

# Uncovering the role of principals in enhancing teacher professional learning in a centralized education system

The role of principals in enhancing TPL

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## Abstract

**Purpose** – Current school leadership research has primarily utilized quantitative methods to explore the relationship between leadership and teacher learning. However, there is a notable gap in understanding how principals facilitate professional learning, especially in centralized educational settings. This study aims to address this gap by examining the role of school leadership in enhancing teacher professional learning within a highly centralized education system.

**Design/methodology/approach** – This qualitative case study delves into the lived experiences of 15 teachers and eight school leaders in eight primary schools in Mashhad, Iran. Through semistructured interviews, researchers employed open and axial coding to systematically explore and categorize qualitative data. The study focuses on understanding the role of principal leadership in facilitating teacher professional learning by connecting themes and sub-themes across transcripts.

**Findings** – Effective principals worked on the cultivation of a culture that champions perpetual personal growth and development, the nurturing of a collaborative learning community, and the provision of essential resources and support. Findings showed the pivotal role of principals in promoting teachers' self-development, facilitating idea exchange and acknowledging their efforts. Principals appeared as key to encouraging information sharing, fostering collective learning, promoting professional development, overseeing teaching practices and ensuring the availability of resources to cultivate a supportive climate in a centralized education context.

**Originality/value** – We concluded that in centralized education, leadership practices for promoting teacher learning share similarities and differences with decentralized settings. The findings offer guidance for principals in centralized systems, supporting them in facilitating teacher professional learning in their schools.

**Keywords** Teachers' professional learning, Primary schools, Centralized education, Principals, Iran

**Paper type** Research paper

## Introduction

Since the 1960s, educational scholars have begun to question the potential of school systems in promoting equity and quality, resulting in a stronger emphasis on school effectiveness and teacher professional development (PD). This transitioned the approach to teacher development from conventional teacher training to continuous PD and, ultimately, evolving into teachers' professional learning (TPL) over time (Jones *et al.*, 2023). This new approach has gained widespread acceptance among educational policymakers, researchers and practitioners (Olmo-Extremera *et al.*, 2023). The traditional top-down approach to PD, delivered through short-term workshops, is criticized for its limited impact on teacher practices and student learning. Research suggests that informal channels, including peer



teaching, collaborative planning, shared assessment and mentoring, play a significant role in teachers acquiring knowledge and skills (Darling-Hammond *et al.*, 2017; Hallinger *et al.*, 2019).

Some empirical studies conducted aimed at providing an understanding of school-based PL (Alhashmi and Moussa-Inaty, 2021; Cansoy and Turkoglu, 2022; Hur, 2019; Netolicky, 2016; Johnston and George, 2018; Shaari *et al.*, 2018) and the leadership role of principals in enhancing the TPL (e.g. Bektaş *et al.*, 2020; Li *et al.*, 2016a; Liu and Hallinger, 2018; Karacabey *et al.*, 2022; Olmo-Extremera, 2023; Tayag and Ayuyao, 2020). However, the body of knowledge on how principals can facilitate TPL has substantially expanded in developed Western contexts (Durksen *et al.*, 2017), but this knowledge remains relatively limited in centralized countries (e.g. Cansoy and Turkoglu, 2022; Hur, 2019; Shaari *et al.*, 2018). Much of the existing knowledge is derived from Western societies, which are often decentralized and may have limited relevance for policy and practice in centralized countries such as Iran. Additionally, it's worth noting that a vast majority of studies that have been conducted in developing countries have predominantly employed quantitative research methods to determine the existence and extent of the relationship between principal leadership and TPL (e.g. Bellibaş and Gümüş, 2021; Liu *et al.*, 2016; Hallinger and Liu, 2016; Hallinger and Piyaman, 2019). There is a notable scarcity of qualitative research, particularly within developing Asian societies, which leaves the understanding of how these principles might influence teacher learning largely unexplored (e.g. Alhashmi and Moussa-Inaty, 2021; Alzayed and Alabdulkareem, 2021; Cansoy and Turkoglu, 2022). Addressing these gaps, the present study uses a qualitative case study to investigate how school principals in centralized countries like Iran can effectively facilitate and promote TPL. The study contributes to understanding leadership for teachers learning in other Asian and non-Western societies and offers insights for facilitating future comparative studies in other centralized countries, shedding light on the supportive leadership dynamics for teacher learning and growth within such systems.

## Literature review

### *Teacher professional learning*

The scholarly literature highlighted a clear distinction between PD and TPL, with PD often depicted as a fleeting 'spray-on' approach, while TPL emphasizes enduring, context-specific and collaborative learning experiences tailored for educators (Loughran *et al.*, 2011). In contrast to traditional approaches to PD such as workshops or conferences; effective TPL, as articulated by Bayar (2014), implies the alignment with the needs of both teachers and schools, active teacher engagement, the provision of dynamic learning opportunities, sustained involvement and access to high-caliber instructors.

A synthesis of the literature tends to conceptualize TPL as a deliberate and sustained process by encompassing both externally-provided and job-embedded activities through formal programs and informal interactions, all aimed at expanding knowledge and pedagogical strategies (Li *et al.*, 2016b; Liu and Hallinger, 2018; Hallinger *et al.*, 2019). These activities include participating in workshops, seminars, collaborative planning and discussions, peer teaching, shared assessment, mentoring and self-guided study, with a focus on enhancing teaching capacities (Brown, 2020). In a recent study, Cirkony *et al.* (2024) reviewed the literature and delineated eight essential features characterizing effective TPL, including collaboration; active learning and reflection; content and pedagogy in context; sustained duration; coaching; external expertise; models and modeling and audience and alignment. Study by Kilag *et al.* (2024) highlights the significance of experiential learning in shaping teacher development.

These capacities align with three primary levels: individual, interpersonal and organizational (Slegers *et al.*, 2013). Adding network capacity, as suggested by Horváth *et al.* (2015), emphasizes the interconnected nature of professional learning communities (PLCs). At the individual level, teachers develop reflective practice skills for critical evaluation of teaching methods, student outcomes analysis and adaptability (Zeichner and

Liston, 2013). Collaboration becomes essential at the interpersonal level involving peer observations and participation in PLCs (Lieberman and Mace, 2010). At the organizational level, schools play a central role. Scholars highlighted conditions influencing professional learning within school contexts (Cirkony *et al.*, 2024; Admiraal *et al.*, 2021), focusing on the pivotal role of leadership in the development of teachers' professional identity and the enhancement of their competence (Poekert *et al.*, 2020; Atstsaury *et al.*, 2024). Supportive leadership shapes professional learning capacities, fostering an environment for teacher growth (Hargreaves and Fullan, 2012).

#### *Principals' leadership for professional learning*

Supporting TPL is an indispensable element of the description of effective school leadership. Effective learning practices like collaborative planning, observation, feedback, PLCs and instructional coaching require a concerted effort to plan, implement and sustain them. They require supportive policies, technology integration and overcoming barriers to enhance teacher practices and student outcomes. At this point, principals can play a substantial role (e.g. Darling-Hammond *et al.*, 2017; Hallinger *et al.*, 2018; Croft *et al.*, 2010). For instance, Darling-Hammond *et al.* (2017) emphasized the role of school principals in conducting needs assessments to align professional learning with educators' needs, providing feedback through coaching and mentoring facilitates targeted support for refining teaching practices, evaluating and redesigning school schedules increases opportunities for collaboration, including PLCs, peer coaching and collaborative planning and developing expert teachers as mentors and coaches in specific areas further supports educators' ongoing learning.

According to Hallinger *et al.* (2018), school leaders bear the substantial potential to create an environment for collaborative learning, provide resources and support the implementation of teacher learning. Principals can shoulder the significant responsibility of organizing and supporting teacher professional learning (Li *et al.*, 2016a). They also can, for instance, actively shape the structural conditions within the school by crafting teacher development protocols, implementing accountability measures, and contributing to curriculum planning (Qian and Walker, 2021). Their support and value for PD also motivate teachers to engage in activities like seminars and courses, fostering a supportive school environment (Karacabey, 2021; Li *et al.*, 2016b; Qian and Walker, 2021). Furthermore, school leaders play a crucial role in integrating professional learning into daily school life, promoting teacher engagement and leadership strategies. Despite policy challenges, empowering teachers with collaborative cultures and personalized learning programs is essential for successful development (Jones *et al.*, 2023). As remarked by Croft *et al.* (2010), school leaders should prioritize job-embedded PD, support instructional facilitators, allocate dedicated time for collaborative learning and use student performance data to create a supportive environment for continuous teacher learning.

Numerous quantitative studies indicate that school principals play a pivotal role in fostering TPL. These studies highlight the mediating factors, including teacher self-efficacy, trust, agency and motivation (Bellibaş and Gümüş, 2021; Hallinger *et al.*, 2019; Hosseingholizadeh *et al.*, 2020; Liu and Hallinger, 2018; Karacabey *et al.*, 2022; Bektaş *et al.*, 2020; Tayag and Ayuyao, 2020). Moreover, direct contributions to TPL are observed through factors such as trust, collaboration, participatory learning and dialogues (Bellibaş and Gümüş, 2021; De Jong *et al.*, 2021; Durksen *et al.*, 2017). Despite these quantitative insights, there is a need for qualitative evidence to identify specific school leadership practices that enhance TPL.

#### *The influence of context on teacher professional learning*

Educational policies, especially those concerning teacher development and learning, are deeply influenced by cultural, political and ideological factors (Jones *et al.*, 2023). These

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factors significantly impact how educators work and learn in centralized education systems. In these systems, traditionally, PD relies on system-level support offered by public education authorities, teacher education institutions and other tertiary education institutions that have often taken the form of a single or short series of externally provided learning courses (Luka, 2020). In those settings, centralized teacher PD, because it is direct, relative to educational policy at the central level and sometimes obligated, could contribute to effective teacher development (Hur, 2019).

Despite various learning activities, such as sharing teaching practices, seeking help from colleagues and using online resources, principals encounter a wide range of obstacles in facilitating teacher development in centralized systems. These include limited collaboration time, teachers considering their classrooms private, inadequate in-house development programs, bureaucratic inefficiencies, equipment shortages hindering innovative teaching and unproductive regional school cooperation meetings (Cansoy and Turkoglu, 2022). Centralized accountability systems have limitations in teacher PD because they often neglect the actual needs of teachers at the school level (Hur, 2019). Moreover, the emphasis on individual teacher quality and compliance, along with isolating “successful teachers” through merit pay, detracts from fostering collective responsibility and collaboration (Talbert, 2010). According to Karacabey (2021), only 25.5% of school principals in Turkey adequately supported teachers’ PD, often providing occasional support. Cansoy and Turkoglu (2022) also identified a lack of collaboration and classroom observations as significant barriers to TPL. They emphasized challenges such as teacher motivation, limited collaboration time and the necessity for PD in technology use and innovative teaching methods. Teachers often experience a sense of isolation due to inadequate support from their schools and regional education directorates.

The impact of centralization on principals’ endeavors to support teacher learning depends on a balanced approach, integrating both centralized and school-based elements (Hur, 2019). Dynamic tensions between bureaucratic and professional perspectives pose a challenge. From this perspective, school leadership should mobilize bureaucratic resources to implement professional strategies, and they must navigate context pressures and politics to sustain long-term support for developing an environment for teacher learning (Talbert, 2010). Scholars suggested collaboration between headquarters and schools by establishing systematic mechanisms to facilitate TPL, aiming to transform schools into conducive learning environments where school leadership teams play a pivotal role. In this regard, principals act as crucial bridges between teachers, policies and school stakeholders (Karacabey, 2021; Shaari *et al.*, 2018) and should foster a culture of collaboration, aligning professional learning activities with school goals, and allocating resources to address teachers’ diverse needs and individualized teacher learning plans (Ingersoll and Strong, 2011). In these settings, leaders can foster partnerships and leverage lateral teacher networks for expansive projects that cater to teachers’ needs. These networks promote teacher agency through key designs: balancing daily practices with network activities, collaborating for innovation and organizing relationship-building activities (Shaari, 2018, 2020). However, establishing a learning community in a centralized context involves addressing normative and organizational challenges. It requires transforming schools and the system from a bureaucratic culture to one of professionalism, a profound shift driven by and resulting in the development of learning communities across the system (Talbert, 2010). Additionally, it is crucial to encourage teachers to actively participate in professional learning, viewing it as a right rather than an obligation (Hur, 2019).

## Method

This study aimed to comprehensively explore how principals facilitate the PD of teachers through the utilization of a qualitative case study approach.

*Context and participants*

This study was conducted in Mashhad, located in Iran’s Razavi Khorasan province, where the education system operates with high centralization, encompassing primary, secondary and higher education. Policy decisions are derived from both central and local bodies, guided by the Fundamental Reform Document of Education outlined in the National Education for All report (2000–2015). Ongoing national curriculum reforms, initiated in 2011, have significantly impacted the institutional landscape for school leaders and teachers. The Ministry of Education takes a leading role in formulating and executing teacher PD, primarily through in-service training programs. Additionally, they have introduced context-embedded initiatives like lesson study and action research to actively involve teachers in sharing best practices and promoting reflective teaching, collaboration and a continuous commitment to improving teaching and learning (Talebizadeh *et al.*, 2021).

Mashhad’s primary schools are distributed across seven districts, each representing a diverse range of socioeconomic statuses. For this study, we carefully chose eight schools distributed across three distinct districts (3, 4 and 5) to capture the best cases for the study across all seven districts within the city of Mashhad. These schools were recommended by the Ministry of Education due to their outstanding achievements in fostering innovative teaching practices, active participation in instructional initiatives and national recognition for their contributions to action research and lesson study programs. Notably, the principals of these schools were identified as exceptionally effective in advancing TPL within the school. Thus, the qualitative data consisted of interviews with 8 principals and 15 teachers. The demographic information of the interviewees is displayed in Table 1.

Category	Frequency
<i>Gender</i>	
Female	17
Male	6
<i>Role</i>	
Teacher	15
Principal	8
<i>Highest degree</i>	
Bachelor’s	15
Master’s	8
<i>Teaching experience</i>	
Below 11 years	7
11–20 years	13
Above 20 years	3
<i>Administrative experience</i>	
Below 2 years	10
2–5 years	5
5–10 years	4
Above 10 years	4
<i>Total work experience</i>	
11–20 years	8
Above 20 years	15
<b>Source(s):</b> Authors’ own work	

**Table 1.**  
The demographic information of the interviewees

*Data collection*

This study collected data through in-depth interviews with Iranian primary school teachers and principals to understand their professional learning experiences. The interview protocol was designed to explore the role of principals in enhancing TPL within the school context, using open-ended questions to uncover the strategies employed. The length of each interview session varied to accommodate the dynamic nature of participant responses and to ensure comprehensive data collection. The interview durations ranged between 45 and 80 min. Conducted by an experienced researcher, these interviews took place at eight different schools and included both principals and experienced teachers. In this study, a researcher with over 20 years of experience in education actively participated in interviews, skillfully fostering relationships, navigating ethical considerations and engaging in reflective practices. Her contributions significantly deepened the authenticity of findings, ultimately enhancing the overall quality of the qualitative research (Aluwihare-Samaranayake, 2012).

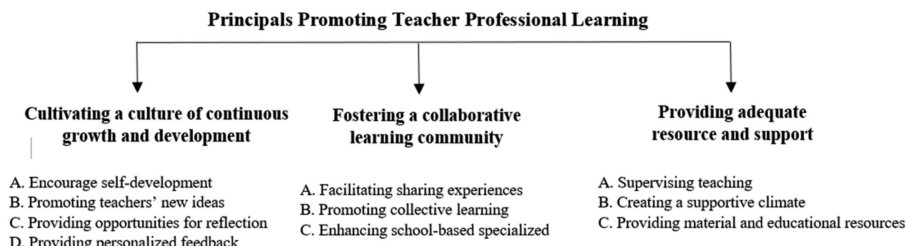
*Data analysis*

Data analysis followed a systematic approach, utilizing open and axial coding by Strauss and Corbin (1997). This method systematically explored and categorized qualitative data, starting with identifying 'significant' statements and then assigning initial codes through open coding. These codes were grouped into preliminary categories. By connecting themes across all transcripts, researchers identified categories representing TPL capacities and the role of principals, allowing for a comprehensive exploration of the data.

To ensure the reliability and validity of our qualitative data, we followed Lincoln and Guba's (1985) trustworthiness criteria: credibility, transferability, dependability and confirmability. For instance, reliability was ensured by engaging two researchers in the analysis of raw data independently, followed by a comparison of their results to identify the codes and themes (O'Connor and Joffe, 2020). In addition, regular meetings helped a team member, an experienced teacher, set aside her beliefs during data analysis. These efforts enhanced the integrity of our study on professional learning among Iranian primary school teachers.

**Results**

In this section, we explore the qualitative evidence that sheds light on the central role school principals play in augmenting TPL capacities. This exploration is grounded in their real-life experiences and insights. Our findings have been thoughtfully organized into three distinct themes: the cultivation of a culture of continuous personal growth and development, the nurturing of a collaborative learning community and the provision of essential resources and support (see Figure 1).



**Figure 1.**  
The role of principals in enhancing teachers' professional learning

**Source(s):** Authors' own work

*Theme 1. Cultivating a culture of continuous growth and development*

Our findings highlight the essential role of principals in encouraging self-development, promoting teachers' new ideas, providing opportunities for reflection and appreciating teachers' efforts.

A. Encouraging self-development

Principals play a pivotal role in motivating teachers to drive their professional growth. Principals' facilitated teachers' self-directed PD by actively supporting those interested in pursuing a degree in higher education institutions and encouraging their participation in workshops that are officially approved and announced by the Ministry of Education. Moreover, by effectively communicating opportunities for engaging with various professional groups across districts, and fostering connections with these groups, principals helped teachers to benefit from valuable collaborations, shared insights and staying abreast of the latest educational advancements.

As a principal, I consider it crucial to, at the very least . . . , offer guidance for self-study, connect colleagues with experts, and advise on the utilization of learning opportunities to support self-directed learning efforts. (P6). I encourage them to participate in these training courses (P6). Encouraging colleagues to read books and update their teaching methods, and sharing experiences and ideas with each other is done (P4). We have a small library in the school . . . and the principal suggests that colleagues visit these books (T3. S7).

B. Promoting teachers' new ideas

The study underscores the importance of principals' support for creative initiatives and knowledge-sharing in cultivating a culture of continuous improvement within the school community. This dedication serves as an inspiring model for teachers, motivating them to welcome change, explore innovative approaches and actively seek solutions to educational hurdles, resulting in an environment where TPL is a dynamic, ever-evolving process. For instance, the establishment of a "Creativity and Innovations" group in one case served as a testament to the active sharing of new and inventive teaching ideas. These meetings, held regularly and overseen by principals every month, created a platform for educators to exchange insights. Additionally, peer groups and teachers' councils provided the best forums for sharing innovative ideas, addressing teaching challenges and sharing experiences. Principals effectively managed these interactions, both in face-to-face and virtual settings, fostering a culture of open communication. By extending invitations to colleagues of diverse positions, including retired educators and by removing rigid constraints on activity presentation, the principal ensured an inclusive and unrestrained exchange of ideas. This approach fosters the sharing of best practices and innovative concepts among teachers, significantly contributing to their learning

I wholeheartedly embrace new perspectives and actively seek solutions to professional challenges. (P6). We've established a group called 'Creativity and Innovations.' All colleagues, regardless of their position, openly share activities they find exceptional, stylish, aesthetically pleasing, and practical within this group and among their peers. colleagues have the liberty to share their exemplary work. They introduce any new designs or innovative ideas they have in this group. (P1).

C. Providing opportunities for reflection

Our analysis highlights the principal's active engagement in reflective practices, both individually and collaboratively, to enhance the educational experience for teachers and



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students. By involving teachers in their annual evaluations and providing them with timely and positive feedback to teachers, principals encouraged teachers to engage in self-assessment and constructive reflection. This helped teachers identify the weaknesses and strengths of their teaching. Facilitating a culture of mutual observation and collaborative reflection among teachers was a key initiative led by principals to promote continuous learning. Principals encouraged educators to engage in classroom observations of their peers and organize group meetings, such as lesson study sessions, to thoughtfully evaluate and critique each other's teaching methodologies. These intentional practices, guided by principals, served as effective mechanisms for fostering reflection and professional growth. Furthermore, principals actively created an environment that embraces the open sharing of both educational successes and challenges among teachers. This open dialog not only cultivated a culture of transparency but also provided valuable opportunities for teachers to reflect on their experiences and collectively learn from each other.

To promote a culture of reflection and facilitate the exchange of experiences among colleagues, we have instituted peer groups within the school (P1). I used to furnish each colleague with a comprehensive report detailing their students' performance in their classes. I would delve into the underlying reasons, encouraging my colleagues to revisit and re-teach those topics or to investigate why the students encountered difficulties (P2).

#### D. Providing personalized feedback

At the heart of this positive educational environment is the active engagement and support provided by school principals. Their commitment goes beyond resource provision; it involves continuous involvement and support to ensure effective utilization. When a colleague faces challenges or disengagement, the principal initiates direct conversations to understand their needs, prioritizing teachers' and well-being while fostering positive changes in the school. An essential element of this support system is the provision of timely and positive feedback to teachers. This feedback culture recognizes teachers' successes and motivates them to maintain high levels of engagement and excellence. The value of recognition and encouragement from principals is also highlighted, inspiring increased involvement in school initiatives and continuous improvement of teaching methods. As noted by a participant:

When I notice a positive aspect of a colleague's teaching and classroom management, I provide them with timely feedback, and this positive cycle continues (P3).

### *Theme 2. Fostering a collaborative learning community*

#### A. Facilitating sharing experiences

The findings highlighted a proactive approach to professional learning and collaboration in education, emphasizing the value of teachers sharing their experiences. This promoted a school culture that values collective wisdom, mutual support and ongoing enhancement. Establishing peer groups based on shared grade levels within the primary schools and expanding them into instructional teams that connect multiple schools within a district created a valuable opportunity for educators to exchange teaching strategies, lesson plans and educational insights. These peer groups served as a collaborative platform where teachers could openly discuss classroom challenges and collaboratively generate effective solutions. To facilitate the formation of these peer groups, proactive principals took the lead in identifying common interests or needs among teachers. Principals tried to allocate



dedicated time and resources for these peer group activities for example, by integrating regular meetings into the school schedule, providing access to required materials, connecting to external experts and providing suitable face-to-face and virtual meeting spaces. To maintain focus and direction, Principals communicated the purpose of the peer groups and ensured that they remained actively engaged in achieving their objectives. Some participants noted:

Based on the school principal's idea, my colleagues have formed a group to share ideas and utilize each other's experiences in virtual classrooms, which is quite interesting. We try to learn from each other and use each other's experiences (T5. S8). To encourage colleagues to reflect on their experiences and to exchange and share their experiences with other colleagues, we have formed a peer group in our school (P1).

### B. Promoting collective learning

Principals and teachers jointly fostered a culture of collaborative learning and knowledge exchange, promoting collective teacher development. Principals viewed teachers' learning as a shared effort, emphasizing the interconnectedness of teacher growth. This perspective encourages shared knowledge and support, reframing TPL as an investment in collective skills. The idea that TPL is not "costly or time-consuming" encourages teachers to embrace continuous learning. The notion that "we all work together and rise together" captures this philosophy, stressing that individual progress benefits the entire team and strengthens unity and mutual understanding among colleagues, benefiting the entire school community. As some principals articulated:

I don't see learning as merely an individual matter, and I don't consider it a costly or time-consuming affair (P6). In our school, we all work together and rise together. It's not a situation where one person lifts themselves up alone. Colleagues have a very good understanding of this (P3)

Teachers stressed the importance of informal knowledge exchange in the school community, facilitated by supportive principals. They encouraged open communication, fostering a culture of learning and growth. Structured activities, such as lesson study, served as collaborative learning opportunities that benefitted both experienced and less-experienced teachers. Principals played a vital role in supporting lesson studies by fostering collaborative and supportive conditions, ensuring teachers feel at ease working together to improve their teaching practices, and trust building between all teachers with different approaches and experiences. They set aside dedicated time within the school day for lesson study activities, recognized and celebrated achievements and offered guidance with timely plans to actively involve teachers. From the perspective of teachers, these efforts contributed to fostering a shared responsibility for the ongoing improvement of teaching and learning. As expressed by some participants:

We exchange ideas with colleagues at the school during breaks, . . . Group activities, like lesson study, benefit all teachers, promoting knowledge exchange (T4.S3). In our meeting to form this year's research team, we thanked last year's contributors, discussed past challenges, and emphasized the importance of improved collaboration. We committed to addressing shortcomings, fostering teamwork, and providing regular feedback for a more successful and efficient work environment (P3).

### C. Enhancing school-based specialized training

The school's strategy of involving specialists and experienced teachers in in-school training reflects its commitment to fostering a culture of knowledge-sharing among educators. This practice enhanced teaching quality and demonstrated the school's investment in TPL.

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Principals facilitated this by introducing educational tools like learning management systems (LMS) and Mathematics education kits, benefiting both teachers and students. For instance, the introduction of the LMS, along with a workshop emphasizing its importance, highlighted the school's adaptability to contemporary educational tools and its commitment to a collaborative and technologically enriched learning environment. Additionally, the school's engagement of instructional groups and external experts for in-school training showcased its eagerness to tap into diverse knowledge sources, offering teachers varied learning opportunities.

This year, we had a workshop for using the LMS, which we introduced to our colleagues. We even brought in an expert to provide training, and we ensured that the system was well-defined . . . we created opportunities for them to utilize this platform (P1). Before the pandemic, the school procured a Mathematics Education Kit, which proved to be fascinating and highly beneficial. Some components of the kit were new to us, so we needed to learn how to use them effectively. School administration established contact with a purchasing center representative who then provided training to teachers on how to use the kit and its instructional materials, including instructional CDs (T5. S8).

Furthermore, principals effectively supported the PD of teachers by inviting relevant stakeholders to in-school training. In instances where internal resources may be insufficient, they proactively sought the input of external stakeholders, such as academics and parents. Additionally, instructional groups were invited to facilitate in-school training, covering areas like instructional planning and lesson study. As reported by some participants:

To enhance our colleagues' knowledge, we organized training courses and provided instruction. Some of our capable school colleagues conducted the courses, or we invited external experts to deliver the training (P1). Inviting instructional groups for in-school training (P8). We aim to use the capabilities of primary students' parents to teach certain subjects We are responsible for the entire process, from conception to implementation, based on local resources (T3. S2).

### *Theme 3. Providing adequate resources and support*

#### A. Supervising teaching

The interviews highlighted the proactive role of principals in overseeing teachers' educational performance and providing feedback for improvement. Their engagement encompassed various facets such as classroom observations, feedback provision, supervision of educational plan implementation and ensuring adherence to official educational standards. Moreover, they dedicated themselves to regularly following up on students' progress, addressing educational issues promptly and exhibiting a commitment to preventing academic decline. Principals adopted a meticulous approach to monitoring the classroom environment, either conducting observations themselves or delegating the task to deputies. These observations center on instructional methods and student performance, fostering accountability and fostering the delivery of high-quality education.

Some principals described their approach as follows:

We observe classes, especially by me and my deputies. I personally go into classrooms, sit in and evaluate the teacher's instruction. Either myself or my deputies are present in the classroom, monitoring both the teacher's teaching methods and the students' performance (P4). My duty as a principal is to care about both the students and the teachers, to uplift them. A teacher should make progress (P1).

#### B. Creating a supportive climate

Despite the hierarchical structure within Iran's educational system, principals strived to cultivate a positive climate by fostering friendly relationships based on mutual respect, open

communication and considerate behavior with teachers. Principals aimed to create conditions that motivate and support teachers in actively engaging with the school. For instance, principals were dedicated to being visible and allocating time for effective communication with teachers, promptly addressing their needs. They actively contributed to generating vitality and energy among teachers, fostering a positive atmosphere within the school. These efforts established a sense of alignment between principals and teachers and provided opportunities for teachers to express their opinions and attitudes. Principals created a comfortable space for teachers to exchange ideas, respond, guide others and actively participate in solving educational problems. Additionally, principals exhibited trust in the capabilities of young teachers, fostering mutual understanding. They supported teachers in organizing and conducting meetings, emphasizing the abilities of young educators and promoting collaborative efforts between principals and teachers. As articulated by some interviews:

In our school, the interaction between colleagues is excellent. The presence of an intimate and friendly atmosphere among colleagues has led to the exchange of experiences (T5. S8). The school staff's commitment to accountability and collaborative problem-solving, along with their proactive engagement and incorporation of diverse perspectives, has fostered a conducive environment for continuous professional learning for all (P5). The principal consistently allocates time, demonstrating responsiveness and a comprehensive willingness to cooperate whenever there are tasks, questions, or concerns, ensuring a supportive and collaborative dynamic (T4. S3). The principal is caring and very supportive, and she has helped us a lot (T4. S3).

### C. Providing material and educational resources

The school principal is taking concrete steps to support their colleagues by providing a variety of educational resources, including kits, videos and books, to enhance teaching and TPL. Additionally, the principal actively promotes self-learning by introducing resources, giving guidance for self-study and connecting teachers with knowledgeable individuals, enabling educators to customize their growth according to their needs and interests.

## Discussion

The findings of this study offer a comprehensive view of how TPL in primary schools is intertwined with the active involvement of school principals in a highly centralized education system. It identified three core themes: fostering a culture of continuous personal growth and development, nurturing a collaborative learning community and providing essential resources and support. This support the notion that teacher learning functions as a nested system involving autonomous entities (teachers), collectives (e.g., grade level and subject groups) and subsystems within larger entities (schools within school systems) within broader sociopolitical educational contexts, as asserted by [Opfer and Pedder \(2011\)](#). Our study indicated that the school's commitment to fostering a collaborative learning community is evident through various interconnected activities, resources, networks and structures. Teachers actively engage in specialized groups and structured professional discussions to share insights and experiences such as lesson study and instructional groups across schools. These collaborative efforts are further facilitated by the proactive involvement of the principal in forming and encouraging peer groups. Classroom observations, feedback mechanisms and continuous improvement dialogs are activities supported by principals to organize formal and informal learning opportunities based on individual learning needs. Overall, within centralized education systems like Iran, where limitations on principals' autonomy can restrict access to resources and learning opportunities for teachers, the

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fostering of self-study initiatives emerges as a critical strategy for PD. Within this framework, principals assume a pivotal role as “catalysts for self-study,” enabling teachers to proactively explore and enhance their skills through independent learning endeavors. In line with existing literature, we found that principals play a key role in fostering a culture of continuous self-development and in encouraging teachers to take ownership of their professional learning. They provide essential resources, offer guidance for self-study, connect colleagues with experts and advise on effective utilization of learning opportunities. This proactive approach by principals not only empowers teachers to identify their unique learning needs but also promotes a culture of continuous professional learning (Liu *et al.*, 2016; Netolicky, 2016).

Our analysis aligns with Porcell’s (2020) study, which emphasizes the importance of cultivating a culture of innovation and idea-sharing within educational institutions. It underscores the significance of embracing fresh perspectives and actively seeking solutions to professional challenges. This proactive approach signifies the principal’s role in fostering open-mindedness and adaptability among teachers, setting a tone of continuous improvement culture of open-mindedness and adaptability among the teaching staff as asserted by Porcell (2020). In keeping with extensive research, this study reaffirms the vital role of principals in providing opportunities for reflection for teachers (Alzayed and Alabdulkareem, 2021; Bektaş *et al.*, 2020; Bellibaş and Gümüş, 2021; De Jong *et al.*, 2021; Mei Kin and Abdull Kareem, 2021; Porcell, 2020; Yin *et al.*, 2019). Teachers receive feedback from various sources, and principals play a vital role in enhancing this capacity. They can arrange group critique sessions where teachers collaboratively review teaching methods, promoting reflection. Principals also provide consistent, constructive feedback on teachers’ performance through methods like observations and interactive discussions (Bellibaş and Gümüş, 2021).

Additionally, the present study underscores the essential role of principals in creating a collaborative learning environment where the exchange of experiences, collective learning, professional learning and the utilization of local resources are actively encouraged. This approach contributes to the overall quality of education, promotes innovative teaching methods and strengthens the sense of unity and mutual support within the school community. The principal’s multifaceted involvement is central to fostering a dynamic and continuously improving educational ecosystem. Several researches (Durksen *et al.*, 2017; Mei Kin and Abdull Kareem, 2021; Netolicky, 2016) supports this positive relationship between collaborative learning and professional growth. A supportive school environment significantly impacts teachers’ engagement and dynamism in learning activities, aligning with studies emphasizing dynamic learning environments (Bektaş *et al.*, 2020; Karacabey *et al.*, 2022; Liu and Hallinger, 2018; Netolicky, 2016; Tayag and Ayuyao, 2020; Yin *et al.*, 2019). This highlights the crucial role of principals in providing this support and enhancing both teachers’ learning and student performance (Bektaş *et al.*, 2020; Hosseingholizadeh *et al.*, 2020; Liu and Hallinger, 2018; Liu *et al.*, 2016; Tayag and Ayuyao, 2020; Yin *et al.*, 2019).

In keeping with research, our findings underscore the diverse roles of principals in providing resources and supervision, cultivating a positive atmosphere and supporting educational initiatives. They proactively monitor teachers, encourage academic excellence and foster a non-hierarchical, collaborative environment. This supportive culture benefits both teachers and students (e.g., Johnston and George, 2018). Principals also drive TPL by offering resources, guiding self-directed learning and optimizing the physical environment. They stress the importance of teachers’ commitment to resource effectiveness and offer support, expert connections and well-being enhancement. Principals are instrumental in shaping a supportive learning environment that emphasizes quality over quantity, fostering continuous improvement and educational excellence (e.g. Bellibaş and Gümüş, 2021; De Jong *et al.*, 2021; Durksen *et al.*, 2017).

### Limitations

This study has significant limitations to consider. Firstly, its short post-2011 curriculum reform time frame may not capture long-term effects, necessitating future longitudinal research. Secondly, it is specific to Iran's centralized education system and culture; cross-cultural studies would provide valuable insights into role variations. Lastly, in our study, triangulation was primarily achieved through interviews with principals and teachers. While this approach provides valuable insights, we acknowledge a limitation in the limited scope of data collection methods. To enhance triangulation comprehensively, future research could benefit from diversifying methods, such as incorporating document analysis, observations or surveys. This expansion would contribute to a more robust and reliable understanding of how principals promote teacher learning. Nevertheless, the strength of our findings lies in rich case studies that describe how principals enhance teacher TPL within a highly centralized hierarchy. Despite these limitations, our research provides valuable insights into TPL and principal roles in centralized educational contexts.

### Conclusion

This study underscores the vital role of principals in nurturing TPL and creating an optimal learning environment assuming the effectiveness of top-down approaches to education reform have been deemed ineffective over the last decades which has resulted in the search for new methods of professional learning for teachers within schools as asserted by [Hudson \(2023\)](#). The identified need for a balanced approach, harmonizing both centralized and school-based elements, underscores the importance of strategic considerations in educational leadership. Recognizing the dynamic tensions between bureaucratic and professional perspectives, policies should encourage collaborative mechanisms between central headquarters and schools. Such policies can guide the establishment of systematic approaches to facilitate TPL and create supportive learning environments within schools. Specific practices found in this research are vital for transforming the educational landscape and necessitate backing from policymakers through comprehensive system-wide initiatives. This support should encompass formal principal training, development programs, research incentives and increased flexibility within the educational system. Achieving these goals may involve the development of regulations that grant greater autonomy, both in human and material resources, enabling educators to plan, implement and sustain high-quality TPL.

For school leaders, particularly principals, this study highlighted their role as key actors in addressing the issues of a centralized system and facilitating teacher learning. We found evidence that principals can actively cultivate a culture of collaboration within their schools, aligning professional learning activities with overarching school goals. They can motivate teachers by recognizing their achievements and igniting their enthusiasm for learning. They can also facilitate self-directed learning, promote knowledge sharing, encourage innovation, establish feedback mechanisms and cultivate a supportive school atmosphere. Their proactive approach to designing tailored self-learning programs, promoting knowledge exchange and allocating resources for self-directed learning is crucial. Principals must embody values and practices that create an environment conducive to ongoing improvements in teaching and learning. Importantly, such practices might also hold relevance and applicability across other centralized educational systems worldwide.

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**Further reading**

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