRMR=0.041. The estimated parameters are displayed in Figure 2.

Figure 2

*Estimated Parameters for the TPL Scale*
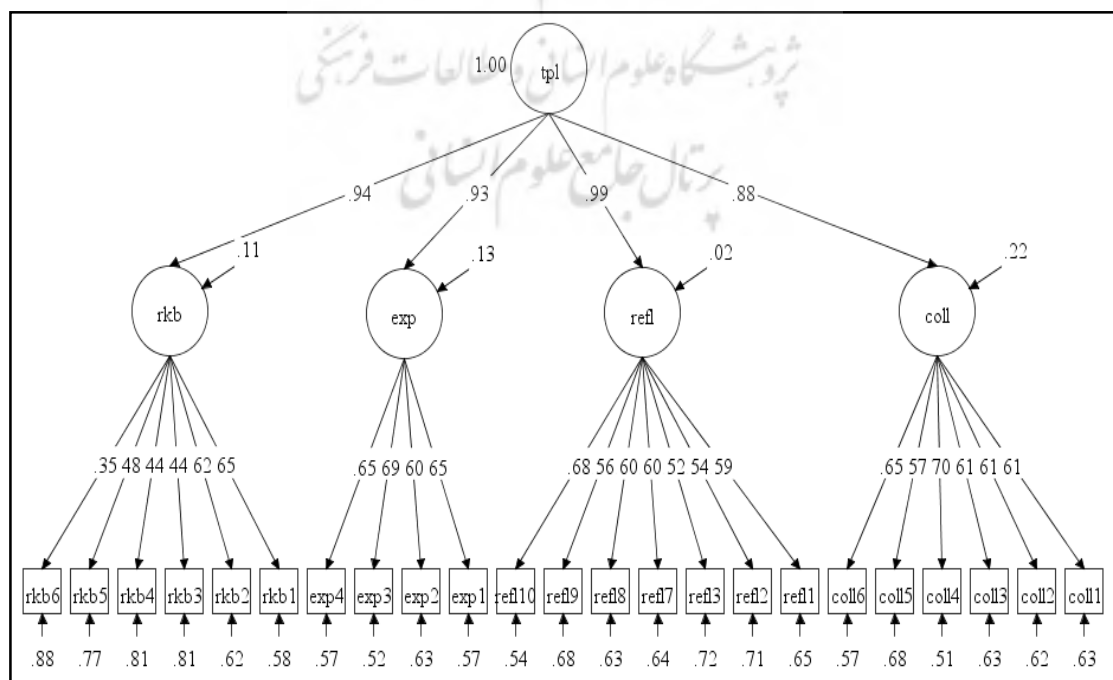
3. Teacher Agency

The teacher agency (TA) scale had four factors: learning effectiveness (6 items), teaching effectiveness (7 items), optimism (5 items), and constructive engagement (6 items). Initially, two items did not have adequate loading on the relevant factors and were omitted from the analysis. The final model showed adequate fit: RMSEA: 0.023, CFI=0.972, TLI=0.968, and SRMR=0.041. The estimated parameters are displayed in Figure 3.

Figure 3

Estimated Parameters for the TA Scale
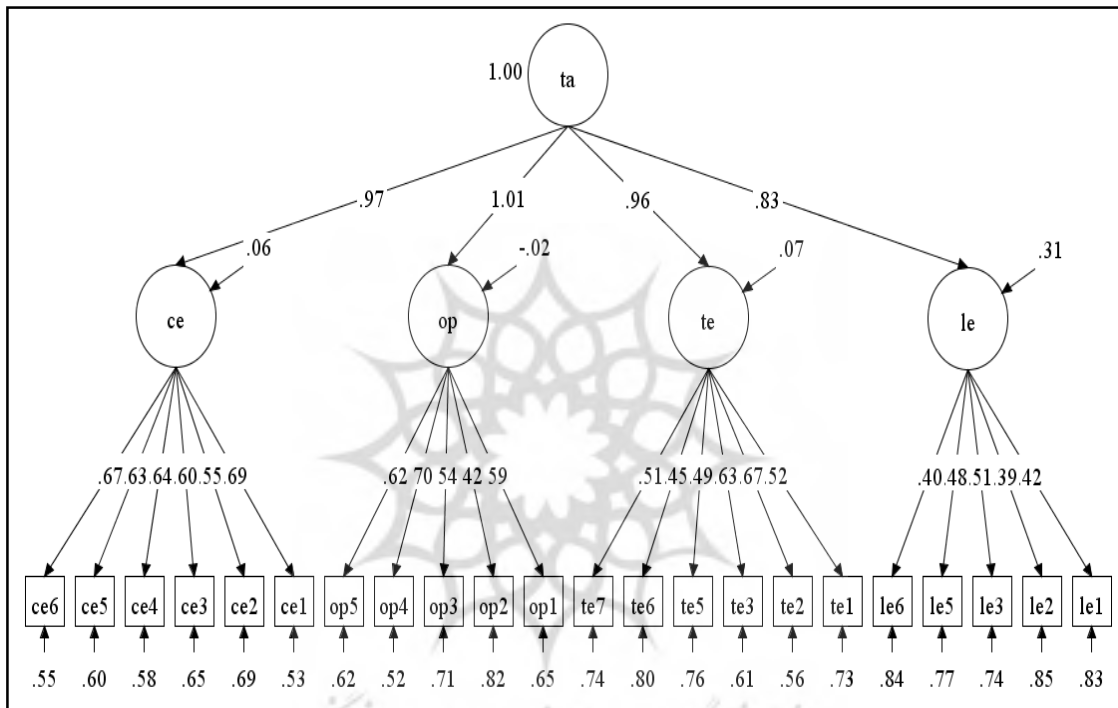
After ensuring that the individual scales had the expected factorial structure, SEM analyses were conducted to answer the research question investigating the relationship between distributed leadership, teacher professional learning, and teacher agency. The model along with the estimated parameters are displayed in Figure 4. The overall fit indices indicated adequate model-data fit: RMSEA: 0.029, CFI=0.902, TLI=0.901, and SRMR=0.046. An inspection of the estimated correlations between the three variables (i.e., DL, TPL, and TA) shows that they are all highly correlated. The estimates correlations are as follows: DL and TPL: 0.85, DL and TA: 0.83, and TPL and TA: 0.95.

Figure 4

Estimated Relationships between DL, TA, and TPL
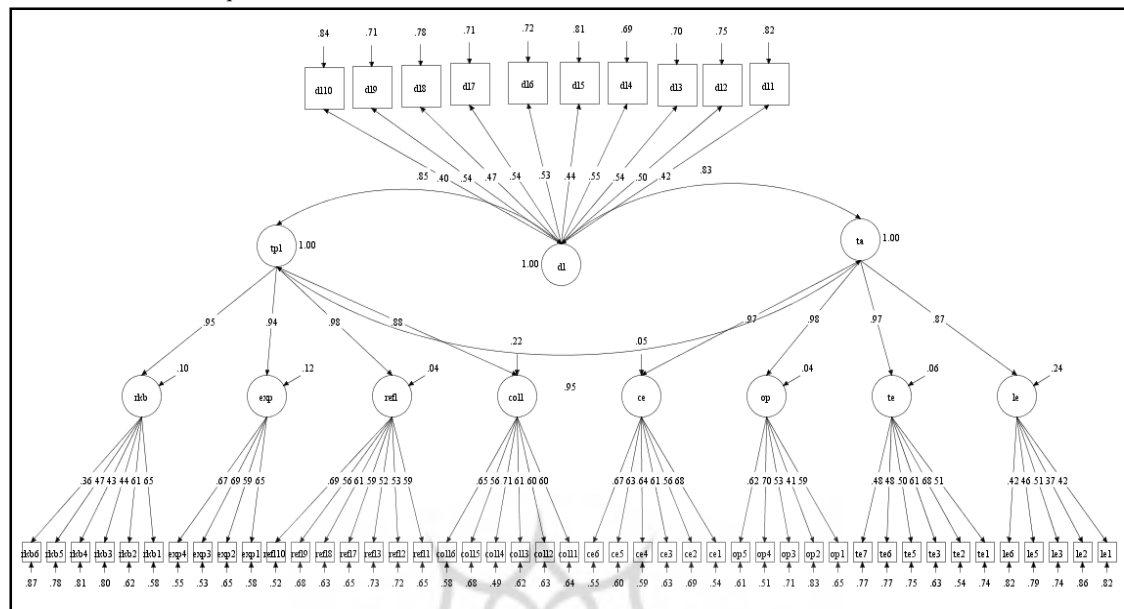
To answer the second research question investigating how dimensions of teacher agency mediate the effect of distributed leadership on teacher professional learning, multiple SEM analyses were run. The first analysis addressed the mediating effect of the TA on the effect of DL on TPL. That is, the question was: does TA mediate the effect of DL on TPL? In the next step, the mediating effect of each subcomponent or factor of TA on the effect of DL on TPL was addressed. Hence, five SEM models were run. The overall fit indices for the five mediation models are displayed in Table 1. It is evident from the table that all fit indices indicate adequate fit. Hence, we can proceed to interpret the relevant parameters.

Table 1

Fit Indices for the Mediation Models

Mediator	RMSEA	CFI	TLI	SRMR
Teacher agency	0.029	0.902	0.901	0.046
Learning effectiveness	0.032	0.906	0.900	0.047
Teaching effectiveness	0.030	0.919	0.914	0.046
Optimism	0.031	0.917	0.911	0.046
Constructive engagement	0.028	0.930	0.925	0.045

The parameters of the first model are displayed in Figure 5. Although there was a strong relationship between DL and TPL in the previous model (i.e., r=0.85), it is observed that the direct effect of the DL on TPL in Figure 5 is only 0.22. On the other hand, the direct effect of TA on TPL is 0.76. In other words, the effect of DL on TPL is mostly indirect and is mediated by TA to a large extent. A similar pattern is observed in all other four models. Specifically, the TA components

strongly mediate the effect of DL on TPL. In other words, the effect of the DL on TPL is mostly indirect and is mediated by either TA or its subcomponents.

The parameters of the first model are displayed in Figure 5. Although there was a strong relationship between DL and TPL in the previous model (i.e., r=0.85), it is observed that the direct effect of the DL on TPL in Figure 5 is only 0.22. On the other hand, the direct effect of TA on TPL is 0.76. In other words, the effect of DL on TPL is mostly indirect and is mediated by TA to a large extent. A similar pattern is observed in all other four models. Specifically, the TA components strongly mediate the effect of DL on TPL. In other words, the effect of the DL on TPL is mostly indirect and is mediated by either TA or its subcomponents.

Figure 5

The Mediating Effect of TA
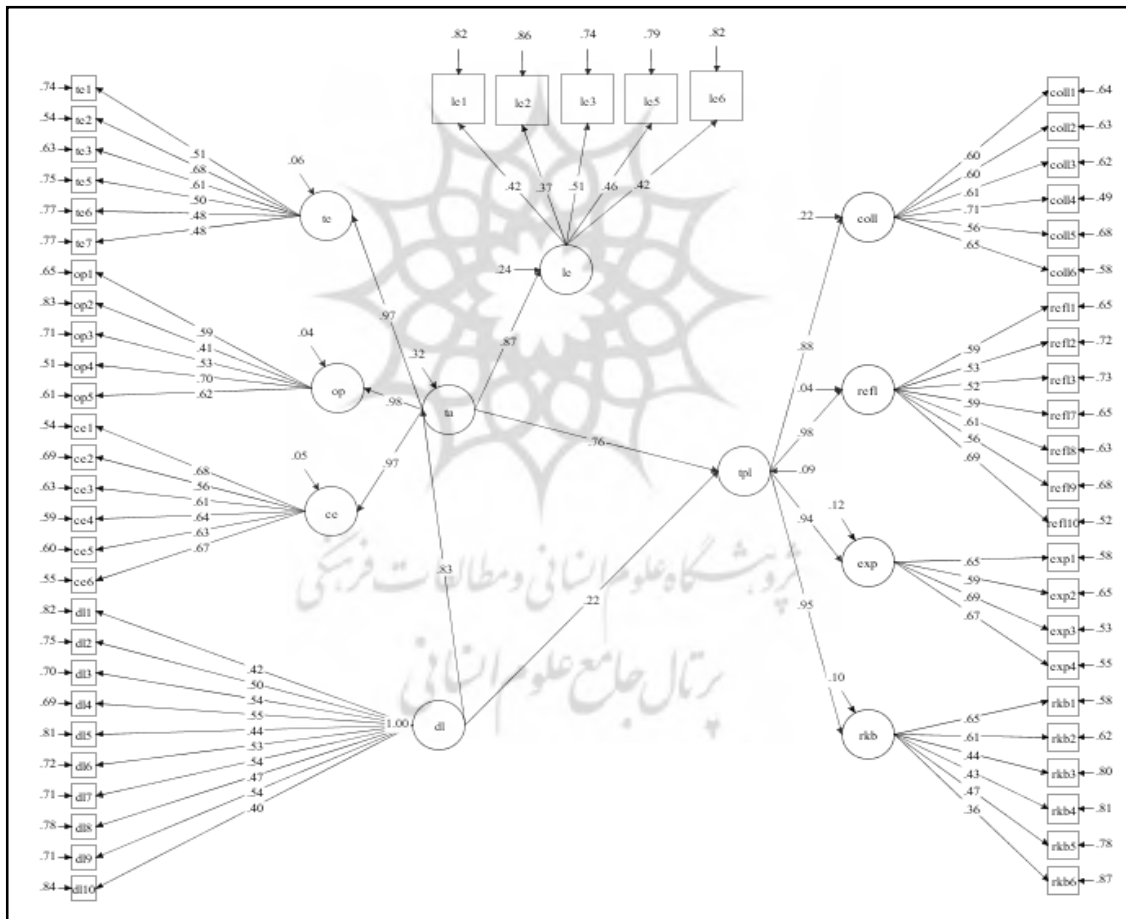
It is observed that the direct effect of the DL on TPL in Figure 6 is only 0.46. On the other hand, the direct effect of IE on TPL is 0.49. In other words, the effect of DL on TPL is mostly indirect and is mediated by IE to a large extent.

Figure 6
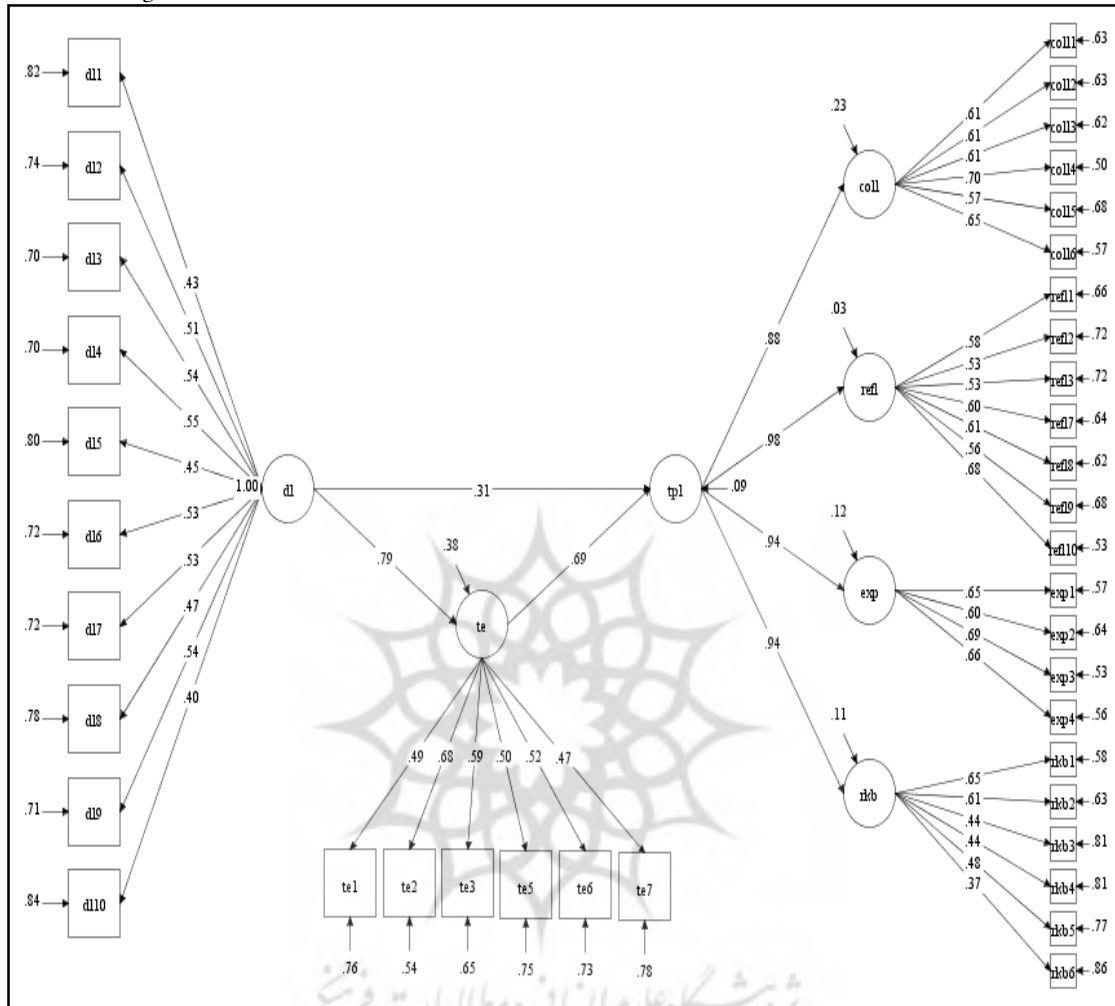
The Mediating Effect of LE
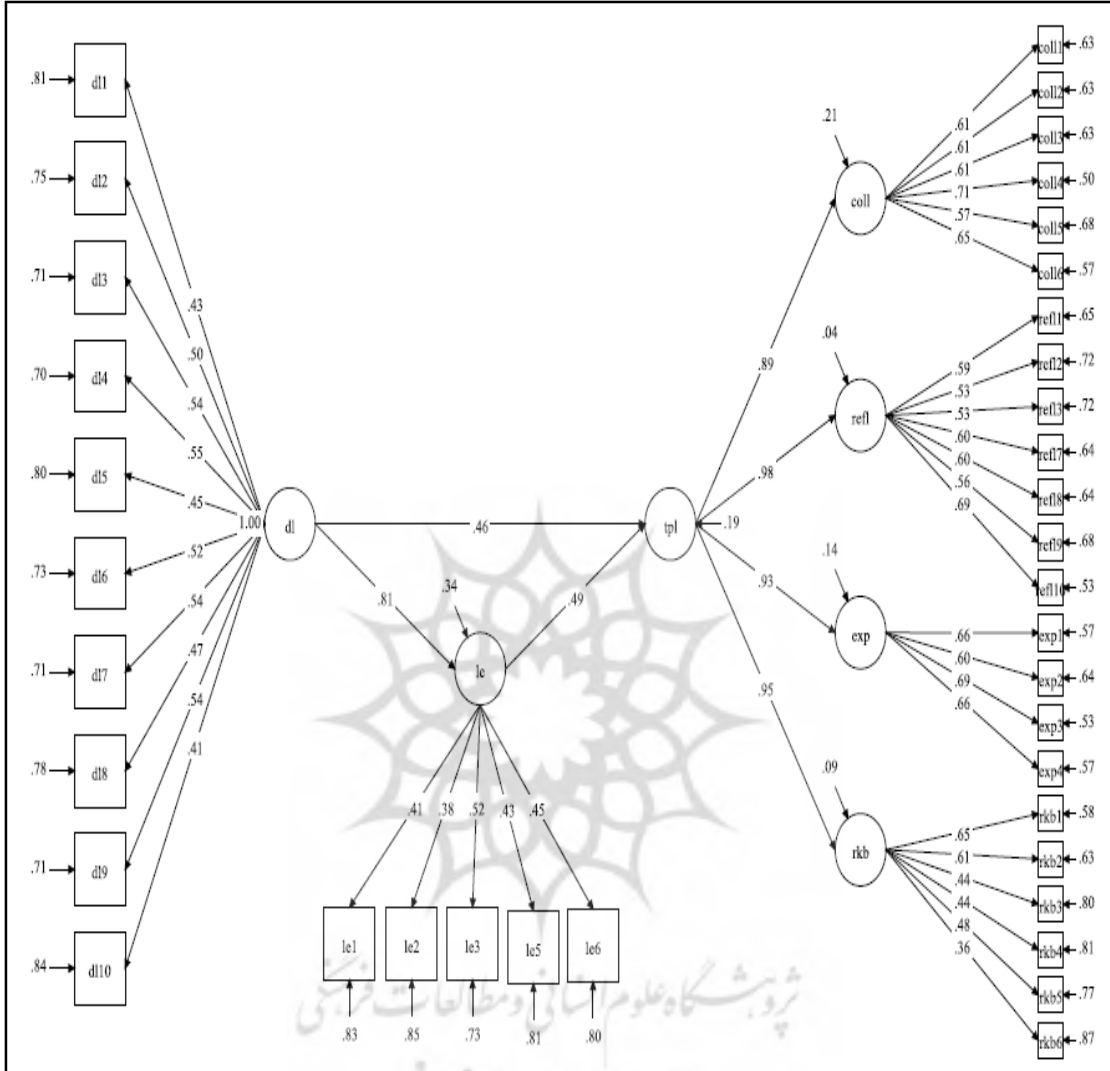
It is observed that the direct effect of the DL on TPL in Figure 7 is only 0.31. On the other hand, the direct effect of TE on TPL is 0.69. In other words, the effect of DL on TPL is mostly indirect and is mediated by TE to a large extent.
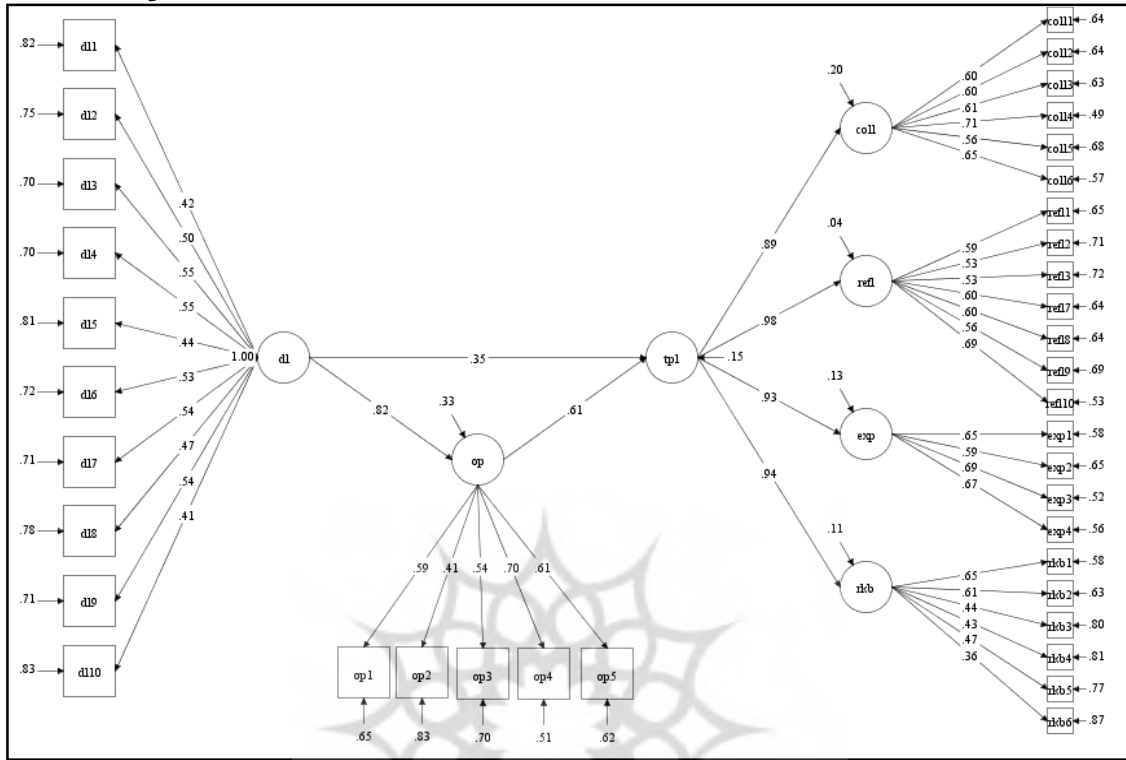
Figure 7

The Mediating Effect of TE

It is observed that the direct effect of the DL on TPL in Figure 8 is only 0.35. On the other hand, the direct effect of OP on TPL is 0.61. In other words, the effect of DL on TPL is mostly indirect and is mediated by OP to a large extent.

Figure 8

The Mediating Effect of OP

It is observed that the direct effect of the DL on TPL in Figure 9 is only 0.33. On the other hand, the direct effect of CE on TPL is 0.67. In other words, the effect of DL on TPL is mostly indirect and is mediated by CE to a large extent.

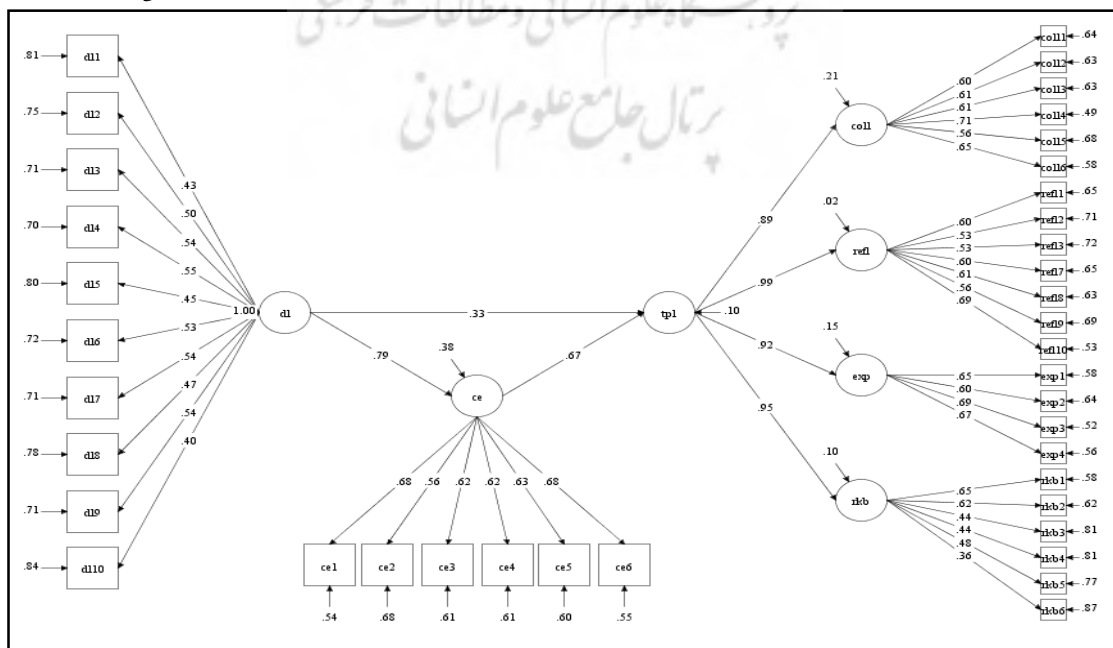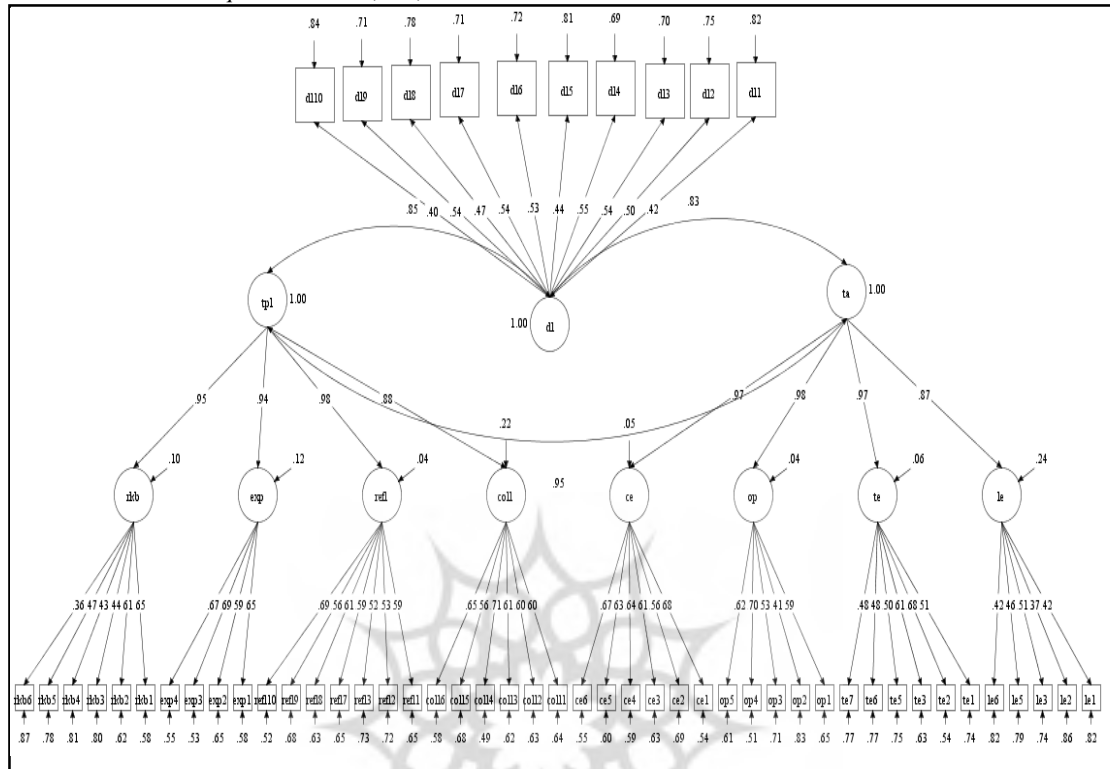**Figure 9**

The Mediating Effect of CE

Figure 10

Estimated Relationships between DL, TA, and TPL

Our findings revealed a seemingly paradoxical relationship between distributed leadership and teacher professional learning. While the overall correlation suggests a substantial positive association (previous model, r=0.85), the direct effect of distributed leadership on professional learning is relatively weak (0.22). Conversely, teacher agency exhibits a considerably stronger direct effect (0.76). This pattern suggests a mediated influence of distributed leadership, with teacher agency acting as the primary mediator. This phenomenon is consistent across all five models investigated, indicating the robust mediating role of teacher agency components (Learning Effectiveness: .81, Teaching Effectiveness: .79, Optimism: ,82, Constructive Engagement: .79- Figures 6, 7, 8). In essence, distributed leadership's impact on teacher professional learning is predominantly indirect, channeled through the mediating effects of teacher agency or its subcomponents.

6. Discussion

This study delved into the intricate relationship between distributed leadership, teacher agency, and professional learning within the Iranian educational context. The findings highlighted the crucial role of teacher agency as a mediating factor in this dynamic. The results showed that although distributed leadership and teacher professional learning were strongly correlated,

distributed leadership had minimal direct impact on teacher professional growth. On the other hand, there was a notable and direct impact of teacher agency on teacher professional learning. In essence, the influence of distributed leadership on professional learning was primarily indirect, mediated by teacher agency or its subcomponents. The results underscore the crucial function of teacher agency in determining teachers' involvement in school-based professional learning events. The Iranian educational system, often characterized by a hierarchical structure, might limit opportunities for teacher agency. This finding becomes particularly significant in such a context. By fostering a sense of agency through distributed leadership practices, schools can empower teachers to take ownership of their professional development. This, in turn, can lead to a more active and engaged approach to professional learning opportunities offered within the school setting.

This aligns with previous research suggesting that teacher agency acts as a mediator between leadership and teacher professional learning (Lai et al. 2016, Liu & Hallinger, 2017; Liu et al. 2016a, Hallinger et al. 2017a, b; Polatcan, 2021). Polatcan (2021) found a very small direct association between distributed leadership and teacher professional learning with teacher agency fulfilling a large mediating function in the Turkish educational context. Liu et al. a (2016) posit that teacher agency exerts a significant influence on teacher professional learning within the Chinese educational context.

In contrast, Hallinger et al. (2017b) assert that whereas teacher agency has a minor influence in China, it has a significant impact in Thailand. These results collectively demonstrate the vital function that teacher agency performs in fostering a culture of growth inside schools. To put it succinctly, educators who possess an elevated sense of agency tend to collaborate more effectively and enhance their workplace learning. Teachers' own professional agency is crucial to the implementation of mutually beneficial learning because it enables them to actively participate in learning from their colleagues (Lai et al., 2016).

This indirect relationship between distributed leadership and professional learning can be associated with the fact that distributed leadership empowers teachers to participate in decision-making and assume leadership roles within the educational environment. While its direct influence on teacher learning is minimal, distributed leadership has a greater indirect impact on teacher learning through its interaction with teacher agency. It cultivates a sense of agency – a belief in their ability to influence their practice and student learning. This empowered mindset likely translates into a stronger drive to seek out and participate in professional learning activities. In other words, distributed leadership fosters a feeling of agency in teachers, and whenever teachers consider themselves as agents rather than passive recipients, they are more inclined to engage in collaborative, reflective, and experimental activities.

The mediation of agency in the relationship between distributed leadership and teacher professional learning can be attributed to several factors. Firstly, agency encompasses an individual's perception of control and autonomy in their actions and decision-making processes. When teachers perceive themselves as having agency, they are more likely to proactively participate

in professional learning opportunities and assume ownership of their own professional growth. Moreover, the agency serves as a catalyst for teacher professional learning by fostering a sense of self-efficacy and motivation. Empowered teachers, who possess a belief in their capacity to effect change, are more inclined to seek out professional development opportunities, engage in reflective practices, and experiment with innovative instructional strategies. This proactive approach to professional learning enhances their knowledge and skills, ultimately leading to improved professional practice. Teachers endowed with agency actively contribute to decisions that advance the progress of the school, leveraging their expertise and knowledge base. The reason for this is due to the fact that teacher agency encourages collaboration among educators to identify and implement best practices, while also encouraging teachers to assume greater responsibility for enhancing their own practice (Frost, 2006; Lai et al., 2016; Priestley et al., 2015).

Fostering teacher agency becomes crucial within the context of the Iranian educational system, characterized by hierarchical structures and potentially limited access to professional learning avenues. Distributed leadership, by empowering teachers and fostering a sense of agency, can bridge this gap. Iranian EFL teachers with a heightened sense of agency are more likely to actively participate in school-based professional learning initiatives. This active engagement is particularly beneficial in resource-constrained settings, where peer learning and collaboration become crucial tools for professional development.

7. Conclusion and Implications

The findings underscore the pivotal role of teacher agency in moderating the connection between distributed leadership and the professional learning of teachers in the Iranian EFL context. The findings suggest that although distributed leadership directly influences teacher professional learning, its impact is predominantly mediated by teacher agency. More specifically, the various components of teacher agency significantly moderate the influence of distributed leadership on teacher professional learning. These findings have significant implications for policymakers and educational leaders. Primarily, they underscore the importance of cultivating teacher agency within schools and educational systems. By empowering teachers and providing them with opportunities to exercise autonomy in their professional learning, leaders can enhance the effectiveness of distributed leadership practices and promote ongoing teacher learning. Moreover, the results suggest that the mere implementation of distributed leadership structures may not be adequate to drive substantial improvements in teacher professional learning. Instead, leaders should prioritize the cultivation of a culture of agency, wherein teachers have the confidence to take charge of their own professional growth and actively participate in decision-making processes. Additionally, these findings emphasize the necessity for professional development programs and policies that prioritize the development of teacher agency. By offering teachers the necessary support, resources, and opportunities to cultivate their sense of agency, educational

systems can enhance teacher professional learning and ultimately improve student outcomes. In summary, the study emphasizes how important teacher agency is in mediating the link between distributed leadership and the professional learning of teachers. These findings call for a paradigm shift in educational leadership practices and policies towards empowering teachers and fostering a culture of agency, ultimately leading to enhanced professional learning and improved educational outcomes.

It is important to acknowledge the limitations of this study, such as the potential for self-reported data to introduce bias. Future research could benefit from employing multi-method approaches, incorporating observations of teacher behavior and student outcomes alongside self-reported data. Furthermore, the generalizability of the findings might be limited by the specific context of the study. Replication in diverse educational settings is crucial to ensure the robustness of the conclusions. Future research could explore the specific cultural factors that influence the interaction between distributed leadership, teacher agency, and professional learning. Understanding these factors could inform the contextualization of leadership practices to maximize their effectiveness across diverse educational settings.

References

Amels, J., Krüger, M. L., Suhre, C. J., & Van Veen, K. (2020). The relationship between primary school leaders' utilization of distributed leadership and teachers' capacity to change. *Educational Management Administration & Leadership*, *49*(5), 732-749. https://doi.org/10.1177/1741143220915921

Bandura, A. (2006). Toward a psychology of human agency. *Perspectives on Psychological Science*, *1*(2), 164-180. https://doi.org/10.1111/j.1745-6916.2006.00011.x

Bierly, C., Doyle, B., & Smith, A. (2016). Transforming schools: How distributed leadership can create more high performing schools. Bain Report, Bain & Company, Inc. Retrieved from http://www.bain.com/Images/BAIN_REPORT_Transforming_schools.pdf

Biesta, G., Priestley, M., & Robinson, S. (2015). The role of beliefs in teacher agency. Teachers and teaching. *Theory and practice*, *21*(6), 624–640. http://dx.doi.org/10.1080/13540602.2015.1044325

Bellibaş, M. Ş., & Gümüş, S. (2021). The effect of learning-centered leadership and teacher trust on teacher professional learning: Evidence from a centralized education system. *Professional Development in Education*, *49*(5), 925-937. https://doi.org/10.1080/19415257.2021.1879234

Bellibaş, M. Ş., Gümüş, S., & Kılınç, A. Ç. (2020). Principals supporting teacher leadership: The effects of learning-centred leadership on teacher leadership practices with the mediating role of teacher agency. *European Journal of Education*, *55*(2), 200-216. https://doi.org/10.1111/ejed.12387

Bektaş, F., Kılınç, A. Ç., & Gümüş, S. (2020). The effects of distributed leadership on teacher professional learning: Mediating roles of teacher trust in principal and teacher motivation. *Educational Studies*, *48*(5), 602-624. https://doi.org/10.1080/03055698.2020.1793301

Borko, H. (2004). Professional development and teacher learning: Mapping the terrain. *Educational Researcher*, *33*(8), 3-15. https://doi.org/10.3102/0013189x033008003

Bolam, R., McMahon, A., Stoll, L., Thomas, S., Wallace, M., Hawkey, K., & Greenwood, A. (2005). *Creating and sustaining effective professional learning communities*. University of Bristol.

Brown, T. (2006). *Confirmatory factor analysis for applied research*. Guilford.

Bryk, A. S., & Barbara, S. (2002). *Trust in schools: A core resource for improvement*. Russellm Sage Foundation.

Burns, M. K., Naughton, M. R., Preast, J. L., Wang, Z., Gordon, R. L., Robb, V., et al., (2018). Factors of professional learning community implementation and effect on student achievement. *Journal of Educational and Psychological Consultation, 28*(4), 394–412. https://doi.org/10.1080/10474412.2017.1385396

Cosner, S. (2009). Building organizational capacity through trust. *Educational Administration Quarterly*, *45*(2), 248-291. https://doi.org/10.1177/0013161x08330502

Darling-Hammond, L., & Richardson, N. (2009). Teacher learning: What matters? *Educational Leadership, 66*, 46-53. http://www.ascd.org/publications/educational-leadership/feb09/vol66/num05/Teacher-Learning@-What-Matters¢.aspx.

Desimone, L. M. (2009). Improving impact studies of teachers' professional development: Toward better conceptualizations and measures. *Educational Researcher*, *38*(3), 181-199. https://doi.org/10.3102/0013189x08331140

Elmore, R. F. (2000). *Building a new structure for school leadership*. The Albert Shanker Institute.

Emirbayer, M., & Mische, A. (1998). What is agency?. *American Journal of Sociology, 103*, 962–1023. https://doi.org/10.1086/231294

Eteläpelto, A., Vähäsantanen, K., Hökkä, P., & Paloniemi, S. (2013). What is agency? Conceptualizing professional agency at work. *Educational Research Review, 10*, 45-65. https://doi.org/10.1016/j.edurev.2013.05.001

Fu, G., & Clarke, A. (2017). Teacher agency in the Canadian context: Linking the how and the what. *Journal of Education for Teaching, 43*(5), 581-593. https://doi.org/10.1080/02607476.2017.1355046

Fullan, M., & Hargreaves, A. (2013). Teacher development and educational change. In M. Fullan & A. Hargreaves (Eds.), *Teacher development and educational change* (pp. 1–4). Routledge.

Hargreaves, A. & Fullan, M. (2013). *Professional capital: Transforming teaching in every school. Teachers College Press.*

Gibb, C. A. (1954). Leadership. In D. Cartwrights (Ed.), *Studies in social power* (pp. 118-149). Institute for Social Research.

Gronn, P. (2002). Distributed leadership as a unit of analysis. *Leadership Quarterly, 13*(4), 423–451. http://dx.doi.org/10.1016/S1048-9843(02)00120-0

Hallinger, P., & Heck, R. H. (2010). Collaborative leadership and school improvement: understanding the impact on school capacity and student learning. *School Leadership & Management, 30*(2), 95–110. http://dx.doi.org/10.1080/13632431003663214

Hallinger, P., Piyaman, P., & Viseshsiri, P. (2017). Assessing the effects of learning-centered leadership on teacher professional learning in Thailand. *Teaching and Teacher Education, 67*, 464-476. https://doi.org/10.1016/j.tate.2017.07.008

Hallinger, P., Liu, S., & Piyaman, P. (2017). Does principal leadership make a difference in teacher professional learning? A comparative study China and Thailand. *Compare: A Journal of Comparative and International Education, 49*(3), 341-357. https://doi.org/10.1080/03057925.2017.1407237

Hallinger, P., & Kulophas, D. (2019). The evolving knowledge base on leadership and teacher professional learning: A bibliometric analysis of the literature, 1960-2018. *Professional Development in Education, 46*(4), 521-540. https://doi.org/10.1080/19415257.2019.1623287

Harris, A. (2005). Teacher leadership: More than just a feel-good factor?. *Leadership and Policy in Schools, 4*, 201–219. https://doi.org/10.1080/1570076050 0244777

Harris, A. (2008). Distributed leadership: According to the evidence. *Journal of Educational Administration, 46*(2), 172-188. https://doi.org/10.1108/09578230810863253

Harris, A. (2013). Distributed leadership. *Educational Management Administration & Leadership, 41*(5), 545-554. https://doi.org/10.1177/1741143213497635

Harris, A., & DeFlaminis, J. (2016). Distributed leadership in practice. *Management in Education, 30*(4), 141-146. https://doi.org/10.1177/0892020616656734

Heck, R., & Hallinger, P. (2014). Modeling the longitudinal effects of school leadership on teaching and learning. *Journal of Educational Administration, 52*(5), 653-681. https://doi.org/10.1108/jea-08-2013-0097

Imants, J., & Van der Wal, M. M. (2019). A model of teacher agency in professional development and school reform. *Journal of Curriculum Studies, 52*(1), 1-14. https://doi.org/10.1080/00220272.2019.1604809

Joo, Y. H. (2020). The effects of distributed leadership on teacher professionalism: The case of Korean middle schools, *International Journal of Educational Research, 99*, 101500. https://doi.org/10.1016/j.ijer.2019.101500

Karacabey, M. F., Bellibaş, M. Ş., & Adams, D. (2020). Principal leadership and teacher professional learning in Turkish schools: Examining the mediating effects of collective teacher efficacy and teacher trust. *Educational Studies*, *48*(2), 253-272. https://doi.org/10.1080/03055698.2020.1749835

Kline, R. (2015). *Principles and practice of structural equation modeling*. Guildford.

Knapp, M. S. (2003). Professional development as a policy pathway. *Review of Research in Education*, *27*(1), 109-157. https://doi.org/10.3102/0091732x027001109

Kwakman, K. (2003). Factors affecting teachers' participation in professional learning activities. *Teaching and Teacher Education*, *19*(2), 149-170. https://doi.org/10.1016/s0742-051x(02)00101-4

Lahtero, T. J., Lång, N., & Alava, J. (2017). Distributed leadership in practice in Finnish schools. *School Leadership & Management*, *37*(3). 217-233.http://dx.doi.org/10.1080/13632434.2017.1293638

Lai, C., Li, Z., & Gong, Y. (2015). Teacher agency and professional learning in cross-cultural teaching contexts: Accounts of Chinese teachers from international schools in Hong Kong. *Teaching and Teacher Education*, *54*, 12–21. https://doi.org/10.1016/j.tate.2015.11.007

Lambert, L. (1998). *Building leadership capacity in schools*. Association for Supervision and Curriculum Development.

Lambert, L. (2003). *Leadership capacity for lasting school improvement*. Association for Supervision and Curriculum Development.

Leithwood, K., Mascall, B., Strauss, T., Sacks, R., Memon, N., & Yashkina, A. (2007). Distributing leadership to make schools smarter: Taking the ego out of the system. *Leadership and Policy in Schools*, *6*(1), 37-67. https://doi.org/10.1080/15700760601091267

Leithwood, R., & Reid, C. (2003). *What we know about successful school leadership*. Temple University.

Liu, S., Hallinger, P., & Feng, D. (2016a). Supporting the professional learning of teachers in China: Does principal leadership make a difference?. *Teaching and Teacher Education*, *59*, 79-91. https://doi.org/10.1016/j.tate.2016.05.023

Li, L., Hallinger, P., & Walker, A. (2015b). Exploring the mediating effects of trust on principal leadership and teacher professional learning in Hong Kong primary schools. *Educational Management Administration & Leadership*, *44*(1), 20-42. https://doi.org/10.1177/1741143214558577

Liu, S., & Hallinger, P. (2018). Principal instructional leadership, teacher self-efficacy, and teacher professional learning in China: Testing a mediated-effects model. *Educational Administration Quarterly*, *54*(4), 501-528. https://doi.org/10.1177/0013161x18769048

Liu, S., & Hallinger, P. (2018). Principal instructional leadership, teacher self-efficacy, and teacher professional learning in China: Testing a mediated-effects model. *Educational Administration Quarterly*, *54*(4), 501–528. https://doi.org/10.1177/0013161X18769048

Liu, S., & Hallinger, P. (2017). Teacher development in rural China: How ineffective school leadership fails to make a difference. *International Journal of Leadership in Education*, 1-18. https://doi.org/10.1080/13603124.2017.1294266

MacBeath, J., Oduro, G.K.T. & Waterhouse, J. (2004). *Distributed leadership in action: A study of current practice in schools.* National College for School Leadership, Nottingham.

Margolis, J., & Strom, K. (2020). Assessing the success of teacher leadership: The case for asking new questions. *Professional Development in Education, 46*(4), 607–621. https://doi.org/10.1080/19415257.2020.1787200

McLaughlin, M. W. & Talbert, J. E. (2006). *Building school-based teacher learning communities: Professional strategies to improve student achievement.* Teacher College Press.

Malmir, A., & Mohammadi, P. (2018). Teachers' reflective teaching and self-efficacy as predicators of their professional success: A case of Iranian EFL teachers. *Research in English Language Pedagogy (RELP), 6*(1), 117–138. https://doi.org/10.30486/relp.2018.538818

Miller, A. L., Wilt, C. L., Allcock, H. C., Kurth, J. A., Morningstar, M. E., & Ruppar, A. L. (2020). Teacher agency for inclusive education: An international scoping review. *International Journal of Inclusive Education, 26*(12), 1159-1177. https://doi.org/10.1080/13603116.2020.1789766

Molla, T., & Nolan, A. (2020). Teacher agency and professional practice, *Teachers and Teaching, 26*(1), 67-87. https://doi.org/10.1080/13540602.2020.1740196

Muijs, D., & Harris, A. (2003). Teacher leadership: Improvement through empowerment?. *Educational Management & Administration, 31*(4), 437-448. https://doi.org/10.1177/0263211x030314007

Oloruntegbe, K.O. (2011) Teachers' involvement, commitment and innovativeness in curriculum development and implementation. *Journal of Emerging Trends in Educational Research and Policy Studies, 2*, 443-449. https://hdl.handle.net/10520/EJC135468

Opfer, V. D., & Pedder, D. (2011). Conceptualizing teacher professional learning. *Review of Educational Research, 81*(3), 376-407. https://doi.org/10.3102/0034654311413609

Özer, N., & Beycioğlu, K., 2013. The development, validity and reliability study of distributed leadership scale. *Elementary Education Online, 12*(1), 77–86. http://ilkogretim-online.org.tr

Park, V., & Datnow, A. (2009). Co-constructing distributed leadership: District and school connections in data-driven decision-making. *School Leadership and Management, 29*(5), 477–494. http://dx.doi.org/10.1080/13632430903162541

Poekert, P. E. (2012). Teacher leadership and professional development: Examining links between two concepts central to school improvement. *Professional Development in Education, 38*(2), 169-188, http://dx.doi.org/10.1080/19415257.2012.657824

Polatcan, M. (2021). An exploration of the relationship between distributed leadership, teacher agency, and professional learning in Turkey. *Professional Development in Education*, 1-15. https://doi.org/10.1080/19415257.2021.1905050

Parise, L. M., & Spillane, J. P. (2010). Teacher learning and instructional change: How formal and on-the-job learning opportunities predict change in elementary school teachers' practice. *The Elementary School Journal, 110*, 323-346. http://dx.doi.org/10.1086/648981

Prenger, R., Poortman, C. L. & Handelzalts, A. (2021). Professional learning networks: From teacher learning to school improvement?. *Journal of Educational Change, 22*, 13–52, https://doi.org/10.1007/s10833-020-09383-2

Priestley, M., Biesta, G., & Robinson, S. (2015). *Teacher agency: An ecological approach.* Bloomsbury Publishing.

Qian, H., & Walker, A. (2013). How principals promote and understand teacher development under curriculum reform in China. *Asia-Pacific Journal of Teacher Education, 41*(3), 304-315. https://doi.org/10.1080/1359866x.2013.809050

Rismark, M., & Solvberg, A. M. (2011). Knowledge sharing in schools: A key to developing professional learning communities. *World Journal of Education, 1*(2). 150–160. https://doi.org/10.5430/wje.v1n2p150

Rosenholtz, S. J. (1989). *Teachers' workplace: The social organization of schools*. Longman.

Salehizadeh, S., Shabani, M., & Malmir, A. (2020). Professionalism: The perceptions of Iranian English teachers of competence and performance in language teaching. *Iranian Journal of English for Academic Purposes, 9*(1), 1–14. https://dorl.net/dor/20.1001.1.24763187.2020.9.1.1.8

Sannino, A. (2010). Teachers' talk of experiencing: Conflict, resistance and agency. *Teaching and Teacher Education, 26*(4), 838-844. https://doi.org/10.1016/j.tate.2009.10.021

Scribner, J. P., Sawyer, R. K., Watson, S. T., & Myers, V. L. (2007). Teacher teams and distributed leadership: A study of group discourse and collaboration. *Educational Administration Quarterly, 43*(1), 67-100. https://doi.org/10.1177/0013161X06293631

Simpson, A., Sang, G., Wood, J., Wang, Y., & Ye, B. (2018). A dialogue about teacher agency: Australian and Chinese perspectives. *Teaching and Teacher Education, 75*, 316–326. https://doi.org/10.1016/j.tate.2018.07.002

Spillane, J. P. (2005). Primary school leadership practice: How the subject matters1. *School Leadership & Management, 25*(4), 383-397. https://doi.org/10.1080/13634230500197231

Spillane, J. P. (2006). *Distributed Leadership*. Jossey-Bass.

Spillane, J. P., Halverson, R., & Diamond, J. B. (2004). Towards a theory of leadership practice: A distributed perspective. *Journal of Curriculum Studies, 36*(1), 3-34. https://doi.org/10.1080/0022027032000106726

Spillane, J. P., & Zuberi, A. (2009). Designing and piloting a leadership daily practice log. *Educational Administration Quarterly, 45*(3), 375-423. https://doi.org/10.1177/0013161x08329290

Szeto, E., & Cheng, A. Y. (2017). Principal–teacher interactions and teacher leadership development: Beginning teachers' perspectives. *International Journal of Leadership in Education, 21*(3), 363-379. https://doi.org/10.1080/13603124.2016.1274785

Talebizadeh, S. M., Hosseingholizadeh, R., & Bellibas, M. Ş (2021). Analyzing the relationship between principals' learning-centered leadership and teacher professional learning: The mediation role of trust and knowledge sharing behavior. *Studies in Educational Evaluation, 68*, 100970. https://doi.org/10.1016/j.stueduc.2020.100970

Timperley, H. (2011). *A background paper to inform the development of a national professional development framework for teachers and school leaders* (pp. 1–26). Australian Institute for Teaching and School Leadership.

Thoonen, E. E., Sleegers, P. J., Oort, F. J., Peetsma, T. T., & Geijsel, F. P. (2011). How to improve teaching practices: The role of teacher motivation, organizational factors, and leadership practices. *Educational Administration Quarterly, 47*(3), 496–536. https://doi.org/10.1177/0013161x11400185

Torres, D. G. (2019). Distributed leadership, professional collaboration, and teachers' job satisfaction in U.S. schools. *Teaching and Teacher Education, 79*, 111-123. https://doi.org/10.1016/j.tate.2018.12.001

Vähäsantanen, K. (2015). Professional agency in the stream of change: Understanding educational change and teachers' professional identities. *Teaching and Teacher Education, 47*, 1-12. http://dx.doi.org/10.1016/j.tate.2014.11.006

Vanblaere, B., & Devos, G. (2016). Relating school leadership to perceived professional learning community characteristics: A multilevel analysis. *Teaching and Teacher Education*, *57*, 26-38. https://doi.org/10.1016/j.tate.2016.03.003

Van der Heijden, H. R., Beijaard, D., Geldens, J. J., & Popeijus, H. L. (2018). Understanding teachers as change agents: An investigation of primary school teachers' self-perception. *Journal of Educational Change*, *19*(3), 347-373. https://doi.org/10.1007/s10833-018-9320-9

Vescio, V., Ross, D., & Adams, A. (2008). A review of research on the impact of professional learning communities on teaching practice and student learning. *Teaching and Teacher Education*, *24*(1), 80-91. https://doi.org/10.1016/j.tate.2007.01.004

Walker, E. (2007). A teacher educator's role in an Asia-derived learning study. *Studying Teacher Education*, *3*(1), 103-114. https://doi.org/10.1080/17425960701284081

Wang, T. (2016) School leadership and professional learning community: case study of two senior high schools in Northeast China. *Asia Pacific Journal of Education, 36*(2), 202-216, http://dx.doi.org/10.1080/02188791.2016.1148849

Wang, J., & Wang, X. (2012). *Structural equation modeling: Applications using Mplus*. John Wiley.

Wang, Y., Mu, G. M., & Zhang, L. (2017). Chinese inclusive education teachers' agency within temporal-relational contexts. *Teaching and Teacher Education, 61*, 115-123. https://doi.org/10.1016/j.tate.2016.10.009