Successful Principal Leadership and its Impact on Professional Learning Communities in Early Childhood Education in Mainland China: A Mixed Methods Approach

by

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Statement of Originality

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Abstract

Early childhood education (ECE) in China is transiting from guaranteeing educational equity to increasing its quality as more emphasis is placed on the importance of ECE in preparing children for success in adulthood worldwide. During the process of the transition, discussions on the role and impact of kindergarten principals in this endeavour have gained momentum since successful leadership is regarded as being a crucial component of quality ECE (Heikka et al., 2021a; Klevering & McNae, 2018). The significant role of principals in contributing to school improvement and student achievement from various aspects in other schooling sectors has been identified with scholars in different cultural contexts for a comparatively long history. For instance, a bunch of studies identified the positive influence of principal leadership on Professional Learning Communities (PLCs). However, empirical exploration of quality leadership practices and the impact of these leadership practices on PLCs in the ECE sector is rare to find in the literature, particularly in the context of mainland China.

Based on the interpretivism nature of this current project, the exploratory sequential mixed methods approach was adopted, starting with a qualitative strand followed by a quantitative strand. Qualitative data were collected by conducting face-to-face semi-structured interviews with 12 principals and 30 teachers distributed in 12 exemplary kindergartens in Yunnan Province, China. Whereas for the quantitative data the project applied the SPL model established in the qualitative strand and the PLCs inventory designed by Chen (in press). The online survey collected 533 valid

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questionnaires from both kindergarten principals and teachers in Yunnan Province. Interview transcripts and survey data were analysed and synthesised to uncover indigenous successful principal leadership practices and the impact of these leadership practices on PLCs.

The results from the research project revealed that successful principal leadership practices in ECE consisted of five dimensions with 20 items. The findings of the project have reinforced previous research on successful principal leadership by highlighting the distinctive enactments of principal leadership practices in ECE in mainland China. Meanwhile, the positive influence of successful principal leadership on PLCs was affirmed by the current research by demonstrating the dimensional correlations between leadership practices and PLC factors. The significant correlation paths add evidence on how principal leadership could impact teacher collaborative learning in kindergartens with a more nuanced presentation. Along with these research findings, a new inventory on successful leadership practices (SPLI) was established and validated by the current project, which set up the foundation for further research. The findings of the project could be used to guide principal preparation, training, professional development, and evaluation. In addition, this study could benefit ECE practitioners about principal leadership practices that positively impact on the factors of professional learning communities (PLCs) in kindergartens in mainland China.

Keywords: Successful Leadership, PLCs, ECE, China, Mixed Methods

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List of Abbreviations

PLCs	Professional Learning Communities
ECE	Early Childhood Education
IL	Instructional Leadership
TL	Transformational Leadership
DL	Distributed Leadership
EFA	Exploratory Factor Analysis
CFA	Confirmative Factor Analysis
CFI	Comparative Fit Index
TLI	Tucker–Lewis Index
SEM	Structural Equation Modelling
RMSEA	Root Mean Square Error of Approximation
SRMR	Standardized Root Mean Residual
EDUHK	The Education University of Hong Kong
OLF	Ontario Leadership Framework
SPL	Successful Principal Leadership Model
SPLI	Successful Principal Leadership Inventory

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Chapter One: Introduction

This chapter aims to provide background of the research project on investigating successful principal leadership and its impact on professional learning communities (PLCs) in early childhood education (ECE) in mainland China. The Chinese ECE context is briefly introduced in the first section, and then discussion on the rationale of the project is given followed by the research objectives and the research questions. The chapter ends with an overview of the research project.

1.1 Context of ECE in Mainland China

Comparing ECE in other countries and regions, the unique features of the ECE context in mainland China are shaped by Chinese culture and policies. For studying leadership practices in ECE, Confucianism, collectivism, and Chinese communism are commonly considered among scholars in mainland China (e.g., Wang & Ho, 2020). Confucianism emphasises the culture of high-power distance and collectivism that shapes the hierarchical structure in ECE; it is the principals' responsibility to make decisions on kindergarten missions, teacher professional development, and recruitment of teachers (Jiang et al., 2016). Meanwhile, the Chinese Communist Party leads the education system including ECE in mainland China. The vast majority of principals are Party members (Walker et al., 2012). Principal leadership is affected by communist ideologies, and moral integrity is highlighted among them (Walker et al., 2012). For instance, the *Preschool Principals' Professional Standards* were issued by the Chinese Ministry of Education in 2015, and kindergarten principals were selected based on a morality-first

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standard. In a word, Chinese culture plays a crucial role in studying principal leadership practices. However, the purpose of this current project was on exploring indigenous ECE principal leadership practices in mainland China. Cultural influence was not investigated due to the scope of the study.

Regarding educational reform policies in ECE, the *National Plan for Medium and Long-term Education Reform and Development (2010-2020)* was issued by the Chinese government aiming to universalise ECE within mainland China by 2035 (State Council of the People's Republic of China, 2018). For achieving the goals, the number of kindergartens surged from 181,251 in 2012 to 291,700 in 2020; concurrently, the enrollment ratio rose from 64.5% to 85.2%, and the total number of children in kindergartens reached 48.2 million in 2020 (Ministry of Education of the People's Republic of China, 2021). Meanwhile, the number of kindergarten teachers surged to 2.91 million in 2020. Although the Chinese government has put considerable effort in developing ECE, the overall quality of ECE raised the researchers' concerns due to financial and personnel qualification issues (Li & Li, 2020). The financial investment in ECE from the Chinese government was only one sixth of that in national compulsory education in 2017, therefore, the average salary of kindergarten teachers is much lower than primary and secondary school teachers (Zhou et al., 2017). Meanwhile, unlike teachers in other school sectors, the professional qualification of kindergarten teachers is worrisome, since even high school graduates who obtain their qualification certificate can teach in kindergartens in mainland China. According to research conducted in 2015, there were only 12.82% of kindergarten teachers and principals who had obtained a

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college degree (Li et al., 2015). As a result, principals are facing a dilemma regarding the increasing needs of qualified personnel due to the boosting number of kindergartens but losing qualified teachers on account of the low socioeconomic status of ECE practitioners (Zhou et al., 2017). Therefore, one of the most important tasks for principals is to improve teachers' professional capacity so as to promote the quality of ECE at the present stage. Due to the limited literature on ECE principal leadership, the finding towards leadership practices which focus on this task is rare. However, the findings in other school sectors offer references on this issue.

Additionally, to ensure kindergarten teachers' professional development, two representative legislations have been introduced by the central government, namely the *Preschool Teachers' Professional Requirements*, and the *Guide for Three to Six Years Old Children's Learning and Development* in 2012. The two legislations suggest that kindergarten teachers should possess certain capabilities to enhance their teaching quality; however, their overall professional competence is inadequate to implement the current curriculum which emphasises children-initiated learning rather than teachers' instruction (Zhang & Zhu, 2017). The opportunities for teacher professional development in kindergartens are mainly embodied in teacher training programmes organised by the Chinese government, and top-down programmes can hardly meet the needs of kindergartens. School-based PLCs in ECE are suggested as efficient approaches benefiting teacher professional development (Yin et al., 2019). Therefore, it has been necessary to examine PLCs for teacher professional development in ECE in mainland China.

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Apart from the policies in ECE, the research on parental satisfaction with ECE services in mainland China shows that more efforts should be made to promote equity, equality, and social justice in the context of ECE (Hong et al., 2020). Moreover, the increasing demand of high quality ECE can be foreseen due to the Third Child policy that has been issued by the Chinese government since May 2021 to stimulate the population increase. In a word, it is imperative to enhance teacher's professional development in ECE in mainland China. As another key stakeholder in kindergartens, principals play vital roles in improving teachers' teaching and learning. However, it is seldomly known how kindergarten principals, in general, support teachers' professional learning, especially on PLCs in mainland China. There is a dearth of research on principal leadership in ECE and the leadership practices which impact PLCs in mainland China.

1.2 Rationale of the Project

Reviews of international research indicate to school leadership being a significant predictor of the psychological, physical, and social environments and conditions in which teaching and learning occur, thereby impacting students' motivations, expectations, attitudes, and conduct in the classroom and so helps determine student outcomes (Day et al., 2020). Meanwhile, the important role that school principals hold in contributing to school improvement and student achievement from various aspects has been examined by scholars in different cultural contexts (e.g., Gurr & Day, 2014; Leithwood, 2012; Liu & Hallinger, 2015; Robinson et al., 2008). However, these

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findings are based on other schooling sectors rather than ECE settings. The existing educational leadership theory corpus lacks contextual relevance and fails to recognise the intricacies and realities of leading in ECE settings (Rodd, 2013). Comparing with the studies conducted in primary and secondary schools, the academic literature on principal leadership in ECE is greatly under-represented (Bush, 2012). The research on principal leadership in ECE in mainland China is limited and almost all has been written in Chinese. Hence, it has been imperative to investigate principal leadership practices in ECE especially with regard to how successful principals enact their leadership roles in the current stage in China.

Furthermore, research confirms that PLCs are powerful models that can promote and sustain school improvement (Lee & Kim, 2016). Meanwhile, the critical role that principal leadership plays in the development and sustainability of PLCs have been identified in different cultural contexts (e.g., Harris & Jones, 2017; Qian & Walker, 2020; Vanblaera & Devos, 2016). For instance, Qian and Walker (2020) suggested that for achieving effective and sustainable PLCs, Chinese principals should establish a collaborative and supportive learning environment within schools for the professional development of teachers. However, the knowledge base on principal leadership, PLCs, and the impact of principal leadership on PLCs, has drawn predominantly on studies which have been carried out in the school sector in Western contexts (Hairon & Tan, 2017). Moreover, the empirical evidence towards the relationship between leadership practices and PLCs in ECE is sparse in the context of mainland China. Therefore, the primary aim of this research project was to address this research gap by investigating

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successful principal leadership practices and their impacts on the factors of PLCs in ECE where there is great potential to be improved. Besides the theoretical implications, the necessity of conducting the research in the ECE context has been introduced in the previous section considering its practical implications on improving the quality of ECE in mainland China.

For achieving the aim of this current research project, the literature on principal leadership, PLCs, and the impact of principal leadership on PLCs are reviewed in Chapter Two to identify the research gaps. Compared to studies conducted in the school sectors, the research on principal leadership in the context of ECE is still in its infancy stage and most of the studies are dominated by scholars from Finland (Fonsén & Soukainen, 2020), Australia (Waniganayake, 2014), and New Zealand (Denee & Thornton, 2018). The existing studies in ECE revealed the enactments of principal leadership and reinforced the positive effects of principal leadership on teacher learning and student outcomes (e.g., Heikka et al., 2021b). However, it is rare to find empirical research which has been conducted on principal leadership enactments in ECE in mainland China. Besides the research gap in principal leadership, most of the theoretical knowledge base of PLCs has generated from the Western context (Stoll et al., 2006). Although the implementation of teacher collaboration on professional development has a long history in mainland China, the theoretical exploration on PLCs is still in its beginning stage and far from being mature (Qiao et al., 2018). However, the essence of PLCs in ECE was not examined in this research project due to the scope of the research, but it should be investigated in the future.

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Furthermore, scholars solely adopted either qualitative or quantitative methods to investigate the relationship between principal leadership and PLCs. Most of the studies implemented quantitative methods (e.g., Keung et al., 2020; Zheng et al., 2019), and only one qualitative study was found in the literature (Qian & Walker, 2020). For enhancing the comprehensiveness and validity of research findings, mixed methods were adopted in this project. Meanwhile, for reducing the strong reliance on either teacher reports (e.g., Yin & Zheng, 2018; Zheng et al., 2019) or principal reports (e.g., Qian & Walker, 2020), the current project collected data from both teachers and principals in ECE in China. A detailed discussion of the methodology is described in Chapter Three.

In a word, the researcher planned to explore the indigenous successful principal leadership practices and the impact of these leadership practices on PLCs in mainland China. During the process of empirical exploration on the two constructs, a successful principal leadership instrument in ECE was established and verified concurrently. It was expected that the project would contribute to the knowledge base of principal leadership in ECE in mainland China. Meanwhile, the instrument generated in the project will be of benefit to future research in this field. Regarding the practical implication of the current project, as introduced in the previous section, ECE in mainland China is experiencing large-scale expansion and its overall quality is challenged by less qualified personnel. The project would benefit policy makers and kindergarten principals by indicating certain leadership practices that effectively impact teacher collaborative professional learning for school improvement in practice in ECE

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in mainland China.

1.3 Research Objectives and Research Questions

As mentioned in Section 1.2, the aim of the current project was to investigate successful principal leadership practices and their impacts on the development and sustainability of PLCs in ECE in mainland China. For accomplishing the research aim, the researcher explored indigenous principal leadership practices in ECE from the perspectives of both principals and teachers and concurrently established the leadership model. At last, it revealed the principal leadership practices which impact PLCs positively.

The following research questions were utilised in order to achieve the project:

1. What are the successful principal leadership practices perceived by principals and teachers in ECE in China?
2. To what extent do successful principal leadership practices impact PLCs?

In general, the research context, research rationale, and research objectives and questions have been introduced above. An overview of the thesis is outlined in the next section.

1.4 Overview of the Thesis

This thesis consists of eight chapters. It has begun with this chapter that introduced the research topic and portrayed the context of ECE in mainland China. Both opportunities and challenges have been provided to ECE professionals during the process of implementing a series of educational reforms for improving the ECE quality in the current stage in China. Then, the researcher identified the imperative stance for

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conducting the research by clarifying the aims of this project, stating the research problem, and presenting the research questions.

A detailed literature review is conducted in Chapter Two based on the research objectives. The broader theoretical and empirical background for school principal leadership is provided in Chapter Two that is organised into three parts. The first part discusses the effective models of school leadership in other schooling sectors and ECE from the international literature to the literature in China, and the effects of school leadership on teaching and learning in general. The second part reviews the essence and significance of PLCs as well as the school conditions for building PLCs effectively both in other schooling sectors and the ECE sector. Part Three examines the positive role of principal leadership on facilitating PLCs. Chapter Two concludes with the conceptual framework that investigated successful principal leadership and its impact on PLCs and the research questions identified in order to accomplish the research project.

The design of the methodology is discussed in Chapter Three which begins with a discussion on the philosophical assumption of the research project. The interpretivism paradigm was chosen for the research and a mixed methods approach was adopted as the research design. This is followed with details on the selection of participants and on the data collection and analysis. The chapter concludes with reflections on methodological concerns, which highlights the role of the researcher, trustworthiness, and ethical considerations.

Chapter Four and Chapter Five present the findings corresponding to the two research questions. The findings in the qualitative phase, results in the quantitative

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phase, and the results synthesis which are organised by the two research questions. A discussion of the findings is carried out in Chapter Six following the same format in the findings Chapters. The research project is concluded by indicating its implications and directions for future research direction (Chapter Seven) as well as the existing limitations (Chapter Eight). Finally, a brief conclusion of the whole thesis is given in Chapter Nine.

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Chapter Two: Literature Review

This chapter aims to review the relevant literature on school principal leadership, professional learning communities (PLCs), and the impact of principal leadership on PLCs. The review has been carried out by following the thread which is from international studies to those in China and eventually zooming into the field of early childhood education (ECE) in the international context and then in China. Finally, the research gaps and the conceptual framework underpinning the project are identified at the end of this chapter. The first section focuses on reviewing the theories and theoretical models of school principal leadership which was one of the major constructs of the project.

2.1 Principal Leadership

Research on principal leadership has asserted that school leaders have a strong influence on their teachers and the learning environment in their schools (Leithwood et al., 2008; Qian & Walker, 2020). Given that abundant empirical evidence (e.g., Leithwood et al., 2020) has revealed a set of core generic school leadership practices from the basics of successful leadership, this section will review the major theories of school leadership in both the international literature and Chinese indigenous studies. Then, there will be a focus on reviewing principal leadership in the ECE sector, especially studies which have been conducted in mainland China.

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2.1.1 Principal Leadership in the International Literature

School leadership research has a history of more than six decades; it can be traced back to the early 1960s, when, in those years, researchers started to focus on the issues of educational administration for school improvement (Hallinger & Chen, 2015). Then, the research focus shifted to school leadership in the early 1990s and since then, leadership research has flourished as a respected field until present time (Hallinger et al., 2020). The knowledge on school leadership has accumulated tremendously since the 1980s, and three distinctive school leadership theories were formed: instructional leadership, transformational leadership, and distributed leadership. The leadership models offer various lenses for investigating leadership practices from different perspectives. Therefore, it has been important for the researcher to review the dominant theories and theoretical models first in order to set up a consolidated foundation for the project.

2.1.1.1 Instructional Leadership (IL)

In this section, the origin and development of principal IL are briefly reviewed. Specifically, the conceptual definition and models of IL are introduced. Meanwhile, the significance of IL is demonstrated by the discussions among scholars. Lastly, the debates on its shortcomings are presented.

The theoretical development of IL has experienced several phases due to the changing socio-political context towards education and the proposed expectations for school leaders in the USA and the UK (Hallinger & Wang, 2015). The origin of

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principal IL can be traced back to the middle of the twentieth century, when American scholars inspired "school principals to be instructional leaders rather than just administrators" (Corey et al., 1951; Willey, 1942, as cited in Hallinger et al., 2020, p. 2). Although this proposition caused tension between the real practices of school principals and expected practices of the instructional role that prioritises teaching and learning improvement (Hallinger, 2003), the practice orientated debates set up a foundation for future studies on school principal leadership both academically and practically (Hallinger & Wang, 2015). After this era, IL as a theoretically grounded concept emerged from the substantial empirical studies during the "effective school movement" in the USA and the UK in the early 1980s; concurrently, there were several notable researched-based models established (Hallinger, et al., 2020). Hallinger and Murphy's (1985) model will be introduced later in this chapter since it has been the most frequently adopted in empirical studies (Hallinger & Wang, 2015). With education policy shifted to school restructuring and teacher empowerment in the USA and the emergence of TL in Canada in the 1990s, TL gradually started to eclipse IL in the educational leadership research field during that decade, which assumed that school principals directly engage in teaching and learning (Hallinger, 2003).

In the beginning of the new millennium, IL regained the spotlight among scholars under the influence of the global accountability movement and the empirical evidence from reviews, such as Robinson et al.'s (2008) meta-analysis which affirmed the significance of principals' IL on student learning (Hallinger et al., 2020). In the late 2000s, IL was reincarnated as 'leadership for learning' that "reframes IL as a distributed

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process focused student learning, but which also designs the school organization for success, and builds the capacity and commitment of teachers" (Hallinger et al., 2020, p. 9). In general, IL has been accepted as a dominant model in educational leadership research internationally, which developed from having a practical perspective that consists of concrete actions relating to teaching and learning. Meanwhile, the most recent review has shown that IL is underexplored in the Chinese educational context. Therefore, there is a need for scholars to examine the Chinese understanding and enactments of IL so as to contribute to the international knowledge base.

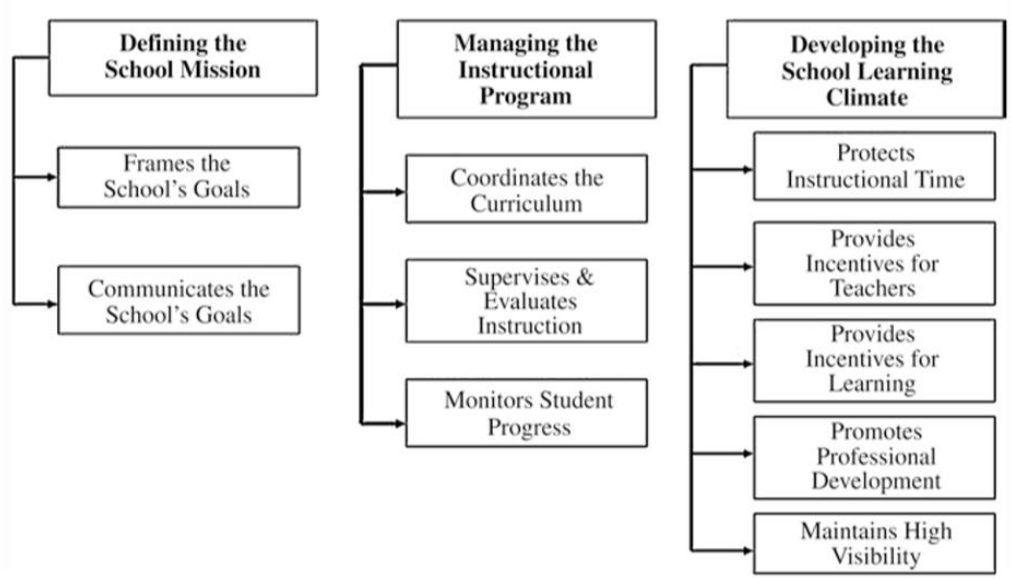
As stated previously, Hallinger and Murphy's model has been most commonly applied among the school leadership studies internationally (Hallinger & Wang, 2015). The model, therefore, is introduced here for elaborating the conceptual definition of IL. According to Hallinger and Murphy (1985), the IL model has three dimensions: defining the school's mission, managing the instructional programme, and promoting a positive school learning climate. The three dimensions consist of ten functions which are demonstrated in the following figure (see Figure 1). Meanwhile, the research instrument Principal Instructional Management Rating Scale (PIMRS) was developed based on the model (Hallinger & Murphy, 1985), which has been adopted in more than 500 empirical studies (Hallinger & Wang, 2015). Moreover, Hallinger (2005) reconceptualised IL by suggesting that instructional principals should "take a more active hands-on role in organizing and coordinating instruction" rather than be "a forceful top-down approach focused on instructional improvement" (p. 235). With the evolution of the theory of IL, scholars have reached a consensus that for improving

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student outcomes, school principals should focus on enhancing teaching and learning quality (Boyce & Bowers, 2018; Hallinger & Kovacevic, 2019). Hence, the significance of IL is reviewed below.

Figure 1

Instructional Leadership Model by *Hallinger and Murphy (1985)*



Towards the significance of IL, it was proposed as a primary strategy for principals in most contexts to master on the purpose of supporting developing teacher capacity and school learning activities based on ample empirical studies compared with TL and DL (Day et al., 2011; Hallinger, 2011; Leithwood et al., 2017). Importantly, IL was recognised as being the concept with longest history, which links leadership and learning (Bush et al., 2018). Moreover, IL is also perceived as being a more effective strategy in improving teacher learning and student achievement; for instance, Robinson and colleagues' meta-analysis identified that the average effect of IL on student achievements was four times that of TL (Robinson et al., 2008). Although IL has been

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playing a predominant and enduring role in the research field of school leadership over a half century, it received criticisms from scholars. Hallinger (2003) commented that IL "focused too much on the principal as the centre of expertise, power and authority" (Hallinger, 2003, p. 330). Consequently, there is a tendency that the leadership roles of leaders in other levels such as middle leaders are ignored or underplayed (Bush et al., 2018). However, the theory of IL experienced its transition in the twenty-first century by addressing its weaknesses. Hallinger and Heck (2011) stated that IL was reincarnated as 'leadership for learning' which suggests a broader conceptualisation incorporating the features of IL, TL, and DL (Hallinger, 2011). The focus of IL shifted from teaching-centred practices to support learning (Rhodes & Brundrett, 2010). Moreover, based on the model of leadership for learning proposed by Hallinger (2011), the author claimed that "principals should seek to share leadership and empower others" (p. 138). This perspective counteracts the principal centric approach of IL model by stressing shared and distributed leadership.

To sum up, these debates IL are still perceived as being effective strategies for school leaders in improving teacher learning and student achievements by scholars (e.g., Day et al., 2016; Hallinger, 2011). For instance, a recent study carried out by Day and colleagues (2016) in improving primary and secondary schools in England reveals that "principals and key staff were positive about the role of IL strategies in promoting and sustaining the academic standards and expectations in their schools" (Day et al., 2016, p. 231). The role of school principals was originally emphasised by IL (Gumus et al., 2018), and TL theory also focuses on principals' role but in a different vein. The details

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of TL are reviewed in the following section.

2.1.1.2 Transformational Leadership (TL)

The concept of TL is introduced in this section by following its historical development along with its conceptual definition and models. Similarly, the significance of TL is discussed. Lastly, the criticisms towards this concept are reviewed.

The theory of TL did not originate in the educational setting. A three-dimension TL model was developed by Bass (1985) in the industrial and military context, which contains "vision building, providing individual support, and providing intellectual stimulation" (as cited in Geijsel et al., 2003, p. 230). Leithwood and colleagues introduced TL in the education field in the early 1990s by defining TL as "leadership that enhances the individual and collective problem-solving capacities of organizational members" (Leithwood et al., 1994, p. 8). Moreover, the TL model was identified, which consists of three dimensions: set directions, develop people, and redesign the organisation (Leithwood et al., 1999). Then, managing the instructional programme was generated as the fourth dimension from the review of TL research in schools from 1996 to 2005 (Leithwood & Jantzi, 2005). Moreover, the authors emphasised that transformational leaders influence their teachers not by exercising power over them but through them (Leithwood & Jantzi, 2005). However, the fourth dimension TL model integrated the IL and TL assumptions by incorporating practices such as providing instructional support, monitoring school activities, and establishing effective practices (Leithwood & Jantzi, 2005). Meanwhile, scholars highlighted the fact that "successful

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school leadership must incorporate an educational focus that is lacking from the TL model" (Hallinger, 2011, p. 131).

Along with the development of its theoretical model, TL claims that a relatively small set of leadership practices can increase organisational members' commitment and effort for achieving organisational goals (Leithwood & Sun, 2012). Moreover, Marks and Printy (2003) argued that "transformational leaders motivate followers by raising their consciousness about the importance of organizational goals and by inspiring them to transcend their own self-interest for the sake of the organization" (p. 375). This argument was built up by Leithwood and Sun (2012) by claiming that when school leaders exercised TL, adequate support is given to organisational members to make them feel highly engaged and motivated by the inspirational organisational goals which are associated with the values that they strongly believe. Furthermore, school leaders enact TL practices by exerting positive influence on organisational members' capacities that are crucial to their performance (Leithwood & Sun, 2012). Based on these natures, it seems harder to predict the direct influence of TL on student learning outcomes compared with IL. However, a bunch of studies further affirmed the significance of TL in school processes and outcomes, internal states of teachers, and student achievement (e.g., Leithwood & Jantzi, 2005; Leithwood & Sun, 2012). The details are discussed below.

In Leithwood and Sun's (2012) meta-analysis of TL effects, the evidence revealed that the overall effects of TL practices on school conditions and teachers' internal states and behaviours were moderate, significant, and positive. These results

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showed that TL contributed significantly to the variables, such as improved instruction and teacher effectiveness, which enabled teaching and learning. Additionally, the study found that TL practices exerted positive and significant impact on student achievement, but the effect size were small. Apart from this recent empirical evidence, Bush et al. (2018, p. 1251) claimed that "When transformational leadership works well, it has the potential to engage all the stakeholders in the achievement of educational objectives". In short, TL offers school leaders a comprehensive normative approach by focusing on the process of influencing the school outcomes rather than on the nature or direction of those outcomes (Bush et al., 2018). However, it has been criticised by scholars due to the following reasons. Firstly, TL requires teachers to be adherent to the leader's value that is more likely to be accepted by principals than teachers, which is considered as a vehicle for control over teachers (Chirichello, 1999). Secondly, the validity of the transformational model is questioned since the transformational language is commonly adopted by governments to require or encourage the implementations of certain policies, "the process is political rather than genuinely transformational" (Bush, 2011, p. 86). Nevertheless, when the goals of leaders and followers align to the point where it is feasible to restart a cordial relationship and a true convergence leading to shared choices, TL has the ability to involve all stakeholders in the attainment of educational objectives (Bush et al., 2018).

In conclusion, TL is conceived as being an irresistible image of best practices among the school leadership models (Hallinger, 2003). Generally, the positive effects of TL practices have been tested and proved in multiple aspects for leading school

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restructuring and improving teacher commitment (Leithwood & Jantzi, 2005). However, scholars have realised that a combination of TL and IL practices are more powerful than the practices related to either IL or TL (Mark & Printy, 2003). Thus, an integrated leadership model is in need for scholars to be able to explore. Due to the content relevance, a detailed discussion towards the integration of the existing school leadership models has been carried out after reviewing the theory of DL which is discussed in the following section.

2.1.1.3 Distributed Leadership (DL)

In this section, the DL concept is introduced by following the same patterns with the previous two leadership theories including its theoretical development, existing models, along with its significance on teacher learning and student achievement. At last, the shortcomings of the DL theory are reviewed, which indicates future research directions for scholars.

There were abundant academic articles and books published during the last two decades towards DL. Among the literature, Gronn (2002) established the concept of DL which was based on purely theoretical exploration. Then, the conceptualisation of DL was developed by Spillane et al. (2004) based on their empirical studies, which has defined leadership practice as "a product of the interactions of leaders, followers, and their situation, acknowledging that people can move in and out of leadership roles regardless of position" (as cited in Diamond & Spillane, 2016, p. 148). A practice-centred model was established by Spillane (2006, p. 6) emphasising that "collective

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interactions among leaders, followers, and their situation are paramount". This influential model highlighted DL not only through the comprising multiple types of leaders but also the leadership practices generated from the interactions (Tian et al., 2016). Gronn (2009) proposed a hybrid model of DL based on Spillane's model and argued that the hybrid model was more appropriate to define DL since it integrated different sources of agency constituting more holistic patterns of leadership, such as individual agency and the collective forms of agency. Despite the fact that models have provided theoretical foundations for scholars for past decades, DL has evolved with the changing of time and contexts. In a recent review, Diamond and Spillane (2016) claimed that conceptual, analytical, and practical frameworks along with study operations and measures are needed in order to empirically observe DL in the future.

The significance of DL cannot be ignored among the existing school leadership theories. Although DL is a comparatively new arising theory in the field of school leadership, it has attracted accelerating attention scholarly and become the most fashionable model since the beginning of the new millennium (Seong, 2016). As Harris (2010) has stated "it represents one of the most influential ideas to emerge in the field of educational leadership in the past decade" (p. 55). The rationale underpinned the distributed perspective of leadership is that "leadership is too complex to be handled purely through solo leadership" (Bush et al., 2018, p. 1248). Moreover, scholars believe that school learning outcomes are more likely to be enhanced by expanding leadership density (Bush & Glover, 2014). In addition, Leithwood et al. (2020) in their recent literature review stressed the importance of DL by stating "school leadership has a

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greater influence on schools and students when it is widely distributed" (p. 12). Meanwhile, DL features in two claims of the seven strong claims about successful school leadership. Apart from that, Hallinger and Heck (2011) found DL positively affected the change in school improvement capacity and eventually in student learning growth. Specifically, DL significantly enhanced student performance in mathematics and reading, but through indirect ways (Tian et al., 2016).

To sum up, the contribution of Gronn and Spillane's work is revolutionary, and the leadership research started to focus on the conjoint practice rather than individuals. Although scholars debated that "distributed and hierarchical forms of leadership are not incompatible" (Harris, 2005, p. 167), DL could be implemented successfully under the permission of formal leaders. For achieving DL, school principals should provide active support in order to nurture the conditions for DL to occur (Hopkins & Jackson, 2002). As Harris (2013, p. 50) suggested "distributed leadership has the potential to positively influence organizational outcomes and individual performance but only under the right condition". Moreover, school principals have been considered as "important 'gate keepers', who either encourage of discourage others from leading and participating in organisational changes" (Tian et al., 2016, p. 153).

2.1.1.4 An Integrated Perspective of School Principal Leadership Theories

After reviewing the three predominant school leadership theories, both the significance and limitations towards the theories have been revealed respectively. The era of defending which leadership model is the most significant has been terminated

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(Hallinger, 2005). Instead of it, the analysis on the effects of these models and practices as well as the areas they impact the most is arising (e.g., Tan et al., 2020). The root of this shift could be explained by a claim from Marks and Printy (2003) who stated that the real-life work of school principals is more likely to encapsulate different leadership models. Therefore, for better investigating principal leadership practices there has been a need to explore the literature on the integrated model of school principal leadership.

As for the integrated models, Robinson et al. (2008) proposed the integration of IL and TL since the results of their review suggested that the functions of the two models tend to incorporate with each other (Robinson et al., 2008). In addition, Gedik and Belliba (2015) stressed the significance of distributed perspective towards IL. They proposed the need for school principals to distribute leadership by involving teachers in the decision-making process towards important instructional issues. Since IL has been reincarnated into 'leadership for learning' in recent years, a four-dimension model was established by incorporating the features of TL, IL, and DL on the basis of abundant international evidence (Day et al., 2011). The model was recognised as being the criteria of successful principal leadership, which consists of four dimensions: (1) setting directions; (2) developing people; (3) restructuring the organisation; and (4) managing the instructional programme (Day et al., 2011; as cited in Zheng et al., 2016, p. 523).

Furthermore, another widely cited successful school leadership model was developed by Leithwood in 2012. The author named the model the Ontario leadership framework (OLF) which consists of four major domains: set directions, build relationships and develop people, develop organisation to support desired practices, and

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improve the instructional programme (Leithwood, 2012). These four-domains of leadership practice were endorsed continually by empirical evidence (e.g., Hitt & Tucker, 2016; Liu & Hallinger, 2018; Sun & Leithwood, 2017). A recent review on successful school leadership credited the model and the 19 practices included in the four domains (Leithwood et al., 2020). Meanwhile, the authors suggested adding 'Participate with teachers in their professional learning activities' into the effective leadership practices by acknowledging a key finding from Robinson et al.'s (2008) widely cited review of leadership research. Therefore, 20 practices within the four domains were proposed as the successful leadership practices in Leithwood et al.'s (2020) review.

Overall, for better accomplishing the purpose of the current research project which was aiming to investigate the impact of principal leadership on PLCs, an integrated model of school principal leadership seemed to be more appropriate. For considering that any successful leadership practice is contingent in different contexts (Hallinger, 2018), the project may contribute to the literature with a more comprehensive and indigenous leadership model for studying the principal leadership practices in China, specifically in the Chinese ECE context.

After reviewing these dominant theories and the relatively theoretical models in the international literature, they offered a solid foundation for studying school principal leadership. However, Leithwood et al. (2010) asserted that the enactments of principal leadership are shaped by cultural and social contexts. For studying principal leadership in China, there needs to be a more integrated and indigenous model based on the unique

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characteristics of the Chinese context explored. Moreover, the existing models reviewed were all developed based on the empirical data collected in primary and secondary schools in Western countries. The applicability of these theoretical bases can be questioned as to whether they could be adopted in the ECE sector. For echoing the above concerns, it has been necessary to review the existing literature in principal leadership in China in the first place. Additionally, the relative research conducted in the ECE sector both internationally and locally needed to be reviewed for formulating a more appropriate model for the research project. Therefore, the next section focuses on reviewing the Chinese principal leadership.

2.1.2 Principal Leadership in China

As mentioned in the previous section, school leadership research has been dominated in Western societies, such as in the USA (56%), Canada (4%), Europe (10%), and Australia (5%) (Hallinger et al., 2020). It is known that school leadership is context-depended (Hallinger & Leithwood, 1996). Compared to Western contexts, Chinese society offers a quite different cultural and political environment for school principals. According to reviews conducted by Walker and Qian (2018), the empirical research on principal leadership in China is still in its beginning stage. A great portion of the literature published in China on principal leadership were prescriptions or commentaries (Walker & Qian, 2015). Although there is a relatively small number of international publications, they were mostly empirical studies which followed Western research conventions (Walker & Qian, 2018). There is great demand for more qualified

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empirical studies in order to establish a firm foundation for leadership research in China.

Therefore, for better construction of the theoretical base of this current research project, the focus of this part is on reviewing the conceptual, empirical, and review studies, especially on the findings related to the conceptualisation and indigenous enactments of school principal leadership practices in China. For keeping the alignment of the writing structure, the review is also conducted by following the three distinctive school leadership models, namely IL, TL, and DL.

2.1.2.1 Instructional Leadership (IL) in China

The focus of this section is reviewing the studies related to the enactment of IL in mainland China. Then, the Chinese IL model is introduced. At last, the unique features and the effects of Chinese IL are discussed.

The concept of IL has been introduced into mainland China for several decades, and it is broadly utilised among Chinese scholars (Qian et al., 2017). The Chinese term for IL is *jiaoxue lingdao*, and there have been plenty of dissertations and journal articles written in Chinese related to this concept during 1998 to 2016 (Walker & Qian, 2018). However, most Chinese papers are prescriptions and commentaries, lacking empirical evidence. For instance, Sun (2009) recommended that school principals as instructional leaders should act as administrative managers, curriculum executives, and leaders of teaching and research. This type of papers only provides recommendations to school principals on how they are expected to display themselves as instructional leaders, rather than their enactments of IL in real-life practices (Qian et al., 2017). For the

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empirical Chinese studies, according to the most recent review conducted by Walker and Qian in 2018, Chinese scholars tended to frame their empirical studies by adopting imported IL models and instruments, and research designs explicitly. For instance, Ma and Wu (2013) examined the indigenisation of Hallinger's (1983) PIMRS and concluded that the imported notions were attractive to school principals, but they considered not all of the notions were feasible.

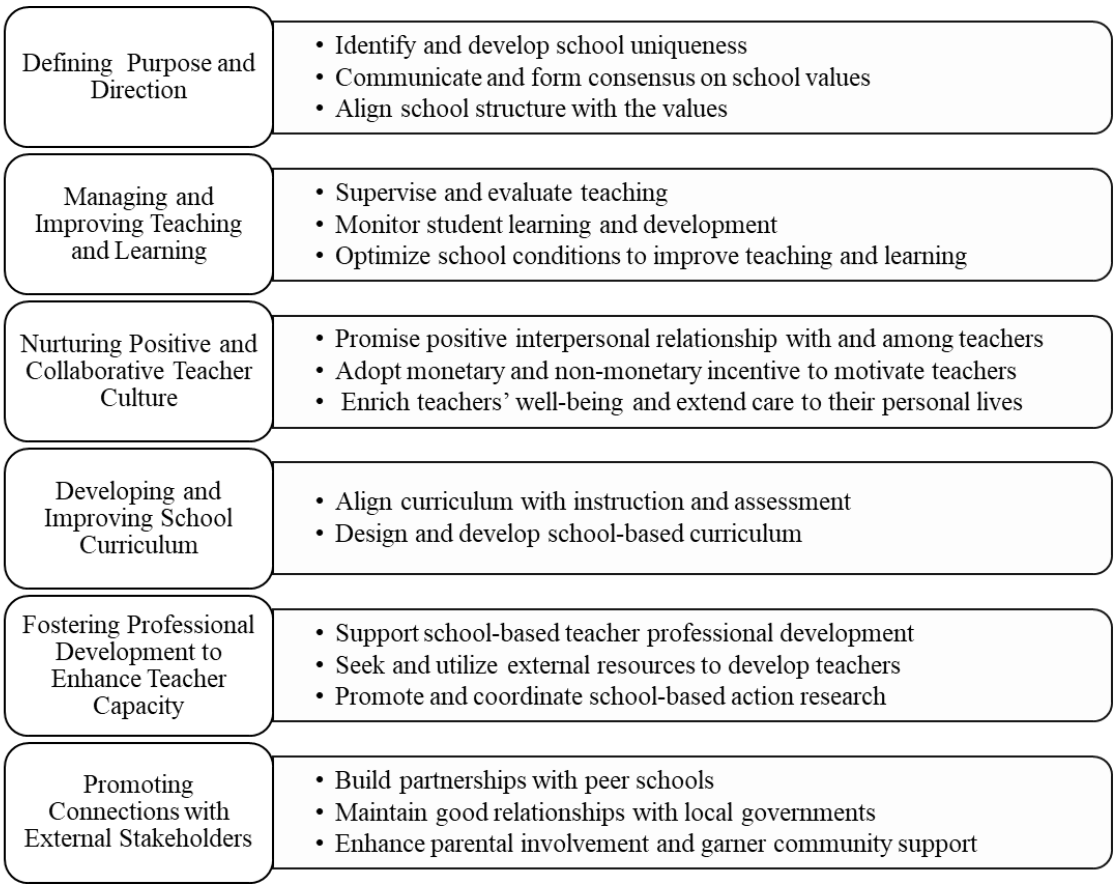
Despite the Chinese literature, the English literature on Chinese IL is limited. There are several empirical studies that explored the influence of the societal context on IL and establishing a Chinese IL model (e.g., Qian et al., 2017; Walker & Qian, 2020; Wei et al., 2018). In the most recent qualitative study conducted by Walker and Qian (2020) among Chinese primary school principals, the authors refined the initial model established by Qian et al. (2017) by collecting more holistic data. The modified model consists of six dimensions, which is displayed in Figure 2. Meanwhile, the study revealed that although Chinese principals perform the four dimensions of IL identified in Western contexts (Hallinger & Murphy, 1985), their leadership enactments are different due to the specific societal context. The authors summarised the particular features of Chinese IL into six propositions, including: 1) Chinese principals have detailed knowledge of classroom teaching and work closely with teachers on instructional improvement; 2) the organisational structure benefits IL, such as the embedded TRGs; 3) the expert teachers and the school leadership team share the IL with principals; 4) principals prioritise teacher capacity development through building up a supportive environment for teachers; 5) principals are expected to establish the

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external networks with other stakeholders; and 6) principals are required to fulfil the seemly contradictory expectations which are achieving higher student exam scores and student holistic development (Walker & Qian, 2020). Although this study has contributed to the understanding of Chinese IL, the findings were solely generated from the self-reported interviews conducted with primary school principals; further studies, therefore, are needed to involve other members in schools in order to establish a more comprehensive vision towards the practices identified (Walker & Qian, 2020).

Figure 2

Model of instructional leadership in China (Walker & Qian, 2020, p. 6)



Nevertheless, the six propositions are supported by other scholars. For instance, Zheng

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and his colleagues (2019) found that Chinese principals benefit from the teaching-research groups (TRGs) embedded in the schools' structure by taking the TRGs as platforms to facilitate teacher collaboration and promote teacher development, which credits the proposition of organisational routines facilitating IL (Zheng et al., 2019). The findings towards developing teachers' capacity have been reinforced in a study conducted in two secondary schools in Haidian District of Beijing which places strong emphasis on teaching quality since teacher's teaching quality is still considered by both internal and external stakeholders as being the baseline of the schools' success (Lai et al., 2017). It seems that secondary school principals have a strong tendency to implement IL strategies in order to accomplish school improvement through improving teaching quality (Lai et al., 2017). For the proposition of distributed IL, Chinese principals set the directions for school development, then middle leaders refine the detailed plan, and finally, the TRGs heads transmit the plans and ensure they could be implemented by teachers successfully (Lai et al., 2017; Wei et al., 2018).

Despite the studies on the Chinese IL model and the features of leadership enactments among Chinese principals, research on the impact of IL has only emerged in recent years. However, the empirical evidence towards it is scarce. For instance, the impact of IL on student learning achievement was investigated by Hou et al. (2019) among secondary high schools in northeast China. The quantitative study has affirmed both direct and indirect influence of principal IL on students' college entrance scores. Other studies mostly focused on the effects of IL on teachers' professional learning, such as the studies carried out by Liu and Hallinger (2018) and Zheng et al. (2019).

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Both studies adopted a quantitative research method; the previous one found principal IL exerted moderate direct and indirect effects on teacher professional learning (Liu & Hallinger, 2018). Additionally, Zheng et al. (2019) revealed the significant effects of IL on the professional learning community components among Chinese primary schools. This study is further discussed in the section focusing on the effects of principal leadership on PLCs later.

Overall, Chinese principals' IL practices are similar to those core leadership practices enacted elsewhere, but the unique features of Chinese IL are formed by the societal context in mainland China (Walker & Qian, 2020). Due to the significance of IL, Chinese principals tend to be expected to be instructional leaders for enhancing teaching qualities (Lai et al., 2017). However other types of school leadership have not been omitted among scholars. Chinese TL and DL are introduced in the following sections.

2.1.2.2 Transformational Leadership (TL) in China

In this section, studies related to Chinese TL are reviewed in the following aspects: the theoretical development and enactments of TL in China, the Chinese TL model, and the effects of TL.

TL was introduced to China in the 1990s (Yu & Zhang, 2011). Since then, the concept of TL has been explored extensively in different sectors; most of the studies were oriented in the business sector (Liu, 2018). In Liu's (2018) systematic review on the TL studies written in Chinese between 2005 to 2015, only 30 of them were from

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educational settings among the 233 studies reviewed. This review indicates the lack of research on TL in Chinese school contexts (Li, 2020). For the types of Chinese literature, they show similar patterns with IL. Specifically, the theoretical studies were mainly commentaries and experience sharing, which demonstrated the theoretical understandings of TL among Chinese school principals. As for the empirical studies, the utilisation of the imported frameworks and instruments were preferred to Chinese scholars (Walker & Qian, 2018). For the literature in English, the Chinese TL model was established by Li and Shi (2008) in the business sector, which consisted of four dimensions: moral modelling, charisma, articulate vision, and individualised consideration. Among these dimensions, moral modelling was considered as being a unique and significant dimension due to the Chinese Confucius culture (Li & Shi, 2008). Although this model was originated in the business sector, it revealed certain unique features of Chinese TL under the influence of Chinese culture, which shed a light on the theoretical understanding of TL in the school context.

The only research on TL enactments in the Chinese school context was carried out by Liu (2013). The author conducted a two-phase study in secondary schools to establish a Chinese transformational school leadership questionnaire. In the first phase, the author collected data among teachers by using an open-ended questionnaire developed based on Leithwood's (1994) TL theory. Then, the content analysis method was adopted to generate high-frequency words related to TL in schools. Consequently, an initial Chinese transformational school leadership scale was created based the perceptions of teachers towards principals TL practices. In the second phase, the newly

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established scale was used to collect data among teachers for principal component analysis, and eventually, there were 29 items extracted for the final TL questionnaire. Among these items, 17 of them were distinctive to the Chinese context (Li, 2020). The study proved that Chinese principals in urban upper secondary schools paid more attention on instructional management, and the other three dimensions (setting directions, developing people, and redesigning the organisation) were conceived as being important components of TL enactments (Liu, 2013). However, this study was only based on the teachers' perceptions towards transformational school leadership. It could have been more reliable if the author had involved multiple perspectives such as school principals' perceptions into the study.

As for investigating the effects of Chinese TL, there are only a few studies found in the literature. For instance, a review of 18 empirical studies conducted between 2010 and 2019 was conducted by Li in 2020. Among the studies reviewed, only three were written in English, and most of the studies were in Chinese. After reviewing this empirical evidence, the author concluded that TL had effects on teachers' commitment, teachers' job satisfaction, and teachers' work engagement both directly and indirectly in a Chinese K-12 context (Li, 2020). Besides this review, Liu (2015) uncovered that TL had a moderate effect on teachers' commitment to change in secondary high schools. For the effects of TL on the student level, Wang (2019) found that principal TL practices, especially on establishing school climates, significantly facilitated students' modernity development within 42 primary and secondary schools in mainland China.

Overall, the accumulated knowledge on the effects of TL in Chinese school

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settings is limited, but the existing studies have demonstrated the effectiveness of principal TL on both the teacher level and the student level. However, research on TL in the Chinese educational setting is still in its infant stage (Liu, 2018). A great amount of high-quality empirical research is in need for establishing a solid foundation of educational leadership research in mainland China (Li, 2020).

2.1.2.3 Distributed Leadership (DL) in China

The development of DL in China is reviewed in this section. Especially, there is a focus on school principal leadership practices in the process of DL enactments.

The concept of DL has been imported in China since 2004, however, this leadership style was not that popular among Chinese scholars compared with their Western counterparts (Feng, 2012). It seems that the research on the distributed form of leadership mainly focused on teacher leadership in China (e.g., Wang & Ho, 2020). There was comparatively rare research conducted on DL in the Chinese context. Feng (2012) commented that one of the main reasons for this phenomenon was the unrevealed significance of DL in the context of Chinese school leadership. For better understanding DL in China, Feng (2012) proposed that the essence of DL is not in the distribution of the leadership role and leadership power, but rather in the distribution of leadership influence. This perception was credited by Western scholars by stating that not only official leaders have the ability to exert leadership influence on activities, but also any school members and even artefacts (Spillane, 2006). Indeed, this leadership style focuses on multiple sources of influence rather than a single influence (Harris,

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2013).

Apart from the Chinese understanding of DL, the emergence of DL in the Chinese school context was revealed by Wang's (2007) case study on understanding Chinese educational leaders' conceptions of learning and leadership. The author found that leaders' conceptions of leadership shifted from task/directive-orientated to motivation/collaborative-orientated (Wang, 2007). Then, for exploring the Chinese DL model, Bunnell (2008) investigated the co-principalship between Chinese and Western principals of the Yew Chuang International School (YCIS) in Shanghai. It found that "co-principalship seems more in line with modern conceptions of school leadership in China than the traditional 'heroic leader'" (Bunnell, 2008, p. 204). However, the findings of this study were constrained to only YCIS. Further studies, therefore, are in need for understanding DL practices among principals in local schools.

Besides the conceptualisation of DL, Zheng et al. (2019) examined the effects of DL on teacher efficacy from the teachers' perspective in primary schools in South China. The empirical evidence demonstrated that DL has indirect effects on teacher's self-efficacy. Meanwhile, trust in principal and teacher job satisfaction significantly mediated these effects. Additionally, the findings highlighted the significance of DL and trust in the principal in the Chinese context. Although the generalisability of the findings is limited, this research has lent credence to the claim that sustainable leadership distribution was crucial to school success in improving teacher capacity (Day et al., 2011).

In summary, there are several studies affirming the necessity of enacting DL

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among Chinese school principals. For instance, Wei et al. (2018) found that Chinese primary school principals empower middle leaders and focus on developing their leadership team due to the large school size. Additionally, Lai et al. (2017) revealed an interesting but common phenomenon that some principals intend to involve teachers in refining the process of implementing new initiatives, but middle leaders with a conservative work style and a paternalistic school culture could hinder the process. Under such circumstances, the leadership strategies adopted by school principals are critical. Therefore, there is a need to identify principal leadership practices in achieving effective leadership distribution.

After reviewing both nonempirical and empirical studies on principal leadership in China, both commonalities and distinctions between Chinese and Western principalship are revealed. Since the literature reviewed in this part are all based on research conducted in primary and secondary schools in China, the findings are not comprehensive enough. However, these empirical studies provide a snapshot of the principal leadership in China, which indicate that Chinese principals possess of a strong tendency to implement the traditional top-down IL under the pressures promoting students' examination performance. Meanwhile, the demands of practicing TL and DL strategies are demonstrated by principals, but the political, cultural, and contextual factors constrained themselves to successfully implement these strategies (see Lai et al., 2017; Qian et al., 2017; Wei et al., 2018). To sum up, Chinese principals and their Western counterparts share a core set of leadership practices, and the distinctions "refer mainly to the different combinations, sequencing or timing of leadership strategies as

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enacted in the Chinese context" (Walker & Qian, 2015, p. 481).

As mentioned previously, the research on principal leadership has been dominated in primary and secondary schools. However, the context of ECE is different from other school sectors. Take Chinese ECE, for example, where kindergarten principals enact their leadership roles in a comparatively different context in which there is much less pressure on examination performance or various subjects' curricula, but under the pressure of high expectations of modern society and parents. Consequently, it has been necessary to review the literature on kindergarten principals' leadership practices to realise whether the knowledge base established in other school sectors could be generated to ECE contexts.

2.1.3 Principal Leadership in ECE in the International Literature

Comparing with the studies conducted in primary and secondary schools, the academic literature on leadership in ECE is greatly under-represented (Bush, 2012). Moreover, there are few theoretically based studies identifying and examining different leadership models and traits among the leadership literature in ECE (Aubrey et al., 2012). Therefore, the literature reviewed in this section is limited. For corresponding to the main theme of this research project, the focus of this section is on reviewing the studies related to the three distinctive leadership styles: IL, TL, and DL. However, there was no study found relating to the transformational leadership. Literature on IL and DL in the ECE context are reviewed in the following parts.

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2.1.3.1 Instructional Leadership (IL) in ECE

IL has been seldom investigated in the ECE context. Meanwhile, the term 'pedagogical leadership' is used mostly instead of instructional leadership. The studies in pedagogical leadership in ECE are reviewed in this part, including its concept, enactment, significance, and limitations.

Pedagogical leadership is proposed by Sergiovanni (1998) as being a more effective alternative in improving schools, which aims at developing intellectual and professional capital for teachers, and social and academic capital for students. Similarly, scholars have found that pedagogical leadership was connected to both teachers' profession capacity building and children's learning in the ECE sector (Heikka & Waniganayake, 2011). However, this leadership theory is an indefinable phenomenon, and its practical application is even more unidentifiable in the ECE field (Fonsén & Soukainen, 2020). Heikka (2013) stated that pedagogical leadership means taking responsibility for shared understanding of the aims and methods of learning and teaching of young children. Fonsén (2013) credited this perspective by claiming that leadership in ECE is determined by the pedagogical core task. Specifically, leaders and teachers are required to be pedagogically qualified and share the vision of high-quality pedagogy in ECE (Fonsén & Soukainen, 2020).

According to the most recent study conducted by Fonsén and Soukainen (2020), various groups of ECE professionals perceived and evaluated the structure of pedagogical leadership to be significantly different. The findings indicated that future studies are in need to develop mutual understanding and structures of ECE pedagogical

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leadership (Fonsén & Soukainen, 2020).

Although, as stated, scholars have reached a consensus about the significance of IL on teachers and children's learning, research on the effects of IL in ECE settings is rare. Most of the literature has focused on exploring perceptions on the enactment of IL (e.g., Heikka, 2013; Waniganayake et al., 2018). Among the literature, only one study conducted by Yin and colleagues in Hong Kong SAR examined the impact of principal IL on teachers' intentions to implement play-based learning (Yin et al., 2021). Therefore, there was a gap for investigating the effects of IL on other personal or school-level variables in the ECE sector.

It can be concluded that after reviewing the literature, research on IL in ECE is in its infancy stage and most of the studies have been primarily conducted in New Zealand, Finland and Australia. For enlarging the knowledge base of IL in ECE, studies are in need to explore the enactments of principal IL along with the effects of IL in the ECE sector in the future.

2.1.3.2 Distributed Leadership (DL) in ECE

DL has been increasingly seen as the leadership model that effectively impacts teacher and student learning in the ECE sector globally (Denee & Thornton, 2018; Heikka et al., 2021b). In this section, the concept of DL in ECE is reviewed along with its enactment and outcomes.

The concept of DL has been applied in the ECE sector among scholars due to its distinctive elements which have a direct resonance with ECE settings (Aubrey et al.,

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2012). In detail, DL has been considered as leadership and spread across organisational members and featured by interdependence and cooperation (Spillane, 2006). Although DL was expected to be effective in ECE workplaces, the interdependence between positional leaders and teachers was hard to achieve in practice (Heikka & Waniganayake, 2011). Similar with findings generated from other school sectors, the role of positional leader is crucial to achieve DL within ECE contexts. For instance, Colmar et al. (2015, p. 104) argued "Distribution does not replace positional leadership structures, and site leaders play an important role in coordinating leadership and developing leadership capacity within the group". For enacting DL effectively in kindergartens, principals (positional leaders) need to empower teachers to participate in leadership, develop relational trust, and supportive structures to facilitate teachers' professional learning (Denee & Thornton, 2018).

Towards the outcomes of DL, according to the studies conducted by Heikka et al. (2021b), the distributed form of leadership positively impacts the professional development of ECE teachers and can facilitate achievement of the goals by supporting pedagogical development and promoting curriculum reform in the ECE context. Although the study affirmed the significance of DL in ECE settings, the link between the positional leaders' DL enactment and teachers' role in leading pedagogical improvement has not been addressed. Therefore, a hybrid leadership style, distributed pedagogical leadership, was proposed to describe the leadership roles of teachers (Heikka et al., 2016). As the main theme of this reported research project focused on the principals' leadership practices, teacher leadership theory has not been discussed in

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this thesis. However, teacher leadership theories can be taken as being useful references when researching the leadership practices of principals.

As the literature previously reviewed, the leadership studies in ECE have mainly been dominated by scholars from Finland (Fonsén & Soukainen, 2020), Australia (Waniganayake, 2014), and New Zealand (Denee & Thornton, 2018). The studies previously reviewed revealed the enactment of IL and DL in ECE contexts. Meanwhile, the research findings reinforced the significance of IL and DL on teacher learning and student outcomes. The contexts of ECE in these countries are different to the Chinese ECE settings due to cultural, political, and structural differences. This indicates a need to know the leadership studies in the Chinese ECE context. Therefore, related studies are reviewed in the next section.

2.1.4 Principal Leadership in ECE in China

The leadership research in the ECE sector in China have mainly focused on conceptualising and investigating teacher leadership among the English literature (e.g., Ho et al., 2019; Wang & Ho, 2020). The research on principal leadership in ECE is limited and almost all are written in Chinese. Meanwhile, both the individual leadership model and generic leadership practices were studied among Chinese scholars. In this part, the Chinese literature is reviewed.

Among the Chinese literature, kindergarten principal IL was investigated by Zhang and Yuan (2018). The authors proposed a four-dimension IL model which consists of vision motivation, leader's charisma, intellectual inspiration, and

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individualised consideration. Moreover, a doctoral thesis examined kindergarten principal leadership enactments and discussed the strategies for promoting leadership among principals (Liu, 2015). Similarly, several master's theses studied the leadership practices of kindergarten principals and proposed suggestions on how to achieve effective leadership (e.g., Tang, 2020; Xu, 2016). In general, these empirical studies were carried out on the basis of imported leadership frameworks, which offered us a preliminary sketch of the principal leadership in ECE in China. However, these generic leadership research studies were constrained to reveal how kindergarten principals influence, but there was no study concerned about the purpose or outcomes of the influence. This has indicated the need to investigate effective principal leadership practices and effects in the field of ECE in China, where there is a scarcity of research and high potential for researching.

Therefore, this current research project investigated principal leadership in the ECE sector in China especially on its impact on teacher's professional learning communities. The leadership inquiry was based on the integration of the leadership theories reviewed in the previous sections. Meanwhile, the adjustments towards the integrated model of principal leadership have been considered according to the special characteristics of the ECE sector in mainland China which was introduced in Chapter One. As another main construct of this reported research project, the concept of professional learning communities is reviewed in the following sections.

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2.2 Professional Learning Communities (PLCs)

Since the recognition of its potential for promoting school improvement, teacher professional development and student learning outcomes (Lomos, 2012; Vangrieken et al., 2015), the concept of PLCs has attracted increasing attention since the 1990s (De Neve & Devos, 2017). The origin, definition, and characteristics of PLCs are firstly reviewed first in this section. Then, the significance of well-established PLCs and school conditions for effectively building PLCs are discussed. The sequence of the literature reviewed is from the international literature to studies in Chinese contexts, and eventually focus on the understanding and implementation of PLCs in ECE internationally and in mainland China.

2.2.1 PLCs in the International Literature

The origin of PLCs can be traced back to the late 1990s. DuFour and Eaker (1998) proposed PLCs as being the educational counterpart to learning organisations introduced by Senge in the business sector. The notion of PLCs encourages teachers' collective activities with peers on effective classroom practices, which added value on traditional workshops that maintains teacher isolation in teachers' professional development (Vangrieken et al., 2017). Afterwards, PLCs were examined as being effective approaches for achieving collaborative decision making, increasing teacher satisfaction, and improving student and school performance under the right conditions (Defour et al., 2006; Lomos et al., 2012).

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Although research on PLCs has flourished in the international literature, consensus on the definition and characteristics of PLCs has not been reached among scholars. The definition of PLCs has varied among scholars from different contexts. PLC was defined as "a group of people sharing and critically interrogating their practice in an ongoing, reflective, collaborative, inclusive, learning-oriented, growth-promoting way, operating as a collective enterprise" (Stoll et al., 2006, p. 223). Moreover, Hipp and Huffman (2010) defined PLCs "as a group of professional educators working collectively and purposefully to create and sustain a culture of learning for all students and adults" (p. 12). The debates on how to define PLCs still exist, but there is a consensus that the essence of PLCs is the collaborative nature in work (Vanblaere & Devos, 2018).

Given its fuzzy conceptualisation, scholars have proposed the main characteristics of PLCs in order to address this issue. For instance, Hord (1997) identified five elements of effective PLCs, which contained shared and supportive leadership, shared values and vision, collective learning and application, shared personal practice, and supportive conditions. Additionally, a more comprehensive conceptualisation of PLCs was proposed by Sleegers et al. (2013), which consists of three dimensions, namely organisational capacity, personal capacity, and interpersonal capacity. Within these dimensions, interpersonal capacity was identified as the core of PLCs, while the other two dimensions were considered as the influential factors of PLCs (Vanblaere & Devos, 2018). Specifically, the characteristics under the interpersonal capacity such as collective responsibility, deprivatised practice, and

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reflective dialogue were suggested as the key features of PLCs. Rather than a key element of PLCs, shared and supportive leadership was classified into the organisational capacity dimension as a factor that posit effects on PLCs. Likewise, scholars suggested that PLCs contain five key characteristics: shared vison and values, focus on learning, reflection or reflective dialogue, de-privatisation of practice, and collaborative activities (e.g., Lee & Kim, 2016; Stoll et al., 2006).

Originally, these characteristics were adopted as the main factors to measure the effectiveness of PLCs. Louis and Marks' (1998) model has been commonly applied among scholars internationally. Moreover, Stoll et al. (2006) supported and reinforced these characteristics in their literature review. Furthermore, the five features were endorsed in the most recent literature review (e.g., Lee & Kim, 2016) and the quantitative meta-analysis of the effects of PLCs on student learning outcomes conducted by Lomos et al. (2012). Therefore, these factors identified in the international literature were considered as the most significant reference for this research project towards the conceptualisation of PLCs in Chinese kindergartens.

With recognition of the significance of PLCs on teacher professional learning and student achievement, the discussions on the 'right conditions' for effectively developing PLCs were rising among scholars (e.g., De Neve & Devos, 2017). Drawing on the literature, several conditions were identified and categorised: firstly, the leadership of the leaders of PLCs and school leaders; secondly, the interpersonal dynamics within PLCs; thirdly, a culture of trust and respect (Vangrieken et al., 2017). Among these conditions, strong and supportive leadership was evidenced to be a vital condition for

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the development and sustainability of PLCs within schools (Harris & Jones, 2017).

Overall, the concept of PLCs, especially the five main characteristics, have been discussed based on evidence mostly generated in Western school contexts. The empirical evidence demonstrated effective PLCs impact teachers' teaching practices positively (Vangeriken et al., 2017) and promote student achievement (Lomos et al., 2012). Although the successful implementation of PLCs can be impeded by factors such as an unclear understanding of the purpose of PLCs and the inadequate time and resources for teacher collaborative learning, the essential role of school principal leadership in creating conditions that nurture a supportive environment was identified (Qian & Walker, 2020). However, PLCs are contingent to different national contexts (Stoll et al., 2006), hence, it has been necessary to review the conceptualisation and implementation of PLCs in China.

2.2.2 PLCs in China

As stated previously, the theoretical knowledge base of PLCs was mainly generated from Western contexts (e.g., Stoll et al., 2006). The empirical evidence on PLCs in China is still scarce, although scholars have made more effort to establish the knowledge base in recent years (Qiao et al., 2018). In this section, the theoretical development and the implementation of PLCs in China are reviewed.

For Chinese researchers, the term PLC was imported from Western countries, but teachers working collaboratively for their professional development in subject-based Teaching Research Groups (TRGs) has a history of seven decades in mainland China

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(Chen, 2020). Scholars argued that the PLCs' doctrines have been deeply embedded in the form of the TRGs in Chinese schools (Wang, 2016). Likewise, the TRGs are the most acknowledged form of PLCs in China as they have been instituted in almost all Chinese schools to structure teachers to be able to work collaboratively, which concentrate on instructional matters and student learning improvement (Qiao et al., 2018). Meanwhile, some empirical evidence has demonstrated that the TRGs share their main characteristics with PLCs in the international literature, such as shared vision and values, collective responsibility, and collaborative cultures among teachers (Wong, 2010; Zhang & Pang, 2016). Meanwhile, the model proposed by Louis et al. (1996) consists of five characteristics: shared vision and values; focus on learning; reflective dialogue; deprivatised practice; and collaboration. This conceptualisation of PLCs has been confirmed in the Chinese context (Qian & Walker, 2020; Yin & Zheng, 2018). The general elaborations of these characteristics were suggested by Qian and Walker (2020), which includes "shared vison and values, focus on learning, reflection or reflective dialogue, de-privatisation of practice, and collaborative activities" (pp. 2-3).

Despite the commonalities, the unique characteristics of Chinese PLCs have been revealed by scholars (e.g., Thomas et al., 2015; Yin & Zheng, 2018). For instance, the evidence has shown that teachers in the TRGs tend to reproduce the 'best' models of teaching practice in their own classrooms (Qiao et al., 2013) causing teachers to be passive leaners (Qiao et al., 2018). Furthermore, the TRGs not only focus on teacher professional development and student learning but also have administrative functions (Qiao et al., 2018). In addition, the teachers in the TRGs pursue a harmonious

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relationship and avoid conflict, which emphasise collective efforts to achieve common goals (Craig et al., 2015). A mixed methods study revealed that although teachers can collaborate easily, their obedience with the mandated requirements for building the TRGs is likely to achieve a superficial collaboration (Zhang & Pang, 2016). Oppositely, Wang's (2015) qualitative study found that genuine teacher learning and collaborations were achieved by a deliberately arranged collegiality rather than an artificially contrived collegiality under the support of mandated institutional structures.

Departing from the unique features of Chinese TRGs, Yin and Zheng (2018) revealed the distinctive traits of PLCs under the Chinese cultural contexts which stressed social harmony and interpersonal relationships. Although the mandated collaborative structure was embedded in Chinese schools, the authentic learning among teachers in PLCs was not ensured (Zheng et al., 2019). Scholars claimed that "The real challenge for PLC practice is to facilitate deep, critical and reflective dialogue among teachers" (Zheng et al., 2019, p. 855). Therefore, the role of school leaders in creating more opportunities to encourage such conversations was highlighted (Qian et al., 2018). Overall, the implementations of school-based PLCs were varied and depended on different conditions, such as organisational structures and supportive conditions, and interpersonal trust among teachers, while these conditions should be arranged by school principals (Zheng et al., 2016).

Except for the TRGs, informal learning groups and networked learning groups were the other two approaches for building PLCs in China (Qiao et al., 2018). However, the studies conducted on these two types of PLCs were limited. In addition, research

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on the impact of PLCs on teacher professional development and student achievements is rare in China. In Wong's (2010) study, the evidence revealed that teachers learn new knowledge and improve their teaching skills through collaborative activities in PLCs. Moreover, PLCs were recognised as being the effective channels for the diffusion of instructional innovations among teachers (Sargent, 2015). Meanwhile, Chinese TRGs have been proved to be the most important element for the success of Shanghai students' performance in the Programme for International Student Assessment (PISA) (Chen, 2020).

To sum up, the implementation of teacher collaboration on professional development has a long history in China, though the theoretical exploration towards PLCs is still in the beginning stage and far from being mature. A similar set of the characteristics of Chinese TRGs with PLCs in the international literature has been identified among scholars (Zhang & Pang, 2016), nevertheless, the unique features of PLCs in Chinese schools are in need of being explored in the future, especially PLCs in ECE settings, as in this research project. Therefore, the international literature on PLCs in ECE is reviewed in the following section.

2.2.3 PLCs in ECE in the International Literature

Compared to the proliferation of research in other school sectors, the empirical studies on PLCs in ECE is rare (Cherrington & Thornton, 2015; Thornton & Cherrington, 2019). In this section, the limited studies will be reviewed by focusing on the characteristics, the supportive conditions, and effects of PLCs in the ECE context.

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Thornton and Wansbrough (2012) conducted a study among ECE leaders and teachers in New Zealand based on Hipp and Huffman's (2010) PLC survey to identify the characteristics of PLCs in ECE. The findings of the study identified a number of characteristics that are significant to the development and sustenance of PLCs in ECE, such as the professional leaders' role in building relational trust, the provision of time and resources for shared reflection, and discussion to enhance teaching and learning, and the opportunities for giving feedback, mentoring, and coaching (Thornton & Wansbrough, 2012). In addition, Cherrington and Thornton's (2015) case study revealed that the characteristics of school-based PLCs in the school sector are also applicable to ECE settings. Specifically, they consist of shared personal practices; shared and supportive leadership; a shared vision and values; the application of collective learning; and supportive structural and relational conditions (Hipp & Huffman, 2010). In 2019, a follow up study (Thornton & Cherrington, 2019) was carried out by the same authors to investigate the factors that enable the establishment and sustainability of PLCs in ECE. The five enablers are: "clear membership and effective induction for new members; a shared focus, commitment and research orientation; clarity of roles including leadership roles; opportunities for dialogues and deprivatisation of practice and stimulus of new ideas" (Thornton & Cherrington, 2019, p. 428).

Despite the factors that effectively enabled PLCs in ECE to be identified, the barriers for establishing them were revealed concurrently. For instance, structural conditions such as high staff turnover and time for meetings were limited. While

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relational conditions revealed that trust in teachers was important to positively engage them in open discussion and reflection on their practices (Cherrington & Thornton, 2015). Research also found that the behaviour of professional leaders played a crucial role in achieving the successful PLCs in ECE (Thornton & Cherrington, 2014).

The literature on the effectiveness of PLCs is rare. Among the literature, only a few studies conducted in Asian countries and regions were found (e.g., Vijayadevar et al., 2019; Yin et al., 2019). An interpretive case study conducted in Singapore ECE settings found that participating in PLCs can improve teachers' collegiality and collaborative learning (Vijayadevar et al., 2019). Moreover, the first quantitative study in ECE settings on investigating the effects of PLCs on teacher professional learning was conducted by Yin et al. (2019) in Hong Kong SAR kindergartens. The empirical evidence suggested that teacher professional learning was promoted by all PLC components, meanwhile, the effects of teachers' perceived faculty trust on teacher professional learning were positively mediated by PLCs in ECE contexts (Yin et al., 2019).

In summary, the characteristics of PLCs in ECE have been reviewed. Most of the characteristics supported the findings in the school sectors (Cherrington & Thornton, 2015). For the conditions on establishing and sustaining PLCs in ECE, structural and relational conditions were highlighted as well as the importance of leadership roles and relational trust. Although the effects of PLCs were under-researched, PLCs should be encouraged in ECE since they benefit teacher professional learning (Yin et al., 2019). After reviewing the international literature, it has been necessary to examine the

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literature in PLCs in ECE in mainland China.

2.2.4 PLCs in ECE in China

The research on PLCs in ECE in China is much scarcer than international studies. After searching in databases such as Google Scholar, Scopus, and CNKI, there was no English literature found in this area. Although several articles written in Chinese were searched, only one of them was an empirical study which was a master's thesis (Chen, 2014). The majority of the literature on PLCs in ECE were prescriptions or commentaries (e.g., Jiang & Zheng, 2019; Liu, 2012).

In Jiang and Zheng's (2019) commentary, they stated that building PLCs with openness, trust, collaboration, and supportive conditions in kindergartens have become a significant approach to develop teacher professional learning. Additionally, Liu (2012) recommended that principals play a vital role in establishing PLCs in kindergartens. For only one empirical study, three characteristics of PLCs in ECE were identified from the qualitative data: shared vision, emphasise equal dialogue and collaboration, and achieve professional development in a symbiotic and harmonious interpersonal relationship (Chen, 2014). Given the evidence in the characteristics of PLCs in school sectors (Zhang & Pang, 2016), the PLCs in ECE settings share these findings. However, the empirical evidence was not strong enough to support this claim.

Thus, further empirical studies are in need to identify the conceptualisation and implementation of PLCs in ECE in China. As one of the constructs of the current research project, PLCs, which were in the forms of instituted TRGs and informal

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learning groups, were examined in the ECE context in mainland China. Furthermore, the impact of principal's leadership on PLCs was investigated, since supportive leadership has been identified as one of the most vital influential factors on the development and sustenance of PLCs in schools (Harris & Jones, 2017). Hence, the literature on the impact of principal leadership on PLCs is reviewed in the following sections.

2.3 Impact of Principal Leadership on PLCs

As discussed in the previous sections, leadership was evidenced to be a vital element for the development and sustainability of PLCs both internationally and in the Chinese context (Harris & Jones, 2017; Zhang & Pang, 2016). The existing empirical evidence has verified the significance of principal leadership on PLCs (e.g., Vanblaere & Devos, 2016). However, there were scarce studies on investigating the exact principal leadership practices which have an impact on the development of PLCs. In this section, the details of the research findings on the impact of principal leadership on PLCs are reviewed from the international literature to those in mainland China, finally focusing on studies in the ECE context.

2.3.1 Impact of Principal Leadership on PLCs in the International Literature

The studies on exploring the relationship between the principal leadership on PLCs can be categorised into two types: the effects of single school leadership style on PLCs (e.g., Voelkel, 2019); and the effects of a combination of different leadership styles

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(Vanbalare & Devos, 2016; Zheng et al., 2016). In this section, both types of studies are reviewed.

Among the studies reviewed, the effects of the two influential and enduring leadership models on PLCs were investigated most respectively, namely TL and IL (Hallinger, 2003). For instance, Voelkel's (2019) quantitative study in American elementary schools confirmed that school principals' TL positively impacted PLCs. To be specific, the TL dimensions, such as inspiring a shared vison, challenging the process, enabling others to act, and encouraging the heart, were evidenced to be predictors of more effective PLCs (Voelkel, 2019). Additionally, research in the African context found that TL exerted more impact on PLCs rather than on teacher learning. Therefore, the authors proposed that the substantial improvements on teaching practices can be accomplished by promoting TL and PLCs in schools in Mozambique (Luyten & Bazo, 2019). The moderate correlation between principal IL and PLCs was identified in Malaysia (Hassan et al., 2019). The study findings demonstrated that the principals' IL, especially under the dimensions of promoting school climate and managing instructional programmes, positively influenced the implementations of PLCs among teachers.

In addition to the studies which focused on the effects of the single leadership style on PLCs, Vanbalare and Devos' (2016) quantitative study in Belgian primary schools demonstrated the effects of the combination of TL and IL. The study revealed that teacher perceived principal TL and IL were positively related to the characteristics of interpersonal PLCs. In detail, principal IL positively influenced teachers'

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participation in reflective dialogues and deprivatised practice, while principal TL was found to be significant to teachers' participation in the presence of collective responsibility and reflective dialogue. Different from the studies which only focused on a single leadership model, this study revealed the utmost importance of combining different leadership styles together (Vanbalare & Devos, 2016). The research findings provided suggestions to school principals, such as they should be instructional leaders who participated in teachers' classroom instructions and provided teachers with guidance and suggestions as well as they should attach importance to the transformational role of encouraging and supporting teachers (Vanbalare & Devos, 2016).

In summary, although these studies confirmed the positive effects of TL and IL on PLCs, the results were generated from only quantitative data collected solely from teachers. Therefore, for getting a more comprehensive understanding on the relationship between principal leadership and PLCs, future research could involve school principals' perspectives in and collect qualitative data/mixed-method data on exploring principal leadership and PLC characteristics. Given the different political and cultural contexts of mainland China, the literature on the impact of school leadership on PLCs in China is reviewed in the next section.

2.3.2 Impact of Principal Leadership on PLCs in China

Principal leadership and PLCs have been proved as being statistically and positively correlated, which evidenced that principal leadership positively impact the five

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characteristics of PLCs in mainland China (Yin & Zheng, 2018; Zheng et al., 2016). In this section, the detailed discussions on these studies are displayed.

The majority of the studies on the effects of principal leadership on PLCs conducted in Chinese contexts was quantitative research. In detail, a study conducted among primary school teachers in Yunnan Province identified that principal leadership posed positive effects on the five characteristics of PLCs and the factor 'trust in colleagues' significantly mediated the effects (Zheng et al., 2016). Meanwhile, principal leadership practices were identified as the foundation to create a cultural and structural environment for the effective implementation of PLCs in China (Zheng et al., 2016). Moreover, Yin and Zheng (2018) investigated trust in principals as being another mediator on the effects of principal leadership on PLCs. The study showed that "teachers' perceptions of trust in the principal negatively mediated the effects of leadership practices on PLCs on four characteristics of PLCs: leadership practices and the PLC components collaborative activity; collective focus on student learning; deprivatized practice; and reflective dialogue" (Yin & Zheng, 2018, p. 146). Furthermore, the relationship among principal IL practices, PLCs, and teacher self-efficacy were explored (Zheng et al., 2019). The study found that the effects of principal IL practices on the PLC characteristics to be positive and significant; meanwhile, the positive effects of PLCs on teacher self-efficacy were confirmed (Zheng et al., 2019). The study expanded the principal leadership and PLCs research by investigating not only the antecedents of PLC but also its consequences in mainland China (Zheng et al., 2019).

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Apart from these quantitative studies, Qian and Walker (2020) conducted a qualitative study to discover the principals' role in establishing and sustaining PLCs in primary schools across mainland China. This was the only study found among the literature, which revealed the exact leadership practices of Chinese principals that facilitated teacher professional learning in schools. Five leadership practices were suggested to school principals to establish the collective professional mind set, namely principals should focus on classroom teaching and student learning, set up the mandatory structures for PLCs, stress the professional development of teacher instructional practice and peer support, establish a system to recognise, appraise, and review outstanding performance, and be a role model of valuing learning (Qian & Walker, 2020). Moreover, two distinctive findings on Chinese school leadership were identified. Firstly, Chinese principals were both instructional leaders and strong administrative managers. Secondly, "PLCs need to be deliberately designed and arranged through some form of top-down school administrative system and accountability" (Qian & Walker, 2020, p. 11).

Based on the studies reviewed above, trust has been identified as a significant factor that influences the relationship between principal leadership and PLCs in mainland China. Therefore, school principals should pay more attention on creating and sustaining trusting environments within schools (Tschannen-Moran, 2014). Additionally, these studies directly adopted the leadership models and PLC characteristics in the international literature without any modification, meanwhile only a quantitative design was implemented. Therefore, future studies could adopt a mix-

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method design to explore Chinese contextual issues in school leadership and establishing PLCs, and the relationship between the two constructs in more indigenous detail in mainland China. In addition, this large-scale qualitative research (Qian & Walker, 2020) offered us a set of valuable insights on how Chinese principals enacted their leadership practices to build up school-based PLCs, however these findings were based on the perspectives of school principals only. Hence, for a more detailed explanation on these issues, teacher's perspectives could be considered in future studies in mainland China.

The studies reviewed in these two sections were all conducted in the school sector. For better understanding the theoretical foundations for the reported research project, studies in the ECE context are reviewed in the following sections.

2.3.3 Impact of Principal Leadership on PLCs in ECE in the International Literature

The research on the impact of principal leadership on PLC in ECE was extremely rare (Keung et al., 2020). Two studies were found among the literature, and both of them reinforced the research findings in the school sector by highlighting the significance of leadership on PLCs in ECE contexts. The two studies are reviewed in detail below.

A large-scale quantitative study in Hong Kong SAR found that principal leadership practices positively impact PLCs in kindergartens, which filled the research gap on the relationship between principal leadership and PLCs in the ECE sector (Keung et al, 2020). The research findings were consistent with studies in the school sector, but the authors identified the significance of networked PLCs on teacher

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professional development and suggested that scholars may involve them in future studies (Keung et al, 2020). Additionally, Thornton and Cherrington (2014) conducted case studies of four PLCs in New Zealand and confirmed that leadership practices influence the effectiveness of PLCs. In detail, the research reinforced the finding from the school sector, which revealed the significant role of distributed and supportive professional leadership in PLCs. Meanwhile, the authors claimed that relational trust was particularly important to the development of PLCs in the ECE sector, since teachers were more willing to participate in collaborative activities in trust relationships (Thornton & Cherrington, 2014). Although this study did not focus on principal leadership, the findings shed light on how kindergarten principals could distribute leadership among professional leaders or designated leaders within the ECE sector.

Although the studies reviewed in this section were limited, the positive findings credited the significance of studying the relationship between principal leadership and PLCs in kindergartens. Meanwhile, the studies have set up examples for future research in the fast-developing ECE context in mainland China.

2.3.4 Impact of Principal Leadership on PLCs in ECE in China

After searching in the databases such as Google Scholar, Scopus, and CNKI, no study was found on the relationship of school leadership and PLCs in ECE in China. There is a theoretical research gap for scholars to explore and depict the principal leadership enacted when establishing and sustaining PLCs in kindergartens in China. The practical implication of an exploration and the depiction of principal leadership could arouse the

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attention of policy makers and principals to the leadership practices that effectively impact teacher collaborative professional learning.

The studies reviewed on the impact of principal leadership on PLCs confirmed the importance of principal leadership on the establishment and sustainability of PLCs. School principals played crucial roles in creating both cultural and structural conditions to achieve effective and sustainable PLCs. Although the significance of the inquiry on principal leadership and PLCs has been acknowledged, it is rare to find any empirical evidence on it in ECE in mainland China. Therefore, there is a need to conduct more studies based on data in the future. Based on the literature reviewed in this chapter, two suggestions are given for future studies. Firstly, future studies could focus on exploring principal leadership, the essence of PLCs, and the exact principal leadership practices that would benefit the development and sustenance of PLCs in ECE in mainland China. Secondly, for enhancing the comprehensiveness and validity of the research findings, the mixed research method could be adopted. Meanwhile, for reducing the strong reliance on teacher reports, researchers could collect data from both teachers and principals in ECE in China. Therefore, a detailed discussion of the methodology of the research project is conducted in Chapter Three.

2.4 Research Gaps

This chapter has reviewed literature that has involved school leadership, PLCs, and the effects of principal leadership on PLCs. In each section, the research gaps have been identified. To better demonstrate them, the research gaps are detailed below.

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Firstly, the theoretical gap has been identified since there is no existing literature on the development and validation of the successful principal leadership model in the ECE setting in mainland China. Additionally, although several studies were reviewed in this chapter related to the impact of principal leadership on PLCs, little was done to investigate the specific leadership practices that principals enact that have impacted the development and sustainability of school-based PLCs effectively (Zhang & Pang, 2016).

Secondly, it relates to the methodological gaps. As discussed previously in this chapter, scholars solely used either qualitative or quantitative methods to study principal leadership practices, PLCs, or the impact of principal leadership on PLCs in ECE settings. No mixed methods study was found among the relevant existing literature. Thirdly, the instrument for studying successful principal leadership in ECE is absent, and the instruments adopted by the researchers reviewed in this chapter were mainly developed in other school sectors. Hence, there was the need to conduct a mixed method research for addressing the research gaps identified.

2.5 The Conceptual Framework of the Current Project

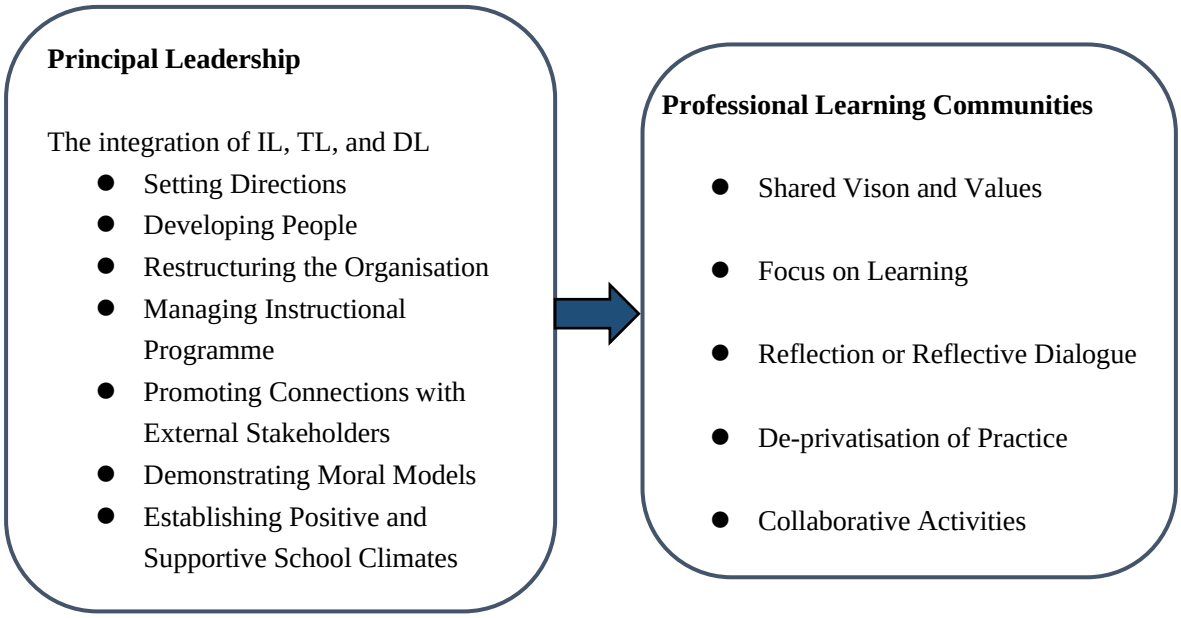
The conceptual framework of the current project was generated from the literature review. It consists of two constructs and a one-way relationship, namely principal leadership, PLCs, and the impact of principal leadership on PLCs, demonstrated in Figure 3. Figure 3 only demonstrates the labels rather than the specific dimensions of successful principal leadership practices as well as the PLCs factors. The specific dimensions of successful principal leadership were generated based on the empirical

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datasets which were collected in the current project. Detailed **ex**planations of the conceptual framework are stated in three aspects.

Figure 3

Conceptual Framework



Firstly, as discussed in Section 2.1.1.4, the integrated model of school leadership could be more effective for investigating principal leadership practices, which incorporates the features of IL, TL, and DL based on a range of international evidence (Day et al., 2011; Leithwood et al., 2020). Meanwhile, the empirical explorations on the indigenous principal leadership practices in China have been also taken into consideration during the process of establishing the conceptual framework. For instance, there were several empirical studies (e.g., Qian et al., 2017; Walker & Qian, 2020; Wei et al., 2018) revealed that Chinese principals enacted their instructional leadership by setting purpose and directions, managing and improving teaching and learning,

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nurturing positive and collaborative teacher culture, developing and improving school curriculum, fostering professional development to enhance teacher capacity, and promoting connections with external stakeholders. These dimensions showed the unique features of principal leadership in primary and secondary schools in mainland China. Especially, the sixth dimension, promoting connections with external stakeholders, which highlighted that Chinese school principals establish and maintain the good relationships (*guanxi*) with local government, communities and also parents.

Moreover, the unique features of TL in the Chinese context consisted of four dimensions: moral modelling, charisma, articulate vision, and individualised consideration (Li & Shi, 2008). Among these dimensions, moral modelling was considered as a unique feature of Chinese TL. Additionally, the recent research found that establishing positive and supportive school climates was another unique practice for Chinese principals enacting their TL (Wang, 2019). Hence, the principal leadership model in the conceptual framework of current research project was established by integrating the dimensions of leadership practices both from international literature and Chinese literature, so as to better explore the indigenous successful principal leadership practices in Chinese kindergartens.

Secondly, the five characteristics of PLCs demonstrated in Figure 3 were elaborated in Section 2.2.2. Meanwhile, the empirical evidence has shown that Chinese PLCs shared the main characteristics with PLCs in the international literature (Wong, 2010; Zhang & Pang, 2016). Furthermore, Louis et al.'s (1996) five essences of PLCs were confirmed in the Chinese context (Qian & Walker, 2020; Yin & Zheng, 2018).

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Hence, the five main characteristics were adopted as the fundamental theorical model for digging into the PLCs in ECE in mainland China.

Thirdly, the blue arrow represents the investigation of the one-way relationship between principal leadership and PLCs. Specifically, the impact of principal leadership practices on the development and sustainability of PLCs in ECE in China were investigated, which was the primary focus of the project, since it could address the theoretical gap that few empirical studies have conducted in this field. Meanwhile, its practical implications could benefit policy makers and kindergarten principals to improve teacher collaborative professional learning in ECE in mainland China.

In conclusion, the project explored the indigenous successful principal leadership practices in ECE in China. Meanwhile, the impact of the successful principal leadership practices on PLCs were investigated. In Chapter Three, the methodology for the mixed method design regarding these aims is reviewed.

2.6 Research Questions

For better guiding the design of the methodology, it is necessary to state the research questions beforehand. The research questions of the research project were generated for addressing the research gaps identified in Section 2.5. The aim of the research was to investigate successful principal leadership and its impact on PLCs in ECE in mainland China. The following research questions were utilised in order to accomplish the study:

1. What are the successful principal leadership practices perceived by principals and teachers in ECE in China?

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2. To what extent do successful principal leadership practices impact PLCs?

Overall, the project aimed to address the research gaps on the theoretical explorations of principal leadership and the impact of principal leadership practices on PLCs in ECE in mainland China.

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Chapter Three: Methodology

3.1 Introduction

The purpose of the current research project was to investigate successful principal leadership and its impact on PLCs in ECE in mainland China. The literature review chapter has revealed that little was known regarding principal leadership and to what extent principal leadership practices impact PLCs in ECE in mainland China. In response to the research gaps and for achieving the research objectives, the research methodology used in this project is outlined in this chapter. The philosophical assumption underpinning the project is discussed first, followed by describing the research design strategy, the selection of the research site and sample, and the data collection and analysis. The chapter ends with reflections on the methodological concerns, namely the role of the researcher, trustworthiness issues, and ethical considerations.

3.2 Research Paradigm: Interpretivism

A research paradigm refers to the philosophical assumptions that are central to research endeavour, which is defined as the "basic belief system or worldview that guides the investigator, not only in choices of method but in ontological and epistemologically fundamental ways" (Guba & Lincoln, 1994, p. 105). Within a research design, the paradigm consists of the "nature of reality (ontology), how knowledge is constructed (epistemology), the plan of action (methodology) that the researcher brings to selection

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of method, participants, data collection, analysis and interpretations" (Klenke, 2008, p. 15). In a word, the research paradigm determines the ways of the questions asked by the researcher and the modalities of the participants to answer the questions (Terre Blanche & Durrhiem, 2006). As the purpose of the current project was to investigate the experiences and perceptions of the research participants on principal leadership and their impact on PLCs in ECE in mainland China, the interpretivism paradigm was considered to be the suitable to establish the underlying assumptions in the current project since the "interpretivism argues that truth and knowledge are subjective, as well as culturally and historically situated, based on people's experiences and their understanding of them" (Gemma, 2018, p. 8).

In detail, the relativist ontological perspective is adopted in the interpretivism paradigm that "endorses multiple realities socially constructed by individuals from within their own interpretation" (Klenke, 2008, p. 15). While epistemologically, interpretivists propose that how knowledge is understood through the subjective experience constructed by participants (Krauss, 2005). Therefore, the participants' interpretations towards principal leadership, and the relationships between principal leadership practices and PLCs in ECE collectively constructed the realities that built up their understanding toward the phenomenon of the current research project. Specifically, the meaning of the project was constructed rather than discovered the participants' experiences and understandings within their contexts of leadership discourses, since it was contingent to individual practices and constructed through interactions between individuals and transmitted within an essentially social context

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(Crotty, 1998).

3.3 Research Design: A Mixed Methods Approach

Scholars suggest that the strategies of inquiry consist of qualitative, quantitative, and mixed methods designs (Creswell, 2009). The various research designs offer researchers different options that enables them to select the most appropriate approach that fits the purpose and rationale of their studies. Mixed methods design is defined by Tashakkori and Creswell (2007, p. 4) as "research in which the investigator collects and analyzes data, integrates the findings, and draws inferences using both qualitative and quantitative approaches or methods in a single study or a program of inquiry". The combination of both qualitative and quantitative approaches enables researchers to understand different phenomena (Creswell & Clark, 2017). Furthermore, Morse and Maddox (2014) suggest that a mixed method design could prioritise one core component which is either qualitative or quantitative based on the research focus. Nevertheless, the mixed methods approach promotes the integration and "synergistic utilization of data" to obtain understanding that could not generate if solely using either qualitative or quantitative data (Wisdom & Creswell, 2013, p. 1), which indicates that the mix of qualitative and quantitative methods could provide deeper understandings of the phenomena and generalises research findings beyond those that can be obtained by only a large number of quantitative studies or by only purely qualitative studies. Additionally, the adoption of a mixed methods design with different groups of participants achieved data and methodological triangulation to enhance the

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comprehension and validity of the findings (Creswell & Clark, 2017).

According to Creswell and Clark (2017), three core mixed methods designs are recommended, namely the convergent design, the explanatory sequential design, and the exploratory sequential design. The exploratory sequential design was adopted in the current research project, which consisted of three phases. It started with the collection and analysis of qualitative data, followed by a development phase to build up quantitative features based on the qualitative results. In the quantitative phase, quantitative data were collected and analysed in order to generate or test the initial qualitative findings (Creswell & Clark, 2017). The rationale for this exploratory design was that a culture-relevant quantitative measure was empirically and theoretically grounded in the qualitative data according to the perspectives of participants from a particular culture or setting. Hence, it was considered as the most appropriate approach for better investigating the principal leadership and its impact on PLCs in ECE in mainland China, as the leadership measure needed to be explored. Furthermore, the exploratory design was best suited for exploring the phenomenon since it began with qualitative research and ended by testing the qualitative results quantitatively (Creswell & Clark, 2017). For the current project, the quantitative study was conducted based on the qualitative findings towards the instrument construction as well as the relationship between principal leadership and PLCs. Then, synthesis of the quantitative and qualitative data was conducted to enhance the understanding of the perspectives of participants towards the research questions.

Therefore, the current research project employed an exploratory mixed methods

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design which took 12 months to finish the data collection and analysis. For the timeframe, please see Appendix One. Detailed implementations of the mixed methods design are explained in the data collection and analysis section. The selection of the participants is introduced first in the following section.

3.4 Selection of Participants

The research participants were selected from kindergartens in Yunnan Province in mainland China. Both kindergarten principals and teachers were recruited as the participants. The reasons for choosing Yunnan Province as the research site are introduced first and followed by a discussion on the sampling strategy in this section.

3.4.1 Research Site

The research site was Yunnan Province which is located in the southwest area of mainland China. Scholars barely conduct empirical research in ECE in the southwestern regions, although there are great needs in exploring the factors related to the quality of ECE in practice. Comparing to the first-tier regions, such as Beijing, Shanghai, and southeastern coastal areas, Yunnan Province is underdeveloped economically, and it is the province with the most ethnic minorities. The kindergartens in cities demonstrate the highest quality of ECE in Yunnan rather than their counterparts in remote mountainous areas where children even do not have chance to enter the kindergartens, caused by the uneven distribution of educational resources. Meanwhile, the different cultures of the 25 ethnic minorities exert influences on the development of ECE. Hence,

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there was a need to understand and explore the practices in both kindergartens in cities and in the remote areas, especially in the ethnic minority autonomous regions for lifting the overall quality of ECE in Yunnan Province.

Additionally, the number of kindergartens has grown rapidly in recent years. According to the *Statistical Report of Yunnan Province's Educational Development at the Beginning of the 2020/2021 School Year* issued by the Yunnan Provincial Education Department in March 2021, the number increased from 7,310 in 2015 to 13,385 in 2021. The provincial government has initiated comprehensive reforms for ECE by increasing financial input, supporting teacher training programmes, and establishing political authorities under the central government policy issued in 2010 aiming to achieve universal ECE by 2020 (Qin & Wang, 2013). In the meantime, researchers have raised their concerns on the overall quality of ECE under the impact of the rapid expansion nationally (Wang & Qin, 2014). In addition, teacher professional development has been commonly recognised as one of the key factors in promoting the quality of ECE (Sun, 2004). In the same vein, the professional development of ECE teachers has also been considered as essential to the quality of ECE in Yunnan Province. However, teacher professional development programmes are highly controlled by the provincial government due to the politicised Chinese context, and the top-down programmes could hardly meet the needs of kindergartens. Furthermore, the significance of principal leadership and PLCs on teacher professional development have been confirmed by international scholars (e.g., Waniganayake et al., 2018; Yin et al., 2019). However, the research on principal leadership or any factors influencing teacher professional

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development, which determines ECE quality, has been barely empirically investigated in this province.

It has to be emphasised that the population of children aged three to six reached about 1.7 million in Yunnan Province in 2017. As introduced in Chapter One, the third child policy has been implemented by the Chinese central government since May 31, 2021. The policy may stimulate an increase of the population, which indicates there would be a larger expansion of the numbers of kindergartens in the near future. Meanwhile, high quality ECE is in demand as parents' expectations towards children's whole development have increased in recent years. Under such circumstances, more and more challenges have been posed to ECE policy makers, ECE principals, and teachers on establishing quality kindergartens. To sum up, the fast-paced development of ECE in Yunnan Province offered the researcher a fertile and unique field to explore the inquiry of the current project.

3.4.2 Sampling

Convenience sampling was used for the current project due to the restricted time limit of this doctoral thesis. Just as the name implies, convenience sampling is a type of nonrandom or nonprobability where the research population is easily accessible to the researcher (Etikan et al., 2016). In detail, the potential participants were principals and teachers in provincial exemplary kindergartens, who have participated in training programmes organised by the local government and the university within the recent two years. The researcher accessed the participants through referrals by training programme

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organisers.

Moreover, the researcher focused on the public sector in ECE in Yunnan Province. There were mainly two reasons for zooming in on the public kindergartens. Firstly, the number of public kindergartens comprises a larger percentage in Yunnan Province, namely nearly 55.2% of the 13,385 kindergartens. Meanwhile, the number of public kindergartens is still increasing since the provincial government financially invests more on the constructions of public kindergartens in order to achieve universal ECE in Yunnan Province (Qin, 2019). Thus, this indicated more need to conduct research in public kindergartens. Secondly, the average quality of public kindergartens is better than private ones, therefore, the benchmark of the development of ECE in Yunnan Province is determined by the exemplary public kindergartens. The provincial government merges the outstanding public and private kindergartens to expand the coverage of the high-quality resources to stimulate the improvement of ECE in Yunnan Province (Qin, 2019). Therefore, it was more meaningful to conduct the research in exemplary public kindergartens where more influence has been exerted on shifting both the policies and practices.

Apart from choosing provincial exemplary public kindergartens, the population of the current project targeted in-service principals and teachers. As discussed in Chapter Two, the existing literature on principal leadership and the impact of principal leadership on PLCs in mainland China has been mainly conducted by collecting data from solely teachers or principals (e.g., Qian & Walker, 2020; Yin & Zheng, 2016). The current project recruited both principals and teachers for reducing the reliance on a

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single source of data and enhancing the validity of the project findings. Therefore, the purpose of the project was to investigate principal leadership and its impact on PLCs from the perspectives of both principals and teachers.

To sum up, the plan which was undertaken for the participants sampling of the current project has been introduced, including the research site and the sampling strategy. The researcher implemented convenience sampling strategy for the project which consisted of four studies. A detailed discussion of the four studies is contained in Section 3.5. The same sampling strategy was utilised for each study, which will not be repeated in the following parts. A detailed design of the sample and the recruitment of the participants of each study are introduced in the corresponding sub-sections.

3.5 Data Collection and Analysis

Based on the sequence of the exploratory sequential design, there were three phases of data collection and analysis, namely the qualitative strand, the quantitative strand, and the synthesis of the qualitative and quantitative data. A discussion on the data procedure is now detailed by following the three phases.

3.5.1 Phase One: Qualitative Strand

The qualitative strand was conducted in the first place through the completion of three studies: pilot study, semi-structured interviews, and expert panel. The aim of Phase One was twofold. Firstly, to obtain an in-depth understanding towards successful principal leadership, and the impact of principal leadership on PLCs in exemplary kindergartens

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in Yunnan Province. Secondly, in order to establish content validity of the quantitative instrument of successful principal leadership in ECE in mainland China. For achieving the research aim, the researcher conducted semi-structured interviews to investigate the perspectives of kindergarten principals and teachers towards the two research questions. Thematic analysis was implemented in order to analyse the interview data, which was a theoretically flexible approach to identify, analyse, and interpret patterns of meanings within the qualitative dataset (Clarke & Braun, 2013). Additionally, as discussed previously, the convenience sampling was adopted in the current project. The sample and recruitment of each study are introduced, followed by aspects of the instruments, and the data procedure.

3.5.1.1 Study One: Pilot Study

The semi-structured interviews with one principal and one teacher in kindergartens in Yunnan Province comprised the pilot study. This small-scale pilot study was conducted before the implementation of the formal research for preventing discrepancies in language expression since the interview protocols were translated from English into Chinese. Moreover, the interview protocols, which were developed based on reviewing the literature on principal leadership, and the impact of principal leadership on PLCs, were refined by conducting the pilot study.

Sample and Recruitment. The pilot study recruited one kindergarten principal and one kindergarten teacher in Yunnan Province. The researcher sent a formal invitation to the potential participants through referrals from the principal and teacher

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training programme organisers through the instant messaging software, WeChat. An explanation of the project and its benefits to ECE principals and teachers were displayed in the information sheets, as well as what the participants would benefit from their involvement in the study, such as the researcher would send individual feedback and a summary of the project results to them, and the practical recommendations on improving principal leadership and PLCs would be provided. Additionally, it was clearly stated in the consent form that the responses of the participants would be confidential and kept in a safe place, and they could withdraw their participation anytime and their participation was voluntary.

Instrument. Semi-structured interviews were conducted in order to collect data for the pilot study. The interview protocol was developed based on the literature reviewed in Chapter Two, which targeted at obtaining an in-depth understanding towards the two research questions (RQs) as follows: (1) Explore how the principals and teachers perceived successful principal leadership in ECE in China (RQ1); and (2) Seek the impacts of principal leadership practices on PLCs in ECE in China (RQ2). To be more concrete, the interview guiding questions were provided to the participants in advance. According to the different types of participants, the researcher designed the guiding questions for ECE principals and teachers respectively. For ensuring the validity of these questions, a translation of them followed a standard procedure of translation and back translation (Brislin, 1970). In addition, these questions were reviewed by the researcher and the researcher's supervisor before the pilot study.

Data Collection. The researcher conducted face-to-face semi-structured

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interviews with the participants, and each interview lasted for approximately one hour. Chinese was the language used in the interviews. The interviews were audio-recorded under the permission of the participants. Meanwhile, the researcher wrote interview notes in case the participants would not give their consent to the recordings. In addition, the interviews were transcribed verbatim.

Data Analysis. The researcher analysed the interview data in NVivo. The interview transcripts and the interview notes were read through carefully. The focus of the analysis was to measure whether the interview guiding questions could be fully understood by the participants without any discrepancy. Furthermore, thematic analysis was implemented to check whether new themes emerged from the data. The interview questions were refined according to the data analysis results before the implementation of Study Two. The updated guiding questions for the interviews are referred to in Appendix Two.

3.5.1.2 Study Two: Semi-structured Interviews

In this study, semi-structured interviews were carried out with 12 kindergarten principals and 30 kindergarten teachers in order to obtain an in-depth understanding towards successful principal leadership practices and the relationship between principal leadership and PLCs in kindergartens in Yunnan Province for answering the two research questions. Meanwhile, the content validity of the successful principal leadership instrument (SPLI) was established.

Sample and Recruitment. The sampling strategy and participant recruitment

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were the same as the pilot study. The sample selection for Study Two was based on the following considerations. Firstly, the sample size was regarded to be sufficient to gain knowledge about principal leadership, and the relationship between principal leadership and PLCs from the interviews. Meanwhile, the sample size was achievable practically within the current project timeframe. Secondly, participants' backgrounds such as gender, age, location, working experience, and role they acted were considered for a comparatively more diverse sample.

Background information of the sample of Study Two was sketched in details. There were 12 principals and 30 teachers from 12 kindergartens who participated in this study. The kindergartens were purposefully selected based on the established criteria. The 12 kindergartens were all provincial exemplary kindergartens in Kunming, Yunnan Province. The descriptions of these kindergartens and sample distribution among the kindergartens are described in Table 1. The kindergartens were scattered in five districts, representing the first-tier quality of teaching and learning in early childhood education (ECE) in the province. Besides, each kindergarten has instituted Teaching Research Groups (TRGs) since its establishment. Amongst the 42 participants, the 12 principals were all female. They had worked in the ECE field for a long time, ranging from 12 years to 33 years. They started their careers as front-line teachers and possessed a high level of professionalism. As for the teachers, the working years of them ranked from one year to 25 years. There were only two male teachers, which shows the rare existence of male kindergarten teachers. The demographics of the participants in Study Two are summarised in Table 2.

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Instrument. Semi-structured interviews were used as the instrument. The interview guiding questions are referred to in Appendix One.

Data Collection. The semi-structured one-on-one interviews with 12 kindergarten principals and 30 teachers were conducted in Chinese for answering the research questions. The researcher was the only interviewer. This was the same as Study One. Each interview lasted for almost one hour. The interviews were audio-taped and transcribed verbatim. After each interview, the researcher wrote analytic memos according to the reflections of the interview process in order to obtain more integrated data.

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Table 1

Description of Kindergartens and Sample Distribution of Study Two

No.	Name	Participant	Years in Operation	School Size	General Description
1	Kindergarten A	Principal A Teachers A1 & A2	20-30 years	17 Classes	Kunming Modern Education Exemplary Kindergarten, Band One First-Grade Kindergarten in Yunnan Province, with a capacity of over 80 staff members and 509 children (3-6 years old)
2	Kindergarten B	Principal B Teachers B1, B2, & B3	30-40 years	5 Classes	A public integrated kindergarten in Yunnan Province, Yunnan Province Exemplary Kindergarten, with a capacity of 30 staff members and over 200 children (1-6 years old)
3	Kindergarten C	Principal C Teachers C1, C2, & C3	20-30 years	9 Classes	Yunnan Provincial Modern Exemplary Kindergarten, Band One First-Grade Kindergarten in Yunnan Province, with a capacity of 50 staff members and over 360 children (3-6 years old)
4	Kindergarten D	Principal D Teachers D1 & D2	20-30 years	8 Classes	Band One Exemplary Kindergarten in Yunnan Province, with a capacity of 43 staff members and over 310 children (3-6 years old)
5	Kindergarten E	Principal E Teachers E1, E2, & E3	20-30 years	13 Classes	Band One First-Grade Exemplary Kindergarten in Yunnan Province, with a capacity of 54 staff members and over 400 children (3-6 years old)
6	Kindergarten F	Principal F Teachers F1, F2, & F3	Less than 10 years	14 Classes	Band One Second-Grade Kindergarten in Yunnan Province, Yunnan Provincial Modern Education Exemplary Kindergarten, with a capacity of 62 staff members and over 420 children (3-6 years old)

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No.	Name	Participant	Years in Operation	School Size	General Description
7	Kindergarten G	Principal G Teachers G1, G2, & G3	50-60 years	9 Classes	A branded kindergarten in Yunnan Province, Provincial and Municipal Exemplary Kindergarten, Band One First-Grade Kindergarten in Yunnan Province, with a capacity of 48 staff members and over 300 children (3-6 years old)
8	Kindergarten H	Principal H Teachers H1 & H2	20-30 years	18 Classes	Band Two First-Grade Kindergarten in Yunnan Province, with a capacity of 70 staff members and over 485 children (3-6 years old)
9	Kindergarten I	Principal I Teachers I1 & I2	Less than 10 years	6 Classes	Band Two First-Grade Kindergarten in Yunnan Province, with a capacity of 30 staff members and over 200 children (3-6 years old)
10	Kindergarten J	Principal J Teachers J1, J2, & J3	10-20 years	12 Classes	Band One Kindergarten in Yunnan Province, Yunnan Provincial Modern Education Exemplary Kindergarten, with a capacity of over 40 staff members and nearly 400 children (3-6 years old)
11	Kindergarten K	Principal K Teachers K1, K2, & K3	More than 60 years	Education Group 5 Kindergartens	Band One First-Grade Kindergarten in Yunnan Province, Yunnan Provincial Modern Education Exemplary Kindergarten, with a capacity of over 104 staff members and nearly 700 children (3-6 years)
12	Kindergarten L	Principal L Teacher L1	More than 60 years	Education Group 6 Kindergartens	Band One Kindergarten in Kunming, Band One Provincial Kindergarten in Yunnan, with a capacity of over 145 staff members and nearly 1,080 children (3-6 years)

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Table 2

Demographics of the Participants in Study Two

Sample-12 Principals	**Age (years)**			**Gender**		**Work Experience in ECE (years)**			**Years in Principalship**			
	30-40	**40-50**	**Over 50**	**Female**	**Male**	**10-20**	**20-30**	**Over 30**	**1-5**	**5-10**	**10-15**	**15-20**
No. of Principals	2	7	3	12	——	2	7	3	2	3	6	1
Percentage of Sample	16.7%	58.3%	25.0%	100.0%		16.7%	58.3%	25.0%	16.7%	25.0%	50.0%	8.3%

Sample-30 Teachers	**Age (years)**			**Gender**		**Work Experience in ECE (years)**			**No. of Middle Leaders**
	20-30	**30-40**	**40-50**	**Female**	**Male**	**1-10**	**10-20**	**20-30**	
No. of Teachers	10	16	4	28	2	13	14	3	12
Percentage of Sample	33.3%	53.3%	13.3%	93.3%	6.7%	43.3%	46.7%	10.0%	40.0%

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Data Analysis. The interview transcripts with 42 participants were analysed following the procedure of thematic analysis by using NVivo 12. The widely cited six steps analysis were conducted for answering the two research questions (Braun & Clark, 2006), which consisted of becoming familiar with the interview data; creating initial codes; searching for themes; reviewing themes; defining themes; and write up. In detail, the researcher managed the raw data by transcribing the interviews manually. The software NVivo 12 was used to prevent any loss of data and enhance the retrieval of information during the data analysis. The researcher read the transcripts through to gain overall understanding of the data. Then, both the deductive and inductive analyses of the transcripts were conducted to generate the main themes drawn from the data. The coding process was started by the deductive analysis to generate the themes based on the existing literature on successful school leadership. Then, the inductive analysis was conducted to derive themes out of the existing literature. After the deductive and inductive analyses of the interview data, the major themes as well as the sub-themes in the data were identified. Along with the identification of the themes, the analysis was implemented by the researcher to check the themes and the sub-themes against the interview transcripts to see whether the stories were convincing. During this process, the thematic analysis of each theme was carried out stating the main points clearly by extracting from the interview transcripts coherently. The interview reports were written and followed by the data analysis by relating the thematic categories to the literature to make arguments on constructing the quantitative measurement of successful principal leadership.

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3.5.1.3 Study Three: Expert Panel

In this study, the researcher invited the supervisor who has more than 10 years' research experience in educational leadership and PLC fields to review the process and results of the qualitative research in order to enhance the validity of the project. Meanwhile, two principals and two teachers with more than 20 years working experience, who were previously interviewed in Study Two, were invited to participate in the individual interviews. The individual interviews with the experts were conducted to examine both the process and the results of the data analysis towards an understanding of principal leadership and the impact of principal leadership on PLCs in ECE in China. Meanwhile, the dimensions and the items under each dimension of the principal leadership instrument in ECE were examined. The experts' suggestions were adopted to refine the process of the data analysis and to revise the instruments. Each interview lasted for around half an hour. The quantitative measures for the next phase study were constructed by integrating the data analysis results and the existing literature.

3.5.2 Phase Two: Quantitative Strand

There was one quantitative study in the quantitative strand. The focus of this strand was to establish structural validity for the newly established successful principal leadership model and identify the one-way relationships between principal leadership and PLCs.

3.5.2.1 Study Four: Survey Study

The aim of Study Four was to establish structural validity of the newly established

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quantitative measure by confirming dimension structures, reducing unfitting items, and adding uncovered items through conducting the on-line survey with the participating principals and teachers.

Sample and Recruitment. The sampling strategy and participants recruitment were the same as the previous study. Invitations were sent online to the potential participants who were kindergarten principals and teachers in Yunnan Province. A total of 556 questionnaires were collected. After the data cleaning, 533 valid responses were retained for data analysis in the next chapter. Amongst these responses, 204 questionnaires were from kindergarten principals and the other 329 questionnaires were from kindergarten teachers. The demographics of the 533 participants in Study Four are summarised in Table 3. Meanwhile, the 204 questionnaires from the kindergarten principals were collected from 196 kindergartens in Yunnan Province. The exemplary kindergarten took 47.4% of the principal sample. The 329 teachers' questionnaires were collected from 34 kindergartens with 66.7% responses from the exemplary kindergartens.

Table 3

Summary of Demographics of 533 ECE Professionals in Study Four

Group		No. of Sample	Percentage of Sample
Position	Principal	204	38.3%
	Teachers	329	61.7%
Age (years)	20-30	248	46.5%
	30-40	173	32.5%
	40-50	91	17.1%

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	Over 50	21	3.9%
Gender	Female	498	93.4%
	Male	35	6.6%
Work Experience in ECE (years)	1-5	223	41.8%
	5-10	99	18.6%
	10-15	80	15.0%
	15-20	60	11.3%
	20-25	54	10.1%
	Over 25	17	3.2%

Instrument. The survey instrument contained the quantitative measure developed in Phase One and the Professional Learning Community Scale (PLCs) (See Appendix Three). Specifically, the successful principal leadership instrument (SPLI) was developed based on the findings of the qualitative phase. The SPLI consisted of five subscales: set directions (six items), build relationships and develop people (six items), develop the organsiation to support desired practices (six items), improve the instructional programme (six items), and demonstrate professional and moral models (four items). The PLCs instrument was adapted from Chen (in press) and consisted of five subscales: shared visions and values (four items), shared and supportive conditions (four items), shared and supportive leadership (four items), shared collaborative professional capacity (four items), and shared individual professional capacity (four items). An online questionnaire was used for the data collection. The questionnaire used a 6-point Likert scale that had symmetric agreement without a neutral point. It took approximately 25 minutes for each participant to complete the questionnaire.

Data Analysis. Exploratory Factor Analysis (EFA) and Confirmative Factor

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Analysis (CFA) were used for the data analysis to examine the structural validity of the two instruments. The EFA was conducted first to examine the dimensions of each instrument in SPSS 26. Then, CFA was implemented to confirm the model of the instruments in Mplus 8.6. As missing data can bias estimation results, full information maximum likelihood estimation was used to handle any found (Enders, 2010), which is commonly used in EFA (Dong & Peng, 2013). The assessment of the two measurement models, namely the SPL model and PLCs model, were accomplished at first. Specifically, the models were assessed by conducting confirmatory factor analysis (CFA). The multi-criteria method was applied to estimate the acceptable model fit (Montoya & Edwards, 2020). The model's goodness of fit was evaluated by using Chi-square statistics, comparative fit index (CFI), Tucker–Lewis index (TLI), standardised root mean residual (SRMR), and root mean square error of approximation (RMSEA). Based on the rule of thumb, model with adequate model fit should be CFI > 0.90, TLI > 0.90, RMSEA < 0.08, and SRMR < 0.05 (Bentler, 1990; Bentler & Bonett, 1980; Hu & Bentler, 1999). The models that met these criteria were not rejected. After validation of the two instruments, structural equation modelling (SEM) was established in Mplus, and the relationships between the five dimensions of successful principal leadership and the five factors of PLCs were identified. The detailed results are reported in the results chapter.

3.5.3 Phase Three: Synthesising Qualitative and Quantitative Data

In Phase Three, the researcher integrated the qualitative and quantitative data in order to address the two research questions. In detail, the quantitative and quantitative data generated in the previous two phases were synthesised to identify: (1) Documentation

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of successful principal leadership in ECE in China; and (2) Identifications of the impact of principal leadership practices on PLCs.

3.6 Reflections on Methodological Concern

3.6.1 Role of the Researcher

The proposed project aimed to fulfill the requirement of my doctoral degree, so I was the sole researcher under the supervision of my supervisors. My role consisted of collecting and analysing the data; meanwhile I was required to keep the data confidential and safe. I built up a trusting relationship with my participants when I was conducting the interviews and collecting the questionnaire surveys, so that the kindergarten principals and teachers would feel comfortable and be more willing to share their perspectives towards principal leadership, PLCs, and the impact of principal leadership on PLCs. As an outside researcher, I had not worked in any of the kindergartens and had not met any of the participants before. My role was to observe and explore the perspectives of the participants towards the two research questions as an outsider. Thus, it was much easier for me to be objective and avoid possible bias. Moreover, I sent the interview transcripts to the participants and asked them to review the content after the interviews, in case their perspectives were captured inaccurately due to researcher bias. Meanwhile, I shared the general results of the project to all the participants for their benefit. However, I was aware of behaving ethically during the whole process of the project and ensured no harm to the participants.

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3.6.2 Trustworthiness

As discussed in Section 3.3, the researcher implemented exploratory mixed methods for the current project. A mixed methods design ensured trustworthiness of the data since the adoption of both qualitative and quantitative research methods achieved data triangulation (Creswell & Clark, 2017). Despite the benefits of integrating both qualitative and quantitative methods together, the challenges and complexity of the process increased as the researcher needed to address the threats to credibility in the qualitative strand and the threats to validity in the quantitative strand. The utilisation of an expert panel, member checking, and data triangulation towards credibility in the qualitative and internal validity in the quantitative addressed the possible threats through the whole process of the project.

3.6.3 Ethical Considerations

The requirements of researching at The Education University of Hong Kong (EdUHK) process were strictly followed. A written approval letter and research application were completed and submitted to EdUHK for approval in order to begin the research project. After the application was approved, the researcher was officially permitted to start the research. All participants in the studies were notified of the voluntary nature of their participation and reminded that all information provided would be confidential and anonymous. Also, all participants were informed that all data would be presented in an aggregated format to protect their confidentiality. All participants involved in this project would not have any potential risk associated with their participation.

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3.7 Summary

In summary, this chapter has discussed the philosophical assumption underpinning the research project. The interpretivism paradigm was chosen and the exploratory sequential mixed methods design adopted to conduct the research based on the research objectives. The selection of the research site and sampling strategy have been described together with the relevant literature. The mixed methods design consisted of four studies. The strategies of the data collection and data analysis of each study have been discussed following the research procedure. Reflections on methodological concern have been demonstrated by highlighting the role of the researcher, trustworthiness of the research project, and ethical considerations. The findings on the data collected in both the qualitative strand and quantitative strand are presented in the next chapter, as well as a synthesis of the qualitative and quantitative data in the format of addressing the two main research questions.

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Chapter Four: Qualitative Findings

This chapter displays the findings of the qualitative studies in alignment with the two research questions. To be specific, it uncovers the analysis results of the interview transcripts which were transcribed verbatim of the interviews carried out in the three qualitative studies. The qualitative phase explored successful principal leadership practices in ECE in mainland China and the impacts of principal leadership on PLCs for corresponding to the research questions:

1. What are the successful principal leadership practices perceived by principals and teachers in ECE in China?
2. To what extent do successful principal leadership practices impact PLCs?

The findings of the qualitative data analysis are demonstrated by the following sections. Firstly, the findings on successful principal leadership practices are presented following the five dimensions generated from the data, namely Set Directions, Build Relationships and Develop People, Develop the Organisation to Support Desired Practices, Improve the Instructional Programme, and Demonstrate Professional and Moral Models. Secondly, the impacts of principal leadership practices in each dimension on PLCs are revealed. Thirdly, a summary of the qualitative findings is given.

It needs to be stressed that the results in the qualitative phase drew on the integration of the responses from both the participated principals and teachers for achieving more comprehensive and in-depth findings towards the current research questions. This decision has been made to better address the research questions of the current project, the data volume management, and the length of the thesis.

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Firstly, the integration of the responses of both the principals and teachers was better addressing the research questions rather than compared the differences between the perspectives between principals and teachers as the following reasons. There were differences between the perspectives of principals and teachers emerged after analysing the 42 interview transcripts. However, the differences mainly offered the different angles and focuses on the same leadership practices. There were no obvious contradictory perspectives from the two different parties demonstrated from the dataset. For instance, kindergarten principals gave the scenarios on setting directions in a comparatively more detailed ways than teachers since principals took the initiatives on building a shared vision (see details in section 4.1.1). Teachers as the participants of constructing and implementing the new directions or visions, they gave the scenarios in more practical ways. This indicated that Chinese kindergarten principals showed their leadership stance towards setting directions for their kindergartens.

Secondly, the data volume of the qualitative phase was vastly rich. Specifically, 12 transcripts of principals' interviews and 30 transcripts of teachers' interviews were composed the data volume. For managing the data volume in an efficient manner and keeping the thesis in a proper length, the qualitative data analysis focused on the complementary of the two data sources rather than digging for their differences.

For the above reasons, I analysed the data by taking the two data sources complement each other rather than comparing the differences. The findings towards the qualitative phase were demonstrated in the following sections.

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4.1 Principals' and Teachers' perceptions of Successful Principal Leadership Practices

As presented in Chapter Three, thematic analysis was adopted in analysing the qualitative data. Therefore, the findings on the successful principal leadership practices are written based on the theme generation process. Moreover, the results of the qualitative data analysis were generated based on both deductive and inductive analyses. The deductive analysis used an organising framework in the literature (Leithwood, 2012; Leithwood et al., 2020) for the coding process. In detail, the interview protocols were designed according to the existing literature on successful school leadership (e.g., Leithwood et al., 2020). The coding framework was constructed mainly based on the Ontario leadership framework (OLF) which comprises four major domains: Set Directions, Build Relationships and Develop People, Develop Organisation to Support Desired Practices, and Improve the Instructional Programme (Leithwood, 2012). Except for the 19 practices included in this framework, scholars (Leithwood et al., 2020) suggest adding 'Participate with teachers in their professional learning activities' into effective leadership practices by acknowledging a key finding from Robinson et al.'s (2008) widely cited review of leadership research.

Therefore, the 20 practices in the four domains were applied to examine successful leadership practices drawing upon the qualitative data. On the other hand, inductive analysis was conducted to derive themes out of the theoretical framework. As a result, a fifth dimension of successful principal leadership was extracted. The new emerging dimension consisted of four practices, focusing on how principals

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demonstrated their professional and moral models.

Additionally, by coding the dataset thoroughly, it has shown that the kindergarten principals exercised these practices during their daily work. However, the ways in which they enacted each practice varied in their own context. Thus, the findings upon the qualitative data not only focused on portraying "what" principals do, but also on "how" and "why" principals do. Detailed elaborations on these findings are presented in the following sub-sections, beginning with the first domain - Set Directions.

4.1.1 Set Directions

The first dimension of successful principal leadership referred to principal further develops teachers' motivations by setting directions clearly (Leithwood, 2015). According to the OLF, it includes four themes: build a shared vision; identify specific, shared, short-term goals; create high-performance expectations; and communicate the vision and goals (Leithwood, 2012). Apart from the four themes, two practices emerged from the data, namely construct the regulation system, and organise the evaluation and ratings of kindergartens. These two new formed themes highlighted the uniqueness of principal leadership practices in ECE in Yunnan Province. The six themes along with supporting excerpts are reported in the following sections.

4.1.1.1 Build a Shared Vision

All 12 principals interviewed enacted this practice and valued it as a significant means to lead kindergartens. Both the principals and teachers gave scenarios on how principals

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built their school vision. The coding results showed that there were 19 examples under this theme. In order to reduce the redundancy, similar responses were grouped, and then the most representative ones were selected based on the principle of clarity, precision, and completeness. As a result, the following examples are listed below.

Principal L, who was the chief principal, shared her way of building a shared vision for her group which consisted of six kindergartens. She explained her approach quite clearly:

> Our group has a history of more than 70 years, we redefined our vision in the year 2017 as 'Learning from the history, working with parents, providing a distinctive curriculum system covering courses in five major fields for the holistic development of children'. So, we were sorting out the courses and we wanted to combine the community resources such as the local natural resources to develop biodiversity curriculum. Since our kindergarten is very large, with 24 acres of outdoor space, and the ecological environment is much better than the urban area. (Principal L, November 16, 2021)

Principal L connected her kindergartens with the community closely, and she integrated the schools with their wider environment. The vision made teachers in the six kindergartens know clearly about their aims on school development, especially the vision which highlighted building relationships with parents and establish the characteristic curriculum system but eventually for holistic child development. As a teacher from L kindergarten stated:

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> Our chief principal announced the vision to us in the weekly faculty meeting. The vision gave us a clear direction on building the curriculum. She was not just proposing the vision she required every teacher in each kindergarten to take actions to achieve the goal. We had to hand-in the work plan in the next faculty meeting, so we knew our focus clearly during our daily work. (Teacher L1, November 16, 2021)

Different from Principal L's practices, Principal C proposed a new shared vision for her kindergarten due to a change of school developmental stage. Kindergarten C became a band one provincial exemplary kindergarten back in 2009, which meant that the kindergarten had reached the highest level of teaching and learning among kindergartens. In 2014, Principal C realised that she had to build a new vision for the school development so as to bring more opportunities for teacher professional development. She stated:

> We needed to build a new shared vision to let teachers know that we still have room for further improvements. We could not let teachers feel that they already reached the ceiling with honour. It was dangerous just like boiling a frog in warm water. Under such circumstances, our new vision 'run an enlightened and warm exemplary kindergarten' was established. Under this vision, we decided to build our kindergarten as the Modern Education Exemplary Kindergarten in Yunnan Province within 3 years after discussing with my faculty. (Principal C, November 4, 2021)

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After establishing a new overall sense of vision for work in her kindergarten, Principal C and her faculty achieved the short-term goal in 2016. Kindergarten C became the first batch of the provincial Modern Education Exemplary Kindergarten. Under the vision, a culture of "*Xing*", which means always taking actions for pursuing excellence, was valued for all of the faculty. More specifically, Principal C believed it would be essential to inspire teachers' vitality continuously on teaching and learning innovation to provide superb education to their students. Meanwhile, she promoted a warm and caring working environment within the school after she had carried out one-on-one conversations with teachers, since such an environment was vital to cultivating positive relationships among teachers, students, and parents. As one of her teachers stated:

> At first, the school vision for us was just a short slogan when we saw it in our kindergarten, we didn't know what we should do to achieve it at that time. Our principal explained the vision to us in our faculty meeting by proposing a series of short-term goals and strategies. We endorsed the vision because we prefer to work in a warm group, and we have the faith that we can achieve the goals collectively under the guidance of our principal. (Teacher C1, November 4, 2021)

4.1.1.2 Construct the Regulation System

Along with building the shared vision, a regulation system had been constructed in Kindergarten C. Principal C recalled:

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> I always believed that it is more effective to manage a school by using a comprehensive regulation system rather than by a principal's supervision. So, we constructed a new regulation system on a basis of our culture. The bottom-up and top-down communication strategies were adopted when discussing the regulations with teachers to stimulate teacher engagement. Teachers were the owners and the designers of our new regulation system; I was the one who sorted out their opinions and suggestions and integrated into a whole document…After the first semester, we implemented the regulation system, we surprisingly found that teachers' behaviour improved. (Principal C, November 4, 2021)

Overall, the vision set up a confirmative foundation for shifting the focus of Kindergarten C to inspire teacher professional development and innovation. The regulation system construction and adoption speeded up the pace of the school turning into excellent. As the Modern Education Exemplary Kindergarten in Yunnan Province, Kindergarten C had also led to the development of other kindergartens. Given the success of Kindergarten C, many kindergarten principals have strongly endorsed this practice. For instance, Principal D shared her experience on updating the regulation system in her kindergarten:

> I was inspired by Principal C's sharing on a conference meeting. When she mentioned the way she constructs the regulation system for her school, I realised that I needed to update the current regulation system in my

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> kindergarten since we have experienced dramatic changes since the last two years. I initiated this work earlier this year, the final draft of the regulations was approved by the management team last week. We will announce it and get comments from teachers on the monthly faculty meeting this month. (Principal D, November 25, 2021)

4.1.1.3 Identify Specific, Shared, Short-term Goals

The examples previously described show generally the ways in which kindergarten principals have enacted this practice. More detailed scenarios on this theme were uncovered from the data. Principal F, for example, introduced three different development phases, namely laying the solid foundation, stimulating teacher professional growth, and enhancing school connotation of Kindergarten F. The first phase was the first three years since its establishment, and Principal F named it as 'laying the solid foundation'. She identified the short-term goals as standardisation of the teaching activities, and environmental creation and construction of facilities and equipment. After that, for the second three years, Principal F focused on 'stimulating teacher professional growth', she stated:

> It took two and half years for us to achieve the first phase' development goals. My teachers and I built our kindergarten together from an empty building into a beautiful school. With the rapidly increasing enrollment number of students, which was from 28 to 140 within the first two years, I realised it was time to build our core competence which was our teacher's professional

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> capacity. The standardised teaching was no longer suitable for the students, and the teaching quality was in need to be improved. So, I set up the goals for teacher professional training and development for the second development phase. (Principal F, December 1, 2021)

Kindergarten F was rated as the band 1 provincial exemplary kindergarten in 2021. Principal F led her staff to achieve this goal by only using 8 years since its establishment in 2013. During the time the interview was conducted, Kindergarten F had just started its third phase development – 'enhancing school connotation'. The principal called it 'the connotative development stage'. They aimed to build their specialty curriculum (*tese kecheng*) and encourage teachers to carry out their own research on pedagogy. Principal F believed it would be achieved since the teachers were committed to the goals.

4.1.1.4 Create High-performance Expectations

As introduced in the previous chapter, the 12 kindergartens which participated in the research project were exemplary schools with excellent performance. However, the principals were still creating high-performance expectations for their staff. The expectations were very much focused on helping teachers to achieve their professional growth, rather than meeting external accountability demands (Gurr et al., 2018). As Principal A stated:

> I have worked as a principal for almost twenty years. During these years, I

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> witnessed the rapid development of the kindergartens. For keeping our competitive advantages, we must go beyond. It is like rowing a boat upstream, and if you stop moving forward, you fall back. (Principal A, October 21, 2021)

It sketched out the necessity for principals to enact this practice in order to make their schools more successful. The principals, however, have often faced the challenge of motivating the teachers who were experiencing a period of job burnout. One teacher shared her experience:

> After being a class teacher for five years, I gradually lost my passion on teaching. The high demanding daily work kept me from thinking about teaching and learning. When my principal noticed that I was in this state, she talked to me intently about her expectations on our teachers. She was not forcing us to be the best at everything, but to be respectful of the profession and responsible for our own development. Through the in-depth conversation, I adjusted myself quickly and now I enjoy the moment that students got achievements on my class. (Teacher C3, November 4, 2021)

4.1.1.5 Organise the Evaluation and Ratings of Kindergartens

Apart from creating high-performance expectations, one of the teachers described how her principal impacted their motivation and commitment by organising their kindergarten to participate in evaluation and rating:

> When our principal communicated with us that she would lead us to pass the

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> rating of the first-class kindergarten, some of us were resisting because it would greatly increase our workload and the daily work already made us exhausted. After our principal knew our concerns, she designed a detailed plan for individual workload towards the rating and explained to us the reasons why we needed to pursue a higher rating result patiently. During the process of the rating, our principal supported us whenever we needed her. She never let us work overtime, but she was always the last one to go home. Being given this kind of support and caring, my colleagues and I felt obliged to assist our school pass the first-class kindergarten rating. (Teacher A2, November 16, 2021)

Eventually, Kindergarten A passed the rating successfully based on the hardworking of all the faculty within 3 months. One of the teachers recalled her memory and stated:

> Our principal impressed me deeply since she led us to pass the rating. Our kindergarten became a school with a clear path of curriculum construction. Before the rating, we did not have our own specialty; we even had no school-based curriculum. (Teacher A1, November 16, 2021)

4.1.1.6 Communicate the Vision and Goals and Monitor the Progress

The ways principals communicated the vision and goals to teachers were mainly by organising the faculty meetings. The middle leaders were responsible for interpretating and delivering the specific goals to individual teachers. Taking Kindergarten K as an

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example:

> We held our faculty meeting twice a year to communicate our goals. At the beginning of the academic year, I presented our yearly objective plan and explained them to our teachers. After the meeting, the grade leaders broke down the annual objectives into monthly goals and delivered them to the head teachers in each class. Another faculty meeting was held at the end of the academic year, I reviewed the achievement of the annual goals and refined the goals for the next year. (Principal K, November 17, 2021)

Kindergarten K was a group which consisted of six individual kindergartens, and Principal K was the chief principal who was in charge of the 6 kindergartens together. It was significant to keep the kindergartens aligned to the shared vision and goals. She shared her leadership with the middle leaders to achieve the goals instead of working by herself. As a middle leader stated:

> Our chief principal held weekly meetings with us to follow up the working progress towards the objectives of each kindergarten. We reported the recent problems to her and discussed with all the middle leaders to find out the solutions. She would not give many detailed suggestions but offered timely guidance and support to us. (Teacher K1, November 17, 2021)

In summary, the findings have described the principal leadership practices towards setting directions for kindergartens. There were altogether six themes generated.

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Among them, four themes were from the OLF model, namely build a shared vision, identify specific, shared short-term goals, communicate the school vision and goals, and create high performance expectations (Leithwood, 2012). Besides, another two unique practices reported by the participants in this project emerged. Firstly, Principal C organised teachers to construct the regulation system aligned with the school's vision and then applied it into practice. This practice accelerated the process of achieving the school's short-term goals. Secondly, Principal A and Principal C organised the evaluation and ratings for their schools for setting directions among their faculty. This practice has been commonly adopted to continuously motivate teachers to pursue academic excellence and superb teaching in Yunnan Province.

4.1.2 Build Relationships and Develop People

The second domain of the successful leadership practices referred to building relationships and developing people, aiming to develop teachers' abilities. It included six themes. Among them, four themes were from the literature, namely stimulate growth in the professional capacities of staff; provide support and demonstrate consideration for individual staff members; model the school's value and practices; build trusting relationships with and among staff, students and parents; and establish productive working relationships with teacher federation representatives (Leithwood, 2012). Since the framework was established based on the study in Ontario Canada, some of the title expressions could not fit into the Chinese ECE context, such as 'teacher federation representatives' in the last theme. Hence, the theme was revised as: establish

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productive working relationships with middle leaders and backbone teachers. Except for these four themes, two themes emerged, namely create an open and fair working environment, and provide humane care for individual staff members. The new developed themes showed the unique characteristics of the context of ECE in mainland China. Detailed findings on the six themes are displayed as follows.

4.1.2.1 Stimulate Growth in Professional Learning Communities (PLCs)

To strengthen teachers' professional capacities, a variety of practices have been adopted by principals. Among these practices, teacher training and professional development were mainly implemented through the teaching research groups (TRGs). Thus, it is more appropriate to state this theme as 'stimulate growth in the professional learning communities' based on the data. Both the principals and teachers interviewed believed that their professional capacities have improved mostly by the activities in the TRGs. Principal J gave a representative example on how she stimulated the professional development of her teachers. In her kindergarten, the TRGs were organised into five different areas: Health, Language, Society, Science, and Art, according to the guidelines for early childhood education. Principal J was the head of the Language TRGs, and she described the ways to stimulate teacher professional growth as follows:

> I planned the teaching research activities aligning with our semester teaching plan to ensure these activities could enhance teacher capacities on their curriculum design and delivering. Before the activities were conducted, I discussed the detailed content with teacher leaders or middle leaders. We

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> focused on how we could develop teachers' professional capacities by combining teaching and learning outcomes. Therefore, various activities were organised based on different types of teachers' needs, such as making up the gaps or pursuing excellence. (Principal J, November 24, 2021)

This is a typical example on illustrating the working mechanism of the TRGs in kindergartens in China. Kindergarten principals were taking the TRGs as the predominant channel to develop teachers. Among the principals interviewed, some of them worked closely with the heads of the TRGs to design activities catering to both the short-term and long-term needs of teachers' professional development. Moreover, some of the principals, such as Principal J, participated in the TRGs in person through the whole process, which was from a needs analysis, designing the activities, conducting the activities, and evaluating the activities. Although the principals' practices were different, they took the TRGs as being one of the most important development engines for teacher professional capacities. This opinion was also supported by the teachers. As Teacher F1, for example, stated:

> The teaching and research activities were held weekly in my kindergarten, my colleagues and I achieved the professional growth together under the supervision of our principal and middle leaders. In this semester, our principal invited ECE experts to give us trainings on how to design the kindergarten environment layout and corner activities. We benefited from this series of trainings on improving our curriculum design and made the

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> corner activities more suitable for children's development. (Teacher F1, December 1, 2021)

Except conducting the teaching research activities in the TRGs, principals implemented other practices to develop teachers' professional capacities. There were two practices mentioned the most. Firstly, the principals built personalised professional development paths for teachers according to their different career development stages. Secondly, the principals sought external opportunities for teachers' professional development.

For the first practice, as in Kindergarten C, both the principal and teachers introduced their echelon teacher development plan which divided teachers into three groups: beginning teachers with less than 3 years teaching experience, experienced teachers with 5 to ten years teaching experience, and backbone teachers. The training and development plans for each group varied in the content and forms. In detail, for the beginning teachers, formal trainings and mentorship were adopted. One excerpt from Teacher C2 demonstrated:

> As a new teacher who just started the career 1 year and 2 months ago, my school offered me a series of formal trainings on how to be a kindergarten teacher in the very first semester. Meanwhile, I was assigned a mentor since the first day I started to be an assistant teacher. We called our mentor '*Shi Fu*'. My *Shi Fu* taught me everything hand by hand, such as writing lesson plans, organising the classes, communicating with children, and so on. After the intensive training and mentorship in the first year, I achieved my

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> professional growth and became a head teacher in K1 class. (Teacher C2, November 4, 2021)

This example reveals the how principals stimulated professional development professional development paths for beginning teachers. Principals commonly adopted mentorship and intensive formal trainings for new graduates. But for the experienced teachers and backbone teachers, principals were more likely to offer them opportunities to visit exemplary kindergartens in other developed countries or regions or participate in workshops and lectures which had been organised by Normal Universities. As the principals recalled:

> We used to have a sister kindergarten in Beijing before the pandemic. We arranged our teachers in batches to visit the kindergarten and follow the positions to learn for a whole week. Almost all the teachers in each position in our school participated, and they reflected and benefited more from this kind of training on improving their professional capacities than traditional class trainings. (Principal K, November 17, 2021)

> One of the most effective ways to stimulate our backbone teacher's professional growth is to let them see the excellent practice and let them realise the distance between the best and excellence. Therefore, I invited ECE experts in universities to deliver lectures on excellent practices in kindergartens and organised our teachers to go to universities to participate

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in workshops. (Principal G, October 25, 2021)

In addition to the practices discussed above which were conducted from the school level, some practices were carried out from the district level. The principals strove for resources and opportunities for teachers to participate in the evaluation of professional titles which had been organised by the Education and Sports Bureau. The promotion on teacher's professional titles offered teachers another path to pursue their professional growth. On the other hand, the accumulation of professional titles would enhance the collective professional capacities of the kindergarten. Therefore, principals integrated their networks in order to acquire more opportunities for teachers to participate in the evaluation for stimulating their own professional growth.

4.1.2.2 Provide Support and Demonstrate Consideration for Individual Staff Members

Besides stimulating the professional growth of teachers as a group, principals also paid close attention to individual staff members in their kindergarten. The principal's perspectives towards this theme were mainly about the learning support that they provided for individual teachers and consideration for their future career development. To make kindergartens more productive learning places for teachers and children, principals advocated "horses for courses (*Zhi Ren Shan Ren*)". Which indicated that the principals possessed clear understandings on the different characteristics of their teachers, both in work and in life. However, it was interesting to find that teachers'

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perspectives were slightly different in which they gave more scenarios on principal's support and consideration for their personal lives rather than working lives only. Thus, a new theme was generated from the data, which referred to principals providing humane care for individual teachers.

4.1.2.3 Provide Humane Care for Individual Staff Members

As stated previously, principals not only offered support and considerations to individual teachers, but also provided humane care for them. Principals and teachers recalled the following incidents:

> For the first semester I became the principal in this kindergarten, I spent most of the time observing and listening. During that time, I got to know Teacher Y who was a very rigid and serious person. She did not enjoy her working life for being a class teacher due to her character. However, I found that her research capacity was outstanding. So, I appointed her as the subject head of the research team and gave her timely support. Now, our national research projects have been submitted and Teacher Y has realised her self-worth. For our school, the learning and teaching atmosphere was activated. (Principal E, November 5, 2021)

> My principal is a considerate and caring person. She always cares about us and supports us. I got sick in January this year. It was a disease of the immune system, which was a bit troublesome. My principal was very concerned about

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> me during the whole treatment period. She called me regularly when I was hospitalised and visited me after I was discharged from the hospital. When I got back to school, she also adjusted my work from a grade leader who takes a relatively heavy workload to a half-day teacher letting me have enough rest until I was fully recovered. (Teacher H2, December 2, 2021)

4.1.2.4 Build Trusting Relationships with and Among Staff, Students, and Parents

The previous two themes mainly focused on developing people, whereas this theme is about building relationships via trust. It has been said that trust acts as both a "lubricant" and a "glue" to decrease friction and promote easy movement among moving elements (Tschannen-Moran, 2014). Amongst the interviews, both principals and teachers reflected that building trusting relationships with and among staff, students, and parents was one of the most significant practices for principals to lead. Except for building trusting relationships, creating a fair and open working environment was considered equally important by principals and teachers interviewed.

For instance, Principal E emphasised the practices for building trusting relationships with parents. Her kindergarten provided integrated education to children aged between 3 and 6, which meant that a small portion of students had a special educational need (SEN). Comparing to mainstream students' parents, it was more challenging to build up trusting relationships with the parents of SEN students. Principal E recalled an incident on establishing trust with parents by solving a parental complaint towards a teacher. She stated one scenario:

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> A SEN student parent was outraged and complained to me that her child was wronged by the class teacher and the child cried hardly after going back home. After I received the complaint, I organised a meeting with the student, parent, and class teacher. We explained to the parent using our professional knowledge towards how to educate and take care of SEN students in detail and with concrete examples. After the meeting, the parent realised that the class teacher was helping taking care of her child professionally. Since then, a trusting relationship has been established as she has positively communicated with the class teacher when she encountered any problems about educating her kid. (Principal E, November 5, 2021)

This example demonstrates how the daily practice of principals have dealt with parent complaints so as to establish trust with them. The principals facilitated teachers on solving parents' questions and doubts using their adequate professional knowledge and experienced communication skills. Simultaneously, their trusting relationship with teachers was established during the process. Such as Teacher G1 who stated:

> I still remember vividly the first time I encountered a parental complaint. The parent was so emotional and shouted at me in front of the school gate. My principal came outside and invited the parent and me into her office to let us review the entire course of the event. After she understood what happened, she explained to the parent why a teacher needed to discipline a child. She protected my dignity as a teacher by requiring an apology from the parent. I

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> was more aware that my principal is trustworthy and has integrity since the incident. (Teacher G1, October 25, 2021)

Apart from this incident, there were several similar stories shared by the teachers which impressed the researcher deeply. They claimed that they felt that their principals looked like big trees behind them offering their solid support, which let them feel reliable and safe. Therefore, when they met difficulties or made mistakes in their work, they did not have any hesitations to knock on their principals' office door for help. The trusting relationships between the teachers and principals were established by each small event which happened during their daily work, which is considered to be both solid and impressive.

In addition, several practices were mentioned on building trusting relationships among the teachers. The principals, for example, organised team building activities frequently in their schools in order to stimulate cooperation and trust among individuals and between teams. Meanwhile, the activities in the TRGs were mostly mentioned by the teachers; they established trust by sharing their professional practices and learning from each other. Such as in Kindergarten G, the principal stated that:

> My philosophy of leading a kindergarten is 'trust the person in position (*yong ren bu yi*)', which means that I trust my staff that they could help the kindergarten to develop sustainably. So, I created the trusting environment by doing it from myself. The teachers in each class, in each grade, in each TRG, they enjoy their work because there is also someone who has got their

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back, even though their workloads are heavy. (Principal G, October 25, 2021)

4.1.2.5 Create an Open and Fair Working Environment

Besides the trusting environment, a fair and open working environment was considered as being another vital element for leading a kindergarten effectively by both principals and teachers. All principals interviewed stressed the importance of being fair and open, especially when they were conducting teacher performance appraisals and teacher promotion evaluation. They designed and implemented a rigorous and well-designed management system including detailed regulations, such as performance management, promotion management, and compensation management. As one principal stated:

> When I was appointed as the principal of this kindergarten, I determined myself to build a fair and open school that teachers pursue. For achieving this aim, I established the management system together with the middle leaders and teachers to ensure that the detailed regulations are fair. These regulation systems facilitated me to create a working environment where teachers can realise their professional well-being. I believe that teachers could still work in a such an environment after I retire if they still run this system. (Principal D, November 25, 2021)

There was a fascinating finding towards building fair and open management systems in kindergartens. In principals' eyes, a key to the successful implementation of the system was empowering teachers and involving them in the process of establishing the system.

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Meanwhile, the principals and the management team reviewed the suggestions raised by teachers and proposed an integrated regulation system which keeps alignment with the school's vision and values. In the process, the principals combined the "bottom-up" and "top-down" strategies to enhance teacher engagement as well as establish trust:

> Not like other kindergartens, our school's regulations and management system was designed from the bottom by us. Our principal conducted a one-on-one conversation with us to investigate our needs at first. Then, the principal and other school leaders reviewed them. Followed by announcing the regulations at the faculty meeting and letting us vote. Lastly, the regulations were implemented under the unanimous approval among all the faculty. As a front-line teacher, I feel that I have the responsibility to follow these regulations since I was one of the creators of them. (Teacher C1, November 4, 2021)

> As a new graduate, it was the first time for me to participate in proposing the performance management regulations. I felt that I was given the right to participate in the important decision-making process. My school leaders valued my voice and gave me feedback formally. I am lucky to work in such a respectful and trusting kindergarten. (Teacher E3, November 9, 2021)

4.1.2.6 Establish Productive Working Relationships with Middle Leaders and Backbone Teachers

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Since the daily work of kindergarten principals and teachers is busy and demanding, to make their work more efficient, the principals worked closely with middle leaders and backbone teachers and promoted de-bureaucratisation and delegated decision-making authority. The purpose of this was to encourage them to take the initiative and responsibility for the groups or work they were taking charge of. The role of the principals was more like a facilitator who provided timely guidance and assistance. The principals formed a variety of effective communication channels to enhance productivity, such as formal regular meetings, and informal observations and conversations. Middle leaders and backbone teachers established their professional confidence by the support from principals:

> In the beginning of each semester, my principal discussed with me the overall objectives of the TRG. Then, I made detailed plans based on the objectives and reported to her monthly on the progress. Meanwhile, I asked for her support if I met any problems that I could not solve. Also, she communicated with me and gave feedback timely if she found aspects for improvement. My principal showed her consideration and trust to me through the whole process, and I became more confident when making decisions on teacher teaching and learning. (Teacher A1, October 21, 2021)

The backbone teachers were mainly responsible for conducting the teacher development programmes in kindergartens. Their roles were different from the middle leaders since they did not have any formal titles. However, the principals interpreted

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them as the ground for teacher development. As one principal recalled:

> I considered the backbone team as one of the engines for teacher professional development. I held regular meetings with them to review their working plans. Take the lesson observation plan as an example, they planned to observe 16 lessons of the beginning teachers monthly to improve their teaching skills. I was arranged to join with them to observe one lesson a week, so we could discuss together on the needs for teacher development. (Principal K, November 17, 2021)

4.1.2.7 Model the School's Value and Practices

Comparing to the principals' perspectives, teachers perceived them as employing modelling in their leadership practice more frequently. The vivid scenarios on principal modelling their school's value and practices came through in the teacher interviews. For example, Kindergarten G was nationally well-known for its innovative curriculum, which has implemented the school-based curriculum since 2010. Principal G was found to be an expert in ECE curriculum and a provincial special-class teacher. One teacher from Kindergarten G commented on her principal:

> My principal is like a rocket, who leads our kindergarten to develop so fast. She always brings us forward-looking ideas on how to innovate curriculum. At the beginning, we could not understand why she worked so hard since our school was already in the first rank. But when we saw how our principal devoted herself fully for providing better education to our kids, we tried our

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> best to keep up with her. She is always the first one to come to school and the last one to leave. Even she is fully occupied daily, she will make time to observe lessons and give us some instructional advice. (Teacher G2, November 17, 2021)

Another example was given by Teacher C3, she described how her principal models the passion on learning and professional development:

> I have worked as the Associate Principal of teaching and learning for 5 years. During these years, I have worked closely with my principal and witnessed the tremendous changes in our kindergarten. She spends all her time with teachers and students, except for going out for some compulsory meetings. She always participates in our discussions on teaching and learning, even some informal discussions during lunch time. She gives us inspiring examples rather than the commanding advice. When we meet teaching problems, she gives us suggestions and sometimes directly demonstrates us in the class to let us learn more intuitively. (Teacher C3, November 4, 2021)

Principal C was found to have the title of Special-Class Teacher with more than 20 years working experience as a class teacher. During the interview with her, she shared with me that she loves teaching and enjoys every moment being with students. As a famous principal at the provincial level, she is the host of a master principal studio. She shared that:

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> Among all the titles I have, I prefer to be called teacher the most. I believe that teaching is the foundation of our professional lives as kindergarten teachers. I still haven't left teaching and occasionally go to the classroom to deliver a lesson to the children, although I've been a principal for many years. I told all the teachers in my school that the most important thing as a kindergarten teacher is to continuously develop teaching skills and professional capacity, because this is our expertise. (Principal C, November 4, 2021)

In a word, there were six themes generated for this principal leadership dimension. The incidents demonstrated above are the epitome of how kindergarten principals build relationships and develop people. Both principals and teachers considered that the six themes to be vital to lead their kindergarten, even to some degree, they perceived them from different angles. Among the six themes, two new themes were reflected in the data. The first one was that principals create an open and fair working environment. The other one referred to principals fostering a caring working environment through providing humane care for individual staff members. The detailed discussions on these two themes are displayed in the discussion chapter.

4.1.3 Develop the Organisation to Support Desired Practices

This dimension referred to creating and sustaining supportive work settings for teachers to achieve the organisational goals. It contained the practices that principals adopted to

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establish both an internal and external supportive environment to facilitate teachers and students achieving the optimised teaching and learning outcomes. Unlike the previous two dimensions displayed, there was no new theme generated from the dataset. However, the ways principals enacted these practices were with their own features. The six themes from the OLF were supported by both principals and teachers interviewed. The findings on these themes are illustrated one by one as below.

4.1.3.1 Build Collaborative Cultures and Distribute Leadership

As discussed in the theme on building the productive working relationships with middle leaders and backbone teachers, the findings have reflected that principals distributed their leadership to middle leaders as well as flattened the school hierarchy to promote collaborative culture. Meanwhile, in fact the principals in China spend a considerate portion of their time on handling many administrative works (Zhang & Pang, 2016). This is the same for kindergarten principals. By facing the demanding workload, principals distribute their leadership to middle leaders and create the collaborative culture. As Principal L stated: “It is impossible to lead a kindergarten only by a principal, I try to establish a kindergarten that teachers take their ownership. I delegate authority to the middle leaders. At the same time, I expect them to be influenced by me to empower our teachers” (Principal L, November 16, 2021). In the same vein, Principal J shared how she exerts the practice as below:

> In the three kindergartens in our group, I believe that all the principals are not authoritarian. My role as a principal is more like a ‘helmsman’ who sets

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> the directions. After the general working plan is settled, my middle leaders (area team leaders and grade team leaders) take full charge of the tasks. I fully empowered them. Likewise, they empowered our front-line teachers to let teachers know what they are doing is recognised and they are capable of achieving the goals. By doing so, my staff gain their sense of honour and belonging. (Principal J, November 24, 2021)

Apart from that, other incidents from teacher's perspectives were undermined from the data to illuminate the leadership practices under this theme. As a middle leader, Teacher A1 recalled: "Not like the principal holding all the power I experienced before, my principal truly delegates her power to us. She gives us the fully autonomy to do the works within our duties. However, I still communicate proactively with her often to make sure that my work does not deviate from the objectives. Sometimes, she also gives me innovative suggestions or ideas from her angle to assist me" (Teacher A1, October 21, 2021). Likewise, one of the class teachers shared an incident:

> I designed flow charts to demonstrate my lessons to parents who want to know about what their kids learn at school. I also stuck them on the wall in the classroom as a reminder for my daily teaching. My principal noticed that one time when she visited my class. She encouraged me to share this practice in our teaching and research meeting. After the sharing, my colleagues agreed that this is a good idea to present our courses. We started to refine the flow charts into more detailed instructions together in the teaching and research

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> meeting since that time. Now, we are making them into a school-level textbook under the supervision of a university professor invited by our principal. (Teacher G3, October 26, 2021)

4.1.3.2 Structure the Organisation to Facilitate Collaboration

As discussed previously, principals flattened the organisational structures for achieving more productive relationships with middle leaders and backbone teachers. Typically, the organisational structure of kindergartens in China has four levels (see Figure 4), namely, Principal, Deputy Principal, Middle leader, and Teachers. However, the principals adjusted the structures flexibly based on the different developmental needs of their schools according to the interview data. To facilitate the collaboration, principals have taken various approaches in building organisations. Principal G shared a practice on promoting teacher collaboration to organise children to learn outdoors:

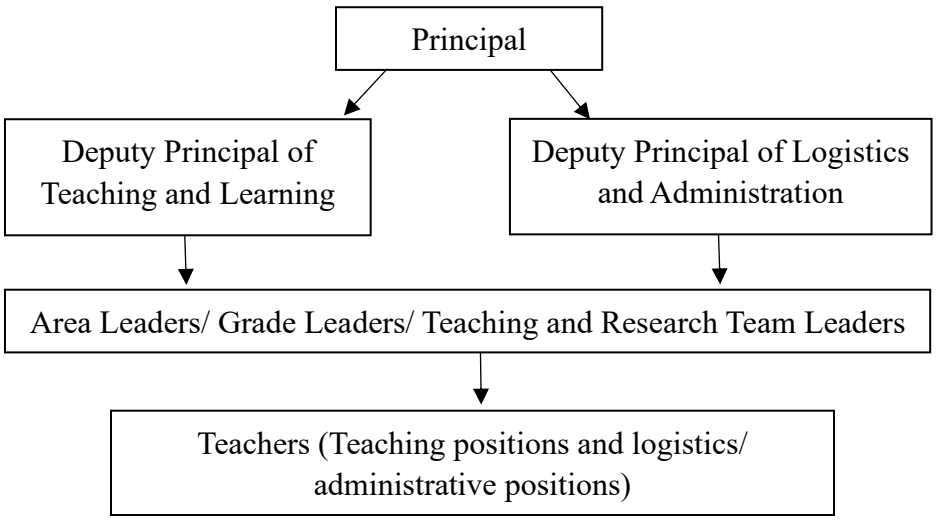
> Every time when we organise children's outdoor learning activities, we need to coordinate several teams together, such as the kitchen for catering, the security team for transportation, and teachers and parents for teaching and supervision. It takes plenty of time to communicate across the teams. So, I set up a working group for children's outing. Each team appoints a colleague to participate in the working group. When we plan to organise the outings, the working group starts to run meetings for collaborating better with each other. The ultimate goal for all the staff is to maintain our students under a safe and healthy conditions when they study outside. (Principal G, October

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25, 2021)

Figure 4

Organisational Structure of Kindergartens in China



In the same vein, the principals adjusted the structure in order to stimulate collaboration on teacher learning and research when they encountered organisational changes. For instance, in Kindergartens A and F, the number of the classes expanded so fast within a short time span. The original organisational structure could not support teacher collaboration well, therefore, the principals established additional departments and disbanded the unsuitable ones. As Teacher F2 recalled:

> With more teachers were employed, my principal created more positions according to the demand. For example, principal established several new departments such as the research department for encouraging teachers to conduct research collaboratively. She also appointed three grade leaders who are responsible for the class teachers. Although we have more levels of the

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organisational structure now, our management is more targeted and clearer. (Teacher F2, December 1, 2021)

4.1.3.3 Build Productive Relationships With Families and Communities

In order to lead the kindergartens more effectively, except for establishing the productive relationships inside the schools, principals made great efforts to build relationships with other stakeholders outside. In building productive relationships with families, consistent with the practices that dealt with complaints from students and parents, principals established both formal and informal communication platforms with families. For instance, Principal I introduced the practice which they carried out for involving families in student's learning:

> We initiated a series of classes that carried out by parents on introducing various professions to students last semester. We sent the formal invitation to each student family and 5 families participated. The class teachers facilitated parents on the class designing and delivering. A certificate from our kindergarten was issued for each family for recognising their participations. Among all the classes, one of the parents is a pilot who shared with children his work. Children from that class were fascinated and the parents also enjoyed the process. (Principal I, November 10, 2021)

Besides, some principals held children education seminars for the families. They provided a platform to parents on communicating with principals about how to help their children develop in more professional ways. The seminars were very popular

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among parents, as Principal G commented:

> In fact, holding seminars is very time consuming but I believe that this is a good opportunity to build the relationships with parents. Meanwhile, families can acquire a clearer understanding of ECE from a professional perspective through the seminars. This lays the foundation for them to recognise and implement the philosophy of educating children in my kindergarten. (Principal G, October 25, 2021)

Apart from that, principals also connected the kindergartens with communities. They established productive relationships with communities to acquire resources for both teachers and students learning and development. As Principal L stated:

> One of my main duties is to create both physical and spiritual environment to develop people, so it is crucial to establish the productive relationships with the surrounding communities such as the district level Education Bureau, Public Security Department, Fire department, and Community. (Principal L, November 16, 2021)

To be more specific, Principal B shared an incident on building productive relationships with the Education Bureau:

> I abide by the rules of the Education Bureau and comply with its management. Meanwhile, I maintain the good relationships with the bureau officials. I can acquire more resource allocation for teacher training and development by

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> doing so. Taking this year as an example, we get the quotas for teachers to participate in the city-level backbone teacher training. In addition, we have two teachers who are going to take part in the district-level backbone teacher evaluation……As well as I sought more positions for faculty in teacher professional title review, our kindergarten obtained ten more positions in different levels last year. (Principal B, December 7, 2021)

4.1.3.4 Connect the School With its Wider Environment

In addition to building productive relationships with internal and external stakeholders mentioned previously, evidence emerged from the interview data and demonstrated that principals connected their school to its wider environment by going beyond the local communities. Three of the principals mentioned that they combined the natural environment and public service institutions around their kindergarten to create their unique curriculum (*tese kecheng*). Taking Kindergarten L as an example:

> Our school has a large area that has 24 acres of outdoor space. The vegetation is much better than that in the city. I would like to launch an ecological environment curriculum to nurture children's understanding towards the concept of life. Let them learn by experiencing in the nature. (Principal L, November 16, 2021)

Teacher B2 also shared the principal's practice on designing their specialty curriculum that combined the public service institutions surrounding the school. Teacher B2 stated:

> Last year, our principal leaded us to launch a 'museum curriculum' which

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> means that we carried out our classes in a way of organising exhibitions in museums. The origin of this curriculum is because nearby our school there are several museums where we organised students to visit semesterly. We found kids were enjoying learning in museums, so our principal started to design the curriculum with us. (Teacher B2, December 7, 2021)

Apart from that, principals connected their school with kindergartens in and outside the province to stimulate teacher professional development. As discussed previously, Kindergarten K maintained long-term cooperation with a kindergarten in Beijing. Likewise, Principal C introduced her school's participation in World Bank projects of the Department of Education. She commented:

> We have participated in the World Bank Projects on assisting the professional growth of kindergartens in other cities and counties in Yunnan Province for years. For example, our teachers went to Zhaotong, Shangri-La, and Chuxiong to guide the teaching of these kindergartens. We should learn first before we guide others, which gives us another direction on teacher professional development. Some kindergarten principals thought that I imposed pressure on myself, but in fact, I did not intend to make our teachers in burden. I hope, through participating these projects, we could realise two aims. First, our teachers would become a life-long learner. Second, our teachers would build their professional confidence through gaining the recognition from a wider environment outside our school. (Principal C,

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November 4, 2021)

4.1.3.5 Maintain a Safe and Healthy School Environment

A safe and healthy environment is crucial to schools, especially for kindergartens in which the majority of the teachers in this research project were female and the students were aged from three to six. During the interviews, principals stressed the importance of maintaining their school as safe and healthy. Meanwhile, they have taken various measures to enhance their school environment. Such as Principal K who raised the cost of hiring a better-quality security team. She stated:

> This year, we spent three times more on recruiting the security guards with the required level of education, professional skills, and age comparing with last year. By doing so, a different image for the school has been set. Our school is the first pilot launched by the Municipal Bureau of Education and Sports, if we can recruit a better qualify security personnel by increasing the cost, then other schools will implement in accordance with our standards. In fact, the security guards take the main responsibility to protect the school from the violence, since all the teachers are female. Not only have we improved the quality of security personnel, but the number of them has also increased. They are divided into three teams to patrol, guard, and monitor. (Principal K, November 17, 2021)

Among all of the twelve participating kindergartens, Kindergarten K was the only one

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that had a professional security team. As Principal K stated, it is a tendency for kindergartens to hire more qualified security personnel to keep the schools safe. The violence incidents in schools have aroused the attention of the Education Bureau, and principals are getting more financial and policy support from higher authorities.

As for maintaining the healthy environment, the principals commented that the Catering Department and the Health Care Office in the kindergartens function as the key roles. Principal F narrated their daily routines for providing a healthy catering to students:

> In my opinion, the kitchen and the classroom are equally important to children's development. Our health practitioners have designed the menus based on children's growth needs. The Catering Department then is responsible for the procurement of ingredients and cooking the meals according to the menus. My middle leaders and I regularly eat our meals with the students to check whether the taste is good and give the feedback to the kitchen to let them adjust. (Principal F, December 1, 2021)

Likewise, Teacher A1 commented about her principal: "Our principal is not only an expert in teaching and learning, but also an expert in cooking and pastry making. She knows the details and give us valuable advice and suggestions to provide healthy and tasty meals for children" (Teacher A1, October 21, 2021).

4.1.3.6 Allocate Resources in Support of the School's Vision and Goals

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Except for the professional practice principals enacted and previously mentioned, they spend a considerable portion of time on administrative practice, especially on allocating financial resources and human resources to support the vision and goals of their kindergartens. For the financial resources, principals implement their allocation according to the annual budget which is managed by the Education Bureau based on the kindergarten size, specifically on the headcount of teachers. Thus, it is important for principals to write the budget report in fulfillment of their school's vision and goals. As Principal H stated: "At the end of each academic year, I have to submit the budget plan including the activities and their expected costs that we will implement next year. Usually, I work with the head of each department to identify the activities for achieving our goals" (Principal H, October 29, 2021).

After the budget plan is approved, principals will allocate funds to each department to conduct the activities accordingly. As for human resources, both principals and teachers illustrated the practices on how principals identifying and exploring the strengths and potential of teachers as well as utilising their strengths to maximise their performance and achieving the mutual growth of the team and also individuals. They believed that the skill of allocating human resources rationally (*zhi ren shan ren*) is one of the most critical elements of a successful leader. As Teacher G3 stated: "Our principal is able to allocate teachers well. Since she has seen a lot of teachers in her decades of working experience, and she has a deep understanding of the different characteristics, strengths and weaknesses of each faculty member" (Teacher G3, October 26, 2021).

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In addition, Principal E stated her practices on how she allocates teachers to complete job assignments in order to achieve the goals of her school:

> Firstly, I am getting to know our teachers in daily work by giving them tasks. Then, I observe their performance during the process of completing the tasks, meanwhile I communicate with them regularly to keep track of progress, give feedback, and offer help if they need. After doing this a few rounds, I am capable of seeing through the different characteristics of the individuals. Therefore, I can allocate the right person or right team for the assignments that we need to accomplish under our goals. (Principal E, November 5, 2021)

Likewise, Principal C narrated an incident of the appointment of the Labour Union Chairman who was mainly responsible for organising employee activities in her school. The position was previously held by a more senior and older teacher, however, with more and more young faculty members joining, it was better to adjust the personnel. Thus, she promoted a class teacher who was good at communicating with young teachers and had innovative thinking. Principal C stated:

> Teacher Wang's professional ability is very strong. Meanwhile, he has a more cheerful personality. There were two main reasons that I promoted him as the Labour Union Chairman. First, he could drive the new teachers to adapt to the working environment fast since he is extroverted and proactive. Second, he could be a bridge between the new teachers and veteran teachers. For

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> instance, he invited the veteran teachers to demonstrate how to fold the quilts for new teachers. In this way, he motivated these young people to learn and let them quickly integrate into the group. (Principal C, November 4, 2021)

In a word, the six themes from the OLF model were generated from the data, namely build collaborative culture and distributed leadership, structure the organisation to facilitate collaboration, build productive relationships with families and communities, connect schools with its wider environment, maintain a safe and healthy school environment, and allocate resources in support of the school's vision and goals (Leithwood, 2012). There was no self-developed theme that emerged from the data. However, the practices illustrated above originated in the ECE sector in mainland China. These findings showed the current situation of principal leadership practices on developing the organisation in ECE, especially in Yunnan Province. The discussion towards these findings will be displayed in the discussion chapter.

4.1.4 Improve the Instructional Programme

The fourth dimension referred to the unique "technology" for realising schools' primary purposes of teaching and learning (Leithwood et al., 2017). In detail, it consists of the practices that principals implemented to improve their instructional programme. There were four themes from the OLF generated from the data. However, two of them were revised according to the data. The first theme *Staffing the instructional programme* was modified as *Provide resources for instructional programme* based on the current dataset.

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Similarly, the second theme *Provide instructional support* was adapted as *Provide instructional support in person*. In addition, a new theme emerged in this dimension, which was *Kindergarten principals hands-on demonstrate the curriculum development and research skills*. The findings on the five themes are elaborated one by one as follows.

4.1.4.1 Provide Resources for Instructional Programme

As introduced previously, there were practices that principals carried out to develop their organisation. They distributed, for example, their leadership to deputy principals and middle leaders on managing teaching and learning programmes. In the same vein, they staffed their instructional programme by assigning appropriate personnel. Meanwhile, as for the organisational structure introduced in the previous dimension, it is the reality that instructional programmes are directly managed by the Deputy Principal of Teaching and Learning in kindergartens. The role of principals was to set the directions and provide financial support.

Besides, it is essential to clarify the content of instructional programmes in kindergartens first. As Principal D introduced: “Our instructional programme contains the semester instruction plan, teaching competition, and teaching and research activities” (Principal D, November 25, 2021).

For staffing activities including instructional programmes, principals mostly delegated the power to their Deputy Principals. For instance, Principal A shared:

> The Deputy Principal is responsible for the development of the instruction programme as well as staffing all the activities. I communicate with her the

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direction and the focus of instruction for the new semester. Meanwhile, if she meets any difficulties on arranging the personnel, she could seek assistance from me. (Principal A, October 21, 2021)

These examples have demonstrated the staffing within the kindergartens. Sometimes, principals invited experts outside to enhance the quality of their instructional programme. As Teacher K2 stated: "It was hard to make a significant improvement on instruction quality by our existing staff in a short time, so our principal imported the experts from District to deliver trainings and give us on-site guidance to improve our teaching quality" (Teacher K2, November 17, 2021).

4.1.4.2 Provide Instructional Support in Person

There were two major practices that emerged from the data on principals to provide instructional support to teachers in kindergartens in China. These included observing lessons (*tui men ting ke*) and holding lesson/teaching competitions (*ke sai*). The evidence on these practices is illustrated one by one below.

First, principals took lesson observations as one important means to provide instructional support. They gave a specific name of this practice "*tui men ting ke*" which means that the principals walked into classrooms randomly without making appointments with teachers in advance. In some of the kindergartens the researcher visited, the times of lesson observations that principals and other school leaders needed to accomplish weekly were explicitly defined. Some principals indicated that if they

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had time, they would go to classes to observe lessons. For example, in Kindergarten H, the management team members had to observe no less than 12 lessons per week. They spent more time on the lessons of new teachers. As Principal H stated:

> I observe the lessons in a fixed class one to two times a week, usually the new teachers' lessons. After each lesson, I communicate with the teacher directly if there is any problem or suggestion. Besides, if we observed common problems in teachers' instruction, the Deputy Principal would coordinate the teachers together to see how these problems could be solved. During the whole process, I play the role as an assistant who supports both the leaders and teachers to achieve the instruction improvement. (Principal H, October 29, 2021)

Teacher A2 commented about her principal:

> If we want to find our principal, it would be better to go to the classrooms instead of her office. As a senior teacher, she almost spends all her time with teachers except on attending meetings and dealing with administrative work. When she goes to the classrooms, she observes not only the lessons, but also the environment creation of each classroom. She always provides us with more visionary advice to improve our instruction. (Teacher A2, October 21, 2021)

Second, principals held lesson/teaching competitions (*ke sai*) in their schools, where

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they acted as the judge who gives professional advice and comments on teachers' instructional practices. Lesson competition is a common practice implemented in kindergartens. As Principal J said: "It is one of the most effective ways to improve teacher's teaching and lesson planning. The participating teachers prepared the lessons with full efforts. The observing teachers directly learn from these merit practices" (Principal J, November 24, 2021).

By organising these activities, two purposes were achieved. On one hand, the activities provided a platform for teachers to demonstrate their teaching practices and learn from each other. On the other hand, teachers gained recognition and motivation on their professional learning. As Teacher G3 who participated in the lesson competition last semester explained: "I did my best on lesson preparation and got the first prize. My principal, who is famous of her teaching and research expertise, gave me so many inspiriting comments and encouraging words. These have strengthened my confidence in teaching" (Teacher G3, October 26, 2021).

4.1.4.3 Hands-on Demonstrate the Curriculum Development and Research Skills

It was impressive to find that principals demonstrated instructional practices including teaching and research hand by hand for teachers. Although the principals had no longer been teaching in classes for years, they have delivered so many lessons in their decades as teachers, that they can identify problems quickly when they observe teachers' lessons. Then, they demonstrated teaching skills for teachers to solve problems. As Teacher C3 recalled:

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> In the initial stage when we launched the children-centred curriculum, it was hard for me to adjust my teaching method from traditional teacher-driven to student-oriented. One time after our principal observed my lesson, she found that I had difficulties to conduct the children-centred curriculum. After we discussed, she delivered a lesson in my class to demonstrate ways of interacting with students to let children lead the class. She showed me vividly how to capture the characteristics of students' expressions and implement the curriculum accordingly. This lesson inspired me to think out of the box and set an example for my future classes. (Teacher C3, November 4, 2021)

Moreover, principals worked with teachers on developing their curriculum, especially they read teachers' lesson plans and gave comments in person. For instance, Principal I reviewed the weekly lesson plans of each teacher to enhance the quality of teachers' lesson preparation. If she found any problems or any area that could be improved, she gave her comments and suggestions. Furthermore, principals guided teachers to enhance their research skills by sharing the personal research experiences. Teacher E2 shared a scenario:

> Our principal guided me to finish the first provincial level research project. As a kindergarten teacher with a bachelor's degree, I didn't have any experience on doing research. When our principal communicated with me about research matters, I did not even know how to start. She encouraged me and guided me the whole process starting from writing the proposal. She

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> revised the draft many times with me and demonstrated me how to conduct a research step by step…When I met any problems, she encouraged me to take initiative. However, she provided support if I could not solve. I got interested in research since that time. Now, we have several research projects going on at the same time. (Teacher E2, November 5, 2021)

4.1.4.5 Monitor Student Learning and School Improvement Progress

Principals took several measures to monitor student learning and school improvement progress. First, they collected and analysed data on children development to monitor student learning, namely children's physical test reports and children's ability development reports, since students' physical development is as important as the growth of their abilities in ECE. Specifically, the kindergarten Health Department conducts students' physical tests semesterly. In addition, principals imported external professional teams evaluate students' ability development. As Principal G introduced: "I invited the professionals in our local Normal University to evaluate our students' ability development annually. I must keep up to date with our students' developmental status, whether they meet the requirements of the five domains for each age group" (Principal G, October 25, 2021).

Based on the result of the two reports, principals adjusted their strategies on student learning. Meanwhile, they captured the progress of school improvement. As Teacher C2 said: "Based on the ability evaluation results last semester, we found that the

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students' throwing ability did not reach the standard level. Therefore, this semester we have designed a curriculum for enhancing this ability" (Teacher C2, November 4, 2021).

Second, as mentioned previously, principals frequently walked into classrooms to observe lessons and environment creation. They monitored student learning and school improvement progress in their daily work. For example, Principal H stated:

> When I observe lessons, I check whether the lessons stick to the teaching plans which were broken down according to school's goals. Meanwhile, I monitor students' learning from students' outputs such as their drawings and handcrafts, as well as their state during the lessons. (Principal H, October 29, 2021)

Third, principals organised formal events to review student learning and school improvement semesterly. They empowered class teachers to monitor and summarise student learning achievements and their contribution to school improvement. Teacher G2 recalled her formal presentation on work summary last semester:

> We held the formal Review Conference at the end of every semester. As a class teacher, I presented our work done on student learning and teacher development, also our contributions to school improvements as well as the deficiencies in the work. Our principal valued this event very much. She gave us comments after listening to our presentations. We took those comments as the focus of the next semester. (Teacher G2, October 26, 2021)

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4.1.4.6 Buffer Staff from Distractions to Their Work

Principals created an undisturbed working environment that buffered teachers from distractions in classes because their teachers' work is demanding, since they not only impart knowledge to students in classrooms, but also have to ensure students' safety both indoors and outdoors. As Principal L stated: "I intentionally arranged all the administrative work during teachers' non-instructional time. Meanwhile, if the administrative tasks can be accomplished at the management level, I would not assign them to teachers" (Principal L, November 16, 2021).

Apart from that, principals helped teachers reduce distractions in the classrooms. They provided support for teachers to resolve conflicts and avoided a chaotic teaching environment. Principal E recalled an incident:

> Now, we have children with special education needs in classes. I told the corresponding teachers to send students to my office when experiencing unstable emotions. By doing so, class teachers could continue to complete their instructions, thus, not affecting other students' learning. (Principal E, November 5, 2021)

In summary, various practices have been illustrated on the five themes, namely provide resources for instructional programmes, provide instructional support in person, hands-on demonstrate curriculum development and research skills, monitor student learning and school improvement progress, and buffer staff from distractions. Among the five themes, the first and the second themes were modified from the OLF model, which has

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indicated that principals in ECE in mainland China implemented these two practices differently. The details are embodied in the examples demonstrated in the corresponding sections. Apart from that, a new theme emerged from the data, which was principals hands-on demonstrate curriculum development and research skills for teachers. It was a distinctive finding that has exemplified the differences of the leadership practices between the principals in ECE and in other school sectors, which will be explored further in the discussion chapter.

4.1.5 Demonstrate Professional and Moral Models

In effect, as introduced in the previous chapter about participants' demographic information, the principals interviewed were found to possess extensive experience in teaching and professional learning. Furthermore, these principals started their career as front-line teachers, who have dedicated decades to the development of ECE in their local area. These remarkable features have made a difference in their leadership practices. Therefore, in addition to the dimensions of the coding framework-OLF, an extra domain of successful leadership practices emerged from the data.

The new emerging dimension was defined as principals exerted their leadership through modelling in professionalism and morality. The fifth dimension contained four themes, namely model a life-long learner, model a high level of professional practice, model a high-level morality, and exert personal charisma. Among these themes, the second theme 'model a high level of professional practice' were adapted from Yin and Zhang's (2018) findings on effective principal leadership. The other three themes were

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drawing on the data. The findings on each theme are shown in the content below.

4.1.5.1 Model a Life-long Learner

With the rapid development of ECE in China in recent decades, principals have acted as life-long learners to keep pace with times. To meet the changing needs of the times, they were constantly updating their mindset and acquiring expertise through continuous learning. Among the interviews, teachers gave so many examples on how they have been inspirated and motivated to pursue life-long learning by their principals. As Teacher G3 stated:

> My principal is a restless person who is always pursuing new ideas and opportunities for teacher capacity development as well as school improvement. Although she has been widely recognised by her compelling professionalism, she keeps on learning and developing her professionalism, and even her daily work schedule is packed. She has often said to us that people are never too old to learn or too busy to learn, and she has also exemplified her words in her work and life as a principal and a teacher. In fact, our colleagues and I have become more proactive in professional learning under her influence. (Teacher G3, October 26, 2021)

Besides, some of the principals did not exert their role-modelling intentionally, but teachers were affected by their values and passion for learning. For instance, Principal C recalled an incident:

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> I often talked to our management team that we should see ourselves as teachers instead of the principals or deputy principals. We cannot detach from teaching and continuous learning. The reason why our kindergarten now has such reforms and innovations is my familiarity and understanding of teaching and learning. I constantly emphasise to teachers the importance of keeping pace with the times. Now, the learning atmosphere has been created in our school, we have different kinds of learning groups for teachers to join freely. Teachers learn in these groups to promote professional growth. (Principal C, October 26, 2021)

Teacher C3 also expressed to us: "Except the words she told us, our principal showed us how to be a self-directed learner through her behaviours. I admire her diligence and humility. I want to be a teacher like her who is knowledgeable and never stop learning" (Teacher C3, November 4, 2021).

4.1.5.2 Model a High Level of Professional Practice

As illustrated previously on the theme 'model the school's values and practices', principals valued their professional expertise as the foundation of leading kindergartens. They demonstrated high level pedagogical skills as well as research ability in their daily work. As Principal D stated:

> I have reached a consensus with my peers once in a seminar, no matter what position we held, we have to enhance pedagogical skills constantly.

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> Otherwise, we cannot guide teacher's professional development. So, I never stop developing myself professionally. Apart from the daily administrative tasks, I spend most of my time staying in classes with teachers and students. I also deliver lessons when the teachers are on leave. (Principal D, November 25, 2021)

Principal D set an example for pursuing excellence in teaching. Teachers in this kindergarten commented that they respect their principal from the bottom of their hearts, and they have learnt teaching skills very intuitively by observing her lessons delivered by Principal D.

One of the teachers said: "After seeing how our principal deliver the lesson to the kids, I became a fan of her. Her class is truly amazing, and I have so much to learn from her" (Teacher D2, November 29, 2021).

Moreover, principals have made great efforts to conduct research on curriculum and subjects. They implemented curriculum reforms and innovations with teachers based on the outputs of school-based research. For instance, Teacher A1 shared the process of the curriculum reform in her school. Before Principal A was assigned in this school, the curriculum they adopted was based on a set of textbooks which were rigidly fixed in terms of the content. Three months after the appointment of Principal A, the curriculum reform was initiated by introducing a school-based curriculum, and teachers started to design their teaching plans by themes rather than the textbooks. By the date of the interview with Teacher A1, the new curriculum had been in place for almost two

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years. It has contributed to the success of the school in the Band 1 Provincial Exemplary Kindergarten Rating. Teacher A1 stated:

> I had been used the textbooks to teach for more than ten years, it was very difficult to me to switch my teaching to theme based. Our principal gave us theoretical guidance and then showed us hands-on demonstrations…She had practiced the school-based curriculum for the past ten years. She is the expert in this field. So, we believed in her that we could make it by doing what she had taught us. (Teacher A1, October 21, 2021).

4.1.5.3 Model a High-level Morality

In addition to being a professional role model, principals' ethical values have an impact on developing teachers morally. In all interviews, every principal mentioned the importance of teacher ethics. As Principal E stated: "No matter how excellent the teacher's professional skills are, I will not hire if her/his moral qualities are not good" (Principal E, November 15, 2021). Principals have prioritised teachers' moral development in kindergartens. Principal G said: "After being a principal for almost twenty years, I am increasingly convinced that the key to a successful leadership is the development of teacher's moral conduct under a shared educational ideology" (Principal G, October 25, 2021).

Principals often shared with their staff good characters that a teacher should possess of with inspirational examples. As Teacher E2 recalled:

> I still remember vividly the speech delivered by our principal in our New

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> Staff Orientation. She shared with us how her mentor '*shi fu*' guided her on her career path and how she passed on to her apprentices. Ultimately, passed on our children who could learn and grow in a caring and professional environment. She talked in a soft and gentle tone, but I could sense her sincerity. From that day on, I determined myself to be a qualified teacher and a qualified mentor someday. (Teacher E2, November 5, 2021)

4.1.5.4 Exert Personal Charisma

Apart from modelling, the most frequently mentioned words were 'principal's personal charisma' by both principals and teachers when the researcher asked them about what the successful principal leadership they perceived. As Principal G stated:

> I believe that a person's personal charisma is very crucial to be a successful principal who could exude the aura that influences the emotions, activities of others subconsciously. Many of my colleagues and my kindergarten teachers told me that they are still committed to working with me, even though I have comparatively higher expectations of the quality on teaching. (Principal G, October 25, 2021)

In the same vein, teachers gave examples on how they were influenced by principal's personal charisma:

> If a principal doesn't have leadership or personal charisma, she/he cannot drive the development of the kindergarten. Take our kindergarten as an

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> example, the amount of our salary is fixed according to the length of working years. So, it is hard to motivate teachers by adjusting their salaries. It is all about our principal's personal charisma, she really mobilises all the teachers, which is a very challenging thing to achieve. This is reason I admire her from the bottom of my heart. (Teacher E1, November 5, 2021)

> I am willing to do whatever our principal assigned me to do without any hesitation or doubt, because she has always been a considerate mentor who has great personal charisma…Actually, our daily work is very busy, we felt really tired physically, but our hearts are full of happiness and energy because of our principal. (Teacher F2, December 1, 2021)

In conclusion, the fifth dimension of the four themes were the distinctive findings apart from the OLF, which demonstrated the significance of the principals' traits and professionalism to successful leadership practices. Different from the leadership practices displayed in the previous four dimensions, the themes generated in this dimension have reflected principals enacting their leadership effectively in a more subtle manner. A more detailed discussion of this dimension is presented in the discussion chapter.

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4.2 Impacts of Principal Leadership Practices on PLCs-Principals' and Teachers' Perceptions

In this section, the findings at the qualitative phase on the impacts of principal leadership practices on PLCs are presented. These findings could partially answer the second research question by offering real work scenarios on the one-way relationship between principal leadership and PLCs have been perceived by both principals and teachers. For keeping the structural alignment, the findings are displayed by the impacts of principal leadership practices in each dimension on the PLCs. It needs to be noted that it was scarce to find concrete scenarios on the impacts of principal leadership on PLCs. More general comments were given by principals and teachers. The impacts of the dimension and set directions are demonstrated first below.

4.2.1 Set Directions

The impacts of the first dimension, Set Directions, on PLCs perceived by principals and teachers are summarised as the following. The participants shared their opinions and gave concrete examples. As Principal A shared her approach on influencing the PLCs in her kindergarten:

> I communicated with my Assistant Principal of Teaching and Learning in the beginning of the semester to emphasise the importance of developing teachers' professional capacity by utilising the formal and informal learning groups, especially our TRGs. I specified the short-term goals for the learning groups to ensure that these objectives were in line with the development goals

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> of the kindergarten. I believe it is essential for me to take a leading stance to set both realistic and forward-looking goals towards our common progress. (Principal A, October 21, 2021)

In addition to Principal A's sharing, the other eleven principals interviewed all mentioned the importance of setting directions on the PLCs. The words they used most frequently are 'Uniformity of thought'. Such as Principal G stated: "I advocate 'everyone thinks the same and fight for the same goals' in my kindergarten, especially within our TRGs" (Principal G, October 25, 2021).

The examples given by teachers show the impacts more intuitively. As Teacher C1 shared:

> The development paths of the TRGs were mapped out by our principal. She gives us clear directions each semester, so our teachers know what to focus on when they take part in the various activities. Consequently, our TRGs have achieved remarkable results on teachers' professional development, for instance, the new teachers have achieved all the basic skills after participating in the special activities for them within four months of starting their career. (Teacher C1, December 4, 2021)

Teacher H1 also stated:

> With the expansion of our teaching force, more professional learning activities were held within different groups. However, it was hard for us to

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> connect these activities with our kindergarten development goals. When our principal noticed this issue, she finetuned the foci of each group. From then on, we would go about the tasks with a goal in mind, which enhanced the efficiency of our learning activities. (Teacher H1, October 29, 2021)

4.2.2 Build Relationships and Develop People

The findings on the impacts of the second dimension, Build Relationships and Develop People, on PLCs are illustrated in this section. Both principals and teachers gave examples on the positive effects of principal leadership practices on the PLCs in kindergartens. Most of the teachers shared their encouraging learning experiences in a collaborative culture that was created by the principals. As Teacher F2 stated:

> Our principal participates in our teaching and research activities weekly. She encourages us to discuss freely by sharing our ideas and practices. She always tells us that we are like a family when we close the door of the meeting room, senior teachers have the responsibilities to assist beginning teachers to grow, vice versa, the new teachers have the responsibilities to bring in new ideas even the ideas are not mature. Gradually, it becomes natural for us to share our practices and viewpoints in the TRGs, and we found this is the best way to learn new things together. (Teacher F2, December 1, 2021)

Similarly, Teacher E1 shared her experience on participating in the City-level Lesson Competition:

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> My principal recommended us to free-form the learning groups for preparing the Lesson Competition. Now, it has become a routine in my kindergarten that each participating teacher has a support team. Take my experience as an example, I was selected as the candidate to participate in the City-level Lesson Competition last semester. I invited my principal and two colleagues to facilitate me through the whole process of preparing the lesson…At last, I got the first prize in the competition. I felt the honour did not belong to myself. It was the achievement of the group. (Teacher E1, November 5, 2021)

In addition, principals gave more general comments on how their practices 'building relationships and developing people' exerted impact on PLCs. As Principal F stated: "I believe that the essence of the effective learning communities is building the trusting relationships at first, so I organise the team building outdoor activities for our teachers every semester to establish trust among them" (Principal F, December 1, 2021). Principal E shared her opinion from another perspective:

> I delegate my Vice Principal of teaching and learning to take full charge of the PLCs, however I monitor the learning outcomes and the research progress of our TRGs at the regular weekly meeting with my management team. We discuss the problems they met also the outcomes they have achieved, and we reach an agreement on dealing with these problems, which is very straightforward and efficient to enhance our PLCs. I prefer to mobilise my management team to stimulate the growth of PLCs rather than lead them by

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myself. (Principal E, November 5, 2021)

4.2.3 Develop the Organisation to Support Desired Practices

The findings on the impacts of the third dimension, Develop the Organisation to Support Desired Practices, on PLCs are illustrated in this section. Both the principals and teachers mentioned the importance of principals providing resources for the TRGs in kindergartens. As Principal A stated:

> For enhancing the effectiveness of the TRGs on teacher professional development, I removed the obstacles for teachers. For instance, I assured that teachers have exclusive time for the TRGs as well as creating an undisturbed learning environment for them. Moreover, I provided them with appropriate support, such as inviting external experts to give them lectures and offer financial resources they needed in the TRGs. Meanwhile, I was also concerned about their psychological wellbeing, so some activities were organised to let teachers feel humanistic care. (Principal A, October 21, 2021)

In the same vein, most of the teachers reflected that principals offered them solid backing in the process of implementing PLCs. As Teacher L1 shared:

> I have the confidence to say that I can be fully engaged when I participate in teaching and research activities, since we take shifts to attend these activities. The application of shifts was developed by our principal, which ensures that there is always a teacher in the classrooms to take care of the students. In

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> addition to this, our principal established a rule that all the activities organised in the formal learning groups should not take up our rest time. So, with her thoughtful planning, we can concentrate on our learning in TRGs. (Teacher L1, November 16, 2021)

In addition, principals promoted the growth of PLCs by monitoring and supervising the activities within PLCs. One principal recalled:

> Except for providing the resources to teachers, it was important for me to monitor and supervise the activities held in the TRGs. For example, some activities were organised for developing professional skills for teachers, so I would monitor the learning outcomes regularly and supervise some activities to ensure that teachers were on track, which makes the TRGs more effective in enhancing teachers' professional capacities. (Principal D, November 25, 2021)

4.2.4 Improve the Instructional Programme

The findings on the impacts of the fourth dimension, Improve the Instructional Programme, on PLCs were limited. There were no concrete examples or scenarios that emerged from the data. Only several general comments were given by principals and teachers, such as "Since I placed great importance on instructional improvement, our teachers were more concerned about their performance in the TRGs. So, their learning motivations were stimulated" (Principal H, October 29, 2021). Additionally, Teacher

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A1 stated: “Our principal trained us how to conduct research in our TRGs, the examples she shared inspired us that sometimes learn in a group is more effective than learn individually” (Teacher A1, October 21, 2021).

4.2.5 Demonstrate Professional and Moral Models

Among the interviews, only teachers gave examples about the impacts of the new developed dimension, and demonstrated professional and moral models, on PLCs. There were no concrete scenarios given by principals; they only expressed their opinions. As Principal G stated: “As a principal, I have to model both professionally and morally to our teachers. For instance, if I expected them to learn collaboratively in groups, I would demonstrate in person first in my daily work” (Principal G, October 25, 2021). Similarly, one of the teachers shared:

> When our principal wants to make a change or give us more challenging tasks in our TRGs, we never doubt her because we believe that she does everything for the sake of our teachers. I cannot tell the exact reason why we have such faith in our principal. She influenced us by her superb personal charisma. (Teacher C1, November 4, 2021)

Apart from the above opinions shared by principals and teachers, some detailed examples were generated. As one teacher recalled:

> Our principal has established a book sharing WeChat group since the start of the pandemic, teachers were freely to join in the group where we could read

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> books together and share our opinions. Until now, we have read hundreds of books within these two years. We are so motivated by our principal who has involved in our reading and discussion of each of the books. I have grown professionally in this informal learning community, and I am sure that my colleagues feel the same as I do. (Teacher I2, October 29, 2021)

Teacher E1 shared her experience in the TRGs:

> I remember vividly the first time our principal participated in the teaching and research activity when she was just assigned as the principal of our school. She observed the whole process of the activity and gave her comment. She told us 'Never envy your colleagues' success, try your best to be excellent as her/his, because you have a common title- teachers in our kindergarten'. She walks her talk by always putting the collective honour in the first place these years. Her high moral character influenced us in subtle, we gradually focused on making overall progress in our TRGs rather than highlighting individuals. (Teacher E1, November 9, 2021)

In a word, the positive impacts of principal leadership in each dimension on PLCs were reflected from the interviews with both principals and teachers. For the first dimension, *Set Directions*, principals in this dataset were highly aware of the importance of setting clear goals for PLCs in their kindergartens. Their practices benefited teachers in PLCs through offering them clear goals. The findings on the impacts of the second dimension,

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Build Relationships and Develop People, disclosed that principals built trusting relationships among teachers. By doing so, a fertile ground for teachers' collaborative learning was established. Moreover, the principals created an open and supportive learning atmosphere among teachers, which stimulated the effectiveness of PLCs in kindergartens. The findings on the third dimension, *Develop the Organisation to Support Desired Practices*, provided a snapshot of how principals create a supportive learning environment in PLCs, such as principals provided resources and offered timely support. Meanwhile, they also monitored the learning outcomes in PLCs regularly to make teachers be more focused. The findings on the fourth dimension, *Improve the Instructional Programme*, were limited. Both principals and teachers gave the general comments on the influence that exerted by the activities organised by principals. The last dimension, *Demonstrate Professional and Moral Models*, was perceived as significant to motivate teachers to learn in a group. Principals set role models for teachers both in terms of professional skills and morality, which enhanced the inner driven forces for teachers learning in PLCs.

4.3 Summary

In general, the qualitative findings contributed to answering the two research questions. For responding to the first research question, a five-dimension model with 27 items (Table 4) was generated to evaluate each content domain relating to successful principal leadership practices in ECE in China. To be specific, six items and one dimension newly emerged from the data; the other 21 items were adapted from previous models in the

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literature (e.g., Leithwood, 2012; Yin & Zheng, 2018). Furthermore, the new established model was refined by two subsequent rounds of content validity. The first-round content validity of the new proposed model was examined by the researcher and the supervisor who has more than 10 years' research experience. After reviewing the 27 items, six items were modified to better describe kindergarten principal leadership practices in mainland China. The second-round content validity of the items was examined by interviewing two principals and two teachers. According to the feedback from the four participants, four items were modified by revising the wording. As a result, the new model contained: *Set Directions* (6), *Build Relationships and Develop People* (6), *Develop the Organsiation to Support Desired Practices* (6), *Improve the Instructional Programme* (5), and *Demonstrate Professional and Moral Models* (4). The structural validity of the new established 27-item instrument was examined in the second phase quantitative study. Meanwhile, the quantitative data for this research were collected by applying the instrument.

The second research question was partially answered by the qualitative findings in this section. All five dimensions of principal leadership positively impacted PLCs in kindergartens perceived by both principals and teachers. Principals stimulated teachers' collaborative learning in PLCs by setting clear goals for the TRGs, building trusting relationships among teachers, creating undisturbed and supportive learning environment, monitoring the learning progress and learning outcomes, organising instructional activities, and modelling in professionalism and morality. These qualitative findings reflected the existence of positive impacts. However, the specific

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paths from principal leadership practices to PLCs were explored through analysis of the quantitative data. Therefore, the findings at the quantitative phase are written in the following section.

Table 4

Successful Principal Leadership Practices-Qualitative Phase Results

Qualitative Findings	
Set Directions (SD)	1.Build a shared vision 2.Identify specific, shared, short term goals 3.Create high-performance expectations 4.Communicate the vision and goals 5.Construct the regulation system** 6.Organise the evaluation and ratings of kindergartens**
Build Relationships and Develop People (BRDP)	7.Stimulate growth in professional learning communities (PLCs)* 8.Provide humane care for individual staff members** 9.Build trusting relationships with and among staff, students and parents 10.Create an open and fair working environment** 11.Establish productive working relationships with middle leaders and backbone teachers* 12.Model the school's value and practices
Develop the Organisation (DO)	13.Build collaborative cultures and distribute leadership 14.Structure the organisation to facilitate collaboration 15.Build productive relationships with families and communities 16.Connect the school with its wider environment 17.Maintain a safe and healthy school environment 18.Allocate resources in support of the school's vision and goals
Improve the Instructional Programme (IIP)	19.Provide resources for instructional programme 20.Provide instructional support in person* 21.Hands-on demonstrate the curriculum development and research skills** 22.Monitor student learning and school improvement progress 23.Buffer staff from distractions to their work
Demonstrate Professional and Moral Models (DPM)**	24.Model a life-long learner** 25.Model a high level of professional practice 26.Model a high-level morality 27.Exert personal charisma

Note. * = Modified from the literature; ** = Self-developed.

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Chapter Five: Quantitative Findings and Synthesis Results

This chapter demonstrates the quantitative findings and the synthesis results of both the qualitative findings and quantitative findings for corresponding to the research questions:

1. What are the successful principal leadership practices perceived by principals and teachers in ECE in China?
2. To what extent do successful principal leadership practices impact PLCs?

In the first part, the quantitative findings were displayed by the sequence of validating the models at the first place and followed by examining the effects of principal leadership on PLCs by establishing the structural model. In the second part, both the qualitative and quantitative findings were synthesised to address the research questions by comparing the similarities and differences between the two datasets.

5.1 Findings at the Quantitative Phase

The results of the quantitative data analysis are reported in this section for answering the two main research questions. For responding to RQ1, the validation of the successful principal leadership (SPL) model was performed. As for RQ2, the assessment of the impacts of successful principal leadership practices on PLCs was conducted by performing a structural equation modelling (SEM). In general, the detailed results are presented according to the data analysis process which consisted of two steps, namely measurement model assessment and adjustment, and structural model establishment.

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5.1.1 Measurement Model

The assessment of the two measurement models, namely the SPL model and PLCs model, were accomplished at first. Specifically, the models were assessed by conducting confirmatory factor analysis (CFA). Then, the descriptive statistics of the models were demonstrated.

5.1.1.1 Measurement Model of SPL

As presented previously, a five-dimension SPL model with 27 items identified in the qualitative study phases was applied as the scale for the quantitative data collection. CFA was performed to assess the SPL model in Mplus by utilising the cleaned dataset. The results showed a poor model fit ($\chi^2 = 29746.246$; df = 595; $\chi^2/df = 49.994$; $p < .001$; CFI = .875; TLI = .865; RMSEA = 0.111; and SRMR = 0.039), which indicated that the model needed to be modified by adding new items or removing redundant items from the current model. Therefore, exploratory factor analysis (EFA) was performed to find out the better options for extracting the items to achieve an acceptable model fit. Combining the EFA procedure and CFA model fit indices, seven items were discarded and eventually, a five-factor model with 20 items was induced. It should be noted that 13 items were adopted from the literature (e.g., Leithwood, 2012; Walker & Qian, 2020) with modifications to fit in the ECE context in China and 7 items were derived from the qualitative data.

The trimmed model was assessed by performing CFA again and generated a good model fit ($\chi^2 = 632.641$; df = 158; $\chi^2/df = 4.004$; $p < .001$; CFI = .967; TLI = .960;

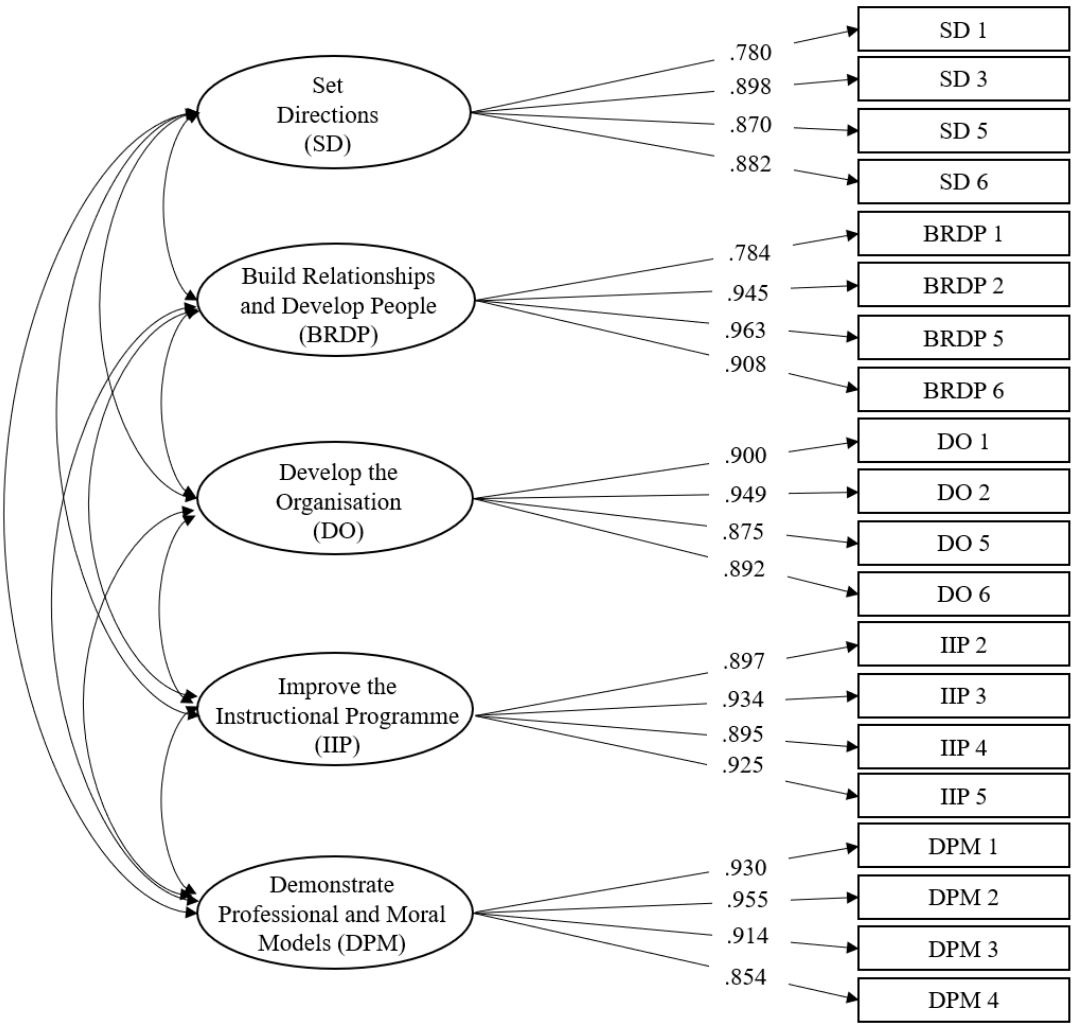
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RMSEA = 0.075; and SRMR = 0.028). Moreover, the internal reliability of each factor in the SPL model was examined. The factor loadings of each item are illustrated in Figure 5. All item loadings were greater than .70, which indicated that the internal reliability of each factor reached the satisfying level. The items were related to each other as separate factors in the SPL model. It is important to note that, the factor loadings of item BRDP 7 and DPM 4 were higher than .950, which indicated that the instrument design might have had redundancy. Although the internal reliability of the SPL model reached the satisfying level for the current project, more studies need to be carried out to optimise the instrument in the future.

Figure 5

Measurement Model of SPL

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The statistical analysis of the trimmed 20 items model is listed in Table 5, including the descriptive statistics (i.e., mean scores and standard deviations (SD)), Pearson correlations, and Cronbach's α. The mean scores of the factors ranged from 5.34 to 5.50, with an average of 5.44. SDs ranged between 0.67 to 0.84, with an average of 0.76. It showed that the participants agreed with the items in a high level in general, representing rather high recognition on the successful principal leadership practices they experienced.

The correlation coefficients (*r*) ranged from 0.679 to 0.923, with an average of 0.826, which suggested that the five factors were highly correlated with each other.

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Comparatively, the dimension of Improving the Instructional Programme (IIP) was least correlated with the other four dimensions. In addition, the Cronbach's α were calculated to evaluate the internal consistency of the main factors of the modified model (Hair et al., 2013). The results fell into a deemed satisfying range with estimates from .915 to .952, suggesting an acceptable level of internal consistency (Hair et al., 2011).

Table 5

Descriptive Statistics, Cronbach's α, and Pearson Correlations of the SPL Model (N=533)

SPL Model	Mean	Std. Deviation	Cronbach's α	Correlation coefficients (*r*)			
				F2	F3	F4	F5
F1. SD	5.45	0.75	0.915	.813**	.786**	.679**	.728**
F2. BRDP	5.47	0.75	0.936	—	.923**	.826**	.872**
F3. DO	5.50	0.67	0.944		—	.837**	.886**
F4. IIP	5.34	0.84	0.952			—	.905**
F5. DPM	5.43	0.79	0.950				—

Note. **p< 0.01 (two-tailed).

5.1.1.2 Measurement Model of the PLCs

The PLCs model had 20 items pointing to five dimensions (i.e., shared visions and values, shared and supportive conditions, shared and supportive leadership, shared

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collaborative professional capacity, and shared individual professional capacity). CFA was performed to check if this PLCs model fit the actual data, and the results showed a good model fit (χ^2 = 603.614; df = 157; χ^2/df = 3.845; p < .001; CFI =.971; TLI =.965; RMSEA = 0.073; and SRMR = 0.019). The internal reliability of each dimension in the PLCs model was tested. The factor loadings of each item are demonstrated in Figure 6. The results showed that the item loadings were greater than .70 pointing to a high level of internal reliability of the items.

Figure 6

Measurement Model of the PLCs

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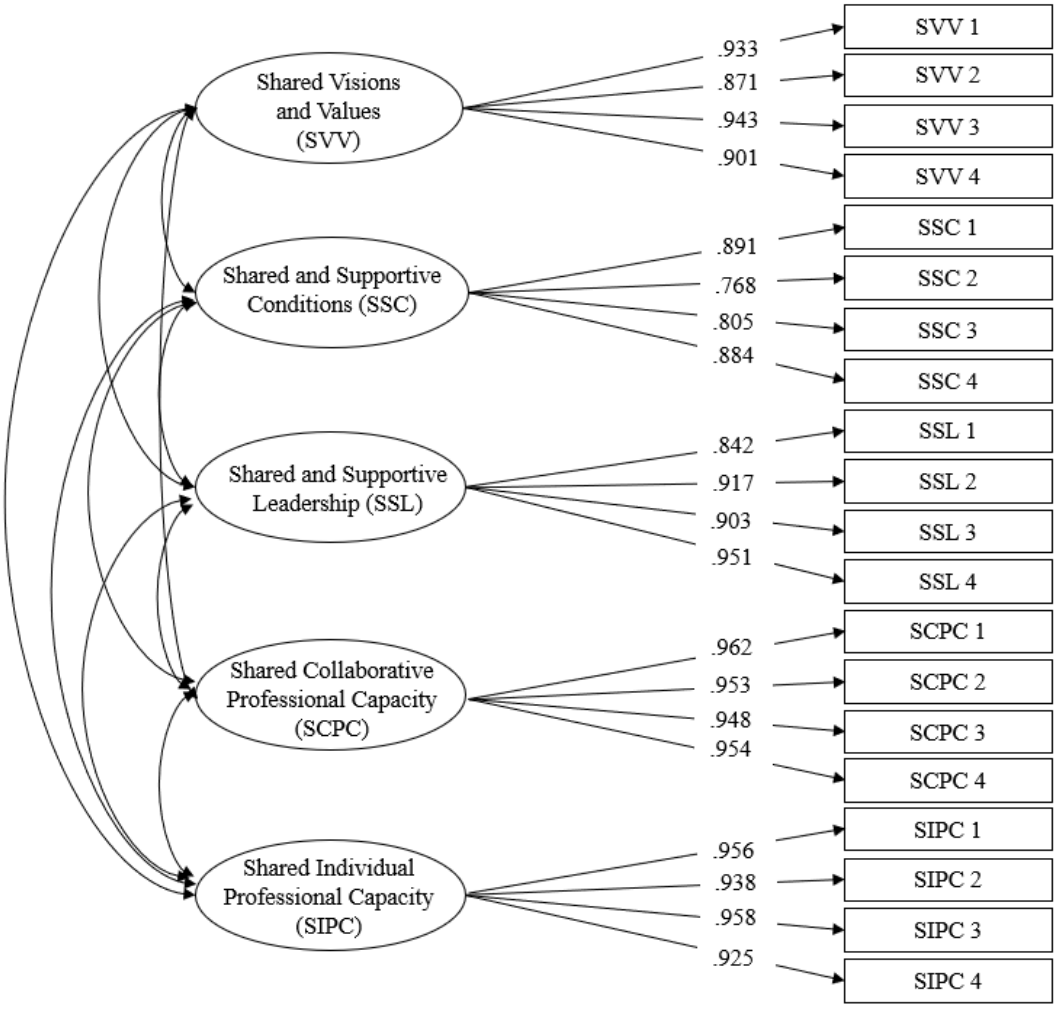


Table 6 shows the statistical analysis of the PLCs model. The mean scores of the five factors ranged from 5.26 to 5.35, with an average of 5.31. SDs ranged from 0.73 to 0.80, with an average of 0.77. The correlation coefficients (*r*) ranged from 0.764 to 0.893, with an average of 0.817. The Cronbach's α ranged from 0.73 to 0.80 with an average of 0.95.

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Table 6

Descriptive Statistics, Cronbach's α, and Pearson correlations of the PLCs Model (N=533)

PLCs Model	Mean	Std. Deviation	Cronbach's α	Correlation coefficients (*r*)			
				F2	F3	F4	F5
F1. SVV	5.26	0.80	0.952	.832**	.795**	.768**	.783**
F2. SSC	5.35	0.73	0.911	—	.863**	.835**	.773**
F3. SSL	5.28	0.79	0.949		—	.893**	.764**
F4. SCPC	5.34	0.74	0.974			—	.865**
F5. SIPC	5.30	0.77	0.970				—

Note. $^{**}p < 0.01$ (two-tailed).

5.1.2 Structural Model Establishment

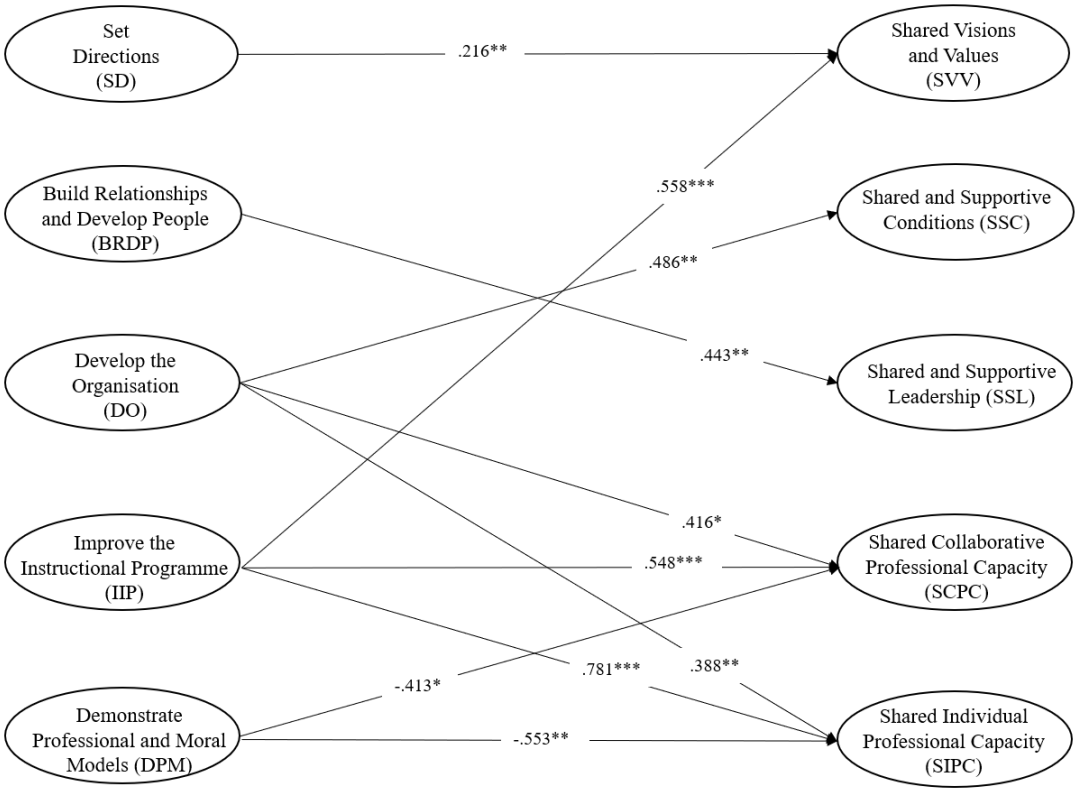
Based on the literature reviewed previously as well as the findings at the qualitative phase, this project hypothesised that the different dimensions of successful principal leadership practices could exert impact on the PLCs. SEM was performed to examine whether the hypotheses should be rejected in Mplus. The results demonstrated a good model fit to the data (χ^2 = 2181.742; df = 691; χ^2/df = 3.157; $p < .001$; CFI =.952; TLI =.946; SRMR = 0.027; and RMSEA = 0.064 with 90% CI = .061-.067). It should be noted that one item in the fifth dimension of the PLCs model was removed for achieving the acceptable model fit.

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The structural model identified ten regression paths from the dimensions of SPL to the PLCs dimensions. The beta value (β) of all paths ranged from -.553 to .781 with an average of .287. The results indicated that the dimensions of the successful principal leadership practices had impacts on the PLCs dimensions, which partially answered RQ2. Figure 7 illustrates that the ten paths of the dimensions of successful principal leadership practices could significantly predict the PLCs dimensions in varying degrees. The detailed descriptions of each path are written below.

Figure 7

Structural Model



Note. *** $p < .001$; ** $p < .01$; * $p < .05$ (two-tailed test)

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The first dimension of SPL, Set Directions, only significantly correlated with the first dimension of PLCs. The coefficient between the factors was at .216 ($p < .01$), indicating that when Set Directions perceived increased by 1 SD (standard deviation), participants' recognition on Shared Visions and Values (SVV) also increased by .216 SD.

Likewise, the second dimension, Build Relationships and Develop People (BRDP), positively correlated with Shared and Supportive Leadership (SSL) which was the third dimension of PLCs ($\beta = 0.443$, $p < .01$).

The third dimension Develop the Organisation (DO) had significantly direct effects on PLCs through three paths. Specifically, DO was positively associated with Shared and Supportive Conditions (SSC), Shared Collaborative Professional Capacity (SCPC), and Shared Individual Professional Capacity (SIPC) with the coefficients of .486 ($p < .01$), .416 ($p < .05$), and .388 ($p < .01$) respectively.

There were also three structural paths between the fourth dimension of SPL and the factors of PLCs, which indicated that the dimension Improve the Instructional Programme (IIP) had impacts on the three dimensions of PLCs, namely, Shared Visions and Values (SVV), Shared Collaborative Professional Capacity (SCPC), and Shared Individual Professional Capacity (SIPC) ($\beta = 0.558$, $p < .001$; $\beta = 0.548$, $p < .001$; $\beta = 0.781$, $p < .001$).

Unlike the results above, the last dimension of SPL was negatively related to the PLCs factor. In detail, Demonstrate Professional and Moral Models (DPM) had negative impacts on Shared Collaborative Professional Capacity (SCPC) and Shared Individual Professional Capacity (SIPC) ($\beta = -0.413$, $p < .05$; $\beta = -0.553$, $p < .01$).

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5.1.3 Summary

To sum up, the two measurement models, namely SPL and PLCs, were confirmed with good model fits. The SPL model was finally confirmed to be a five-dimension model, including Set Directions, Build Relationships and Develop People, Develop the Organisation to Support Desired Practices, Improve the Instructional Programme, and Demonstrate Professional and Moral Models. The number of the items reduced from 29 to 20, and eventually, there were four items in each dimension. The PLCs model was confirmed with five dimensions including Shared Visions and Values, Shared and Supportive Conditions, Shared and Supportive Leadership, Shared Collaborative Professional Capacity, and Shared Individual Professional Capacity.

Moreover, one structural model was established with defensible goodness of fit indices. The structural model identified ten regression paths from the dimensions of SPL to the PLCs dimensions. Each of the five dimensions of SPL had significant direct effects on PLCs. Among these ten regression paths, only the last dimension of SPL was negatively correlated with the fourth and fifth dimensions of PLCs, and the other eight paths all demonstrated positive effects.

5.2 Synthesis Results

In this section, the qualitative and quantitative results have been integrated to address the two research questions. The similarities and differences between the findings at the two types of datasets are explored for gaining deeper understandings of the successful principal leadership in ECE in China as well as its impacts on PLCs. The findings of

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the result synthesis are displayed in the sequence of respond each research question. Then, the summary of this section is given.

5.2.1 Research Question 1: What are the successful principal leadership practices perceived by principals and teachers in ECE in China?

A comparison of qualitative and quantitative findings on the successful principal leadership practices is implemented for achieving deeper interpretation of the current mixed methods research. Both the similarities and differences between the findings of the two different datasets are summarised in Table 7.

Table 7

Results Synthesis on Successful Principal Leadership Practices

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<table>
<tr><th colspan="2">Qualitative Findings</th><th>Quantitative Findings</th><th>Interpretation</th></tr>
<tr><td rowspan="6">Set Directions (SD)</td><td>1.Build a shared vision</td><td rowspan="23">1.Seven items were discarded (highlight in gray in the left column) to avoid the redundancy and eventually a five-factor model with 20 items was induced.

2.The descriptive statistic of the 20 items Model.

n=533
<table><tr><th>Dimensions</th><th>Mean</th><th>SD</th></tr><tr><td>SD</td><td>5.45</td><td>0.75</td></tr><tr><td>BRDP</td><td>5.47</td><td>0.75</td></tr><tr><td>DO</td><td>5.50</td><td>0.67</td></tr><tr><td>IIP</td><td>5.34</td><td>0.84</td></tr><tr><td>DPM</td><td>5.43</td><td>0.79</td></tr><tr><td>Overall</td><td>5.44</td><td>0.76</td></tr></table></td><td rowspan="23"><u>Similarities:</u>
The new developed model generated from the qualitative findings is confirmed further by the quantitative findings.

<u>Differences:</u>
The seven items identified in the qualitative phase are removed according to the quantitative results.</td></tr>
<tr><td>2.Identify specific, shared, short term goals</td></tr>
<tr><td>3.Create high-performance expectations</td></tr>
<tr><td>4.Communicate the vision and goals</td></tr>
<tr><td>5.Construct the regulation system**</td></tr>
<tr><td>6.Organise the evaluation and ratings of kindergartens**</td></tr>
<tr><td rowspan="6">Build Relationships and Develop People (BRDP)</td><td>7.Stimulate growth in professional learning communities (PLCs)*</td></tr>
<tr><td>8.Provide humane care for individual staff members**</td></tr>
<tr><td>9.Build trusting relationships with and among staff, students and parents</td></tr>
<tr><td>10.Create an open and fair working environment **</td></tr>
<tr><td>11.Establish productive working relationships with middle leaders and backbone teachers*</td></tr>
<tr><td>12.Model the school’s value and practices</td></tr>
<tr><td rowspan="6">Develop the Organisation (DO)</td><td>13.Build collaborative cultures and distribute leadership</td></tr>
<tr><td>14.Structure the organisation to facilitate collaboration</td></tr>
<tr><td>15.Build productive relationships with families and communities</td></tr>
<tr><td>16.Connect the school with its wider environment</td></tr>
<tr><td>17.Maintain a safe and healthy school environment</td></tr>
<tr><td>18.Allocate resources in support of the school’s vision and goals</td></tr>
<tr><td rowspan="5">Improve the Instructional Programme (IIP)</td><td>19.Provide resources for instructional programme</td></tr>
<tr><td>20.Provide instructional support in person*</td></tr>
<tr><td>21.Hands-on demonstrate the curriculum development and research skills**</td></tr>
<tr><td>22.Monitor student learning and school improvement progress</td></tr>
<tr><td>23.Buffer staff from distractions to their work</td></tr>
</table>

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Demonstrate Professional and Moral Models (DPM)**	24.Model a life-long learner** 25.Model a high level of professional practice 26.Model a high-level morality 27.Exert personal charisma**		

Note. * = Modified from the literature; ** = Self-developed.

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5.2.1.1 Similarities

The findings of the qualitative and quantitative data confirmed that both principals and teachers highly recognised the successful principal leadership practices identified in the current research. As displayed in Table 3, 20 themes in the five dimensions of the successful principal leadership practices were confirmed by integrating the two datasets. The results of the quantitative data analysis further confirmed the qualitative findings. The average mean score of the overall agreement level on these practices reached 5.44 out of 6, which demonstrated high recognitions of both principals and teachers on these practices. The combination of the qualitative and quantitative findings offered more convincing evidence on the successful principal leadership model in ECE in mainland China generated in the current research.

It is necessary to elaborate on the trimmed model confirmed above. The new established model consisted of five dimensions, and each dimension contained four themes. Among the 20 themes, 13 items were adopted from the literature (e.g., Leithwood, 2012; Yin & Zheng, 2018), of which, three items had modifications to fit in the ECE context in China. The other seven items were derived purely from the data. Details of each dimension are demonstrated as follows.

Set Directions

The first dimension of successful principal leadership referred to principals developing teachers' motivations by setting directions for kindergartens. Principals set the direction

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by implementing the four practices, namely, build a shared vision, create high-performance expectations, construct the regulation system, and organise the evaluation and ratings of kindergartens. Among these practices, the first two were adopted from the OLF developed by Leithwood in 2012. The last two practices that emerged from the data, have represented the uniqueness of principal leadership practices in ECE in Yunnan Province. The unique findings leave the room for further discussion by connecting them with literature in ECE both internationally and in the Chinese context.

Build Relationships and Develop People

The second dimension referred to building relationships and developing people by aiming to develop teachers' professional capacity. It consisted of four practices: stimulate growth in PLCs, establish productive working relationships with middle leaders and backbone teachers, model the school's value and practices, and provide humane care for individual staff members. The wording of the first two practices was modified based on the OLF model to better describe real situations in ECE in mainland China. The last practice was self-developed, which showed the distinctive feature of principal leadership practices in a predominantly female community. The finding will also be discussed by relating it to the existing literature in the following chapter.

Develop the Organisation to Support Desired Practices

The third dimension referred to creating and sustaining a supportive working environment for teachers to achieve the organisational goals. It contained four practices:

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build collaborative cultures and distribute leadership, structure the organisation to facilitate collaboration, maintain a safe and healthy school environment, and allocate resources in support of the school's vision and goals. The four practices were all adapted from the OLF model, which demonstrated that kindergarten principals implemented these practices daily to develop their organisation in mainland China.

Improve the Instructional Programme

The fourth dimension referred to the unique "technology" for realising schools' primary purposes of teaching and learning (Leithwood et al., 2017). It comprised four practices: monitor student learning and school improvement progress, buffer staff from distractions to their work, provide instructional support in person, and hands-on demonstrate the curriculum development and research skills. The first two practices were adapted from the OLF. The other two were mined from the data, which highlighted that kindergarten principals hands-on coach their teachers in the aspects of instructional improvement, curriculum development and research skills enhancement. The exceptional practices in this dimension will be discussed further in the discussion chapter.

Demonstrate Professional and Moral Models

The fifth dimension referred to principals exerting their leadership through modelling in professionalism and morality. There were four practices in this dimension: model a high level of professional practice, model a life-long learner, model a high-level

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morality, and exert personal charisma. Different from the leadership practices displayed in the previous four dimensions, the themes generated in this dimension reflected that principals enacted their leadership effectively in a more subtle manner. A more detailed discussion of this dimension is presented in the next chapter.

In a word, the new established model was validated by both the qualitative and quantitative findings. The comparatively good model fit indicated that the model fit in the data of the current research. The newly emerged dimension and practices were reviewed above. Since they were generated purely from the practices perceived by principals and teachers, the theoretical backing for them will be explored in the discussion chapter. Meanwhile, this model also needs further verifications in the future.

5.2.1.2 Differences

The differences between the qualitative and quantitative findings have been mainly reflected in the items discarded after the structural validity of the model. The seven items removed were highlighted in grey in Table 3. For keeping the structure alignment, the findings are discussed following each dimension of successful principal leadership.

Set Directions

In this dimension, two practices were removed after the quantitative phase, which were communicate the vision and goals, and identify specific, shared, short term goals. The practices were adapted from the OLF; meanwhile, they were perceived by both principals and teachers as significant. However, this was not supported by the

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quantitative findings. The possible explanations for the discrepancy will be discussed later.

Build Relationships and Develop People

In the second dimension, it was surprising to find that two practices which attached relatively high importance for building relationships for teacher's professional growth shown in the qualitative phase were excluded in the quantitative phase. The feasible explanations for this knowledge gap will be discussed in the following chapter.

Develop the Organisation to Support Desired Practices

In the third dimension, two practices were removed, namely, connect the school with its wider environment, and build productive relationships with families and communities. That might have been caused by the process of structural validity. The highly correlated items were removed for achieving a good model fit.

Improve the Instructional Programme

In the fourth dimension, one practice was discarded, which was to provide resources for instructional programmes. The same as previous dimensions, possible explanations will be given later.

In conclusion, the differences between the findings at the two datasets have been summarised. There were seven successful leadership practices removed after the quantitative phase. The possible explanations for these discrepancies will be further

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explored in the discussion chapter.

5.2.2 Research Question 2: To what extent do successful principal leadership practices impact PLCs?

Regarding RQ2, the results on both the qualitative and quantitative datasets predicted that principal leadership practices could significantly impact on PLCs. The qualitative findings demonstrated the impacts of the principal leadership practices in each dimension on PLCs in general. As a complement, the quantitative findings were generated by conducting SEM which showed the detailed structural paths between the dimensions in the two constructs. These coefficient paths showed the effects of principal leadership on PLCs more visibly. The similarities and differences have been displayed in Table 4. Detailed descriptions on them are written in the following content.

5.2.2.1 Similarities

As shown in Table 4, the impacts of the four successful principal leadership dimensions on PLCs are proven by both qualitative and quantitative results. However, the quantitative findings offer more detailed influence paths. The details are displayed in the sequence of the dimensions listed in Table 8.

Set Directions

The quantitative results indicated more concrete explanations on the impact of principal leadership. As the quantitative results show that the dimension significantly correlated

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with the first dimension of PLCs, it could be interpreted as shared visions and values in PLCs can be positively influenced by the leadership practices refer to setting directions.

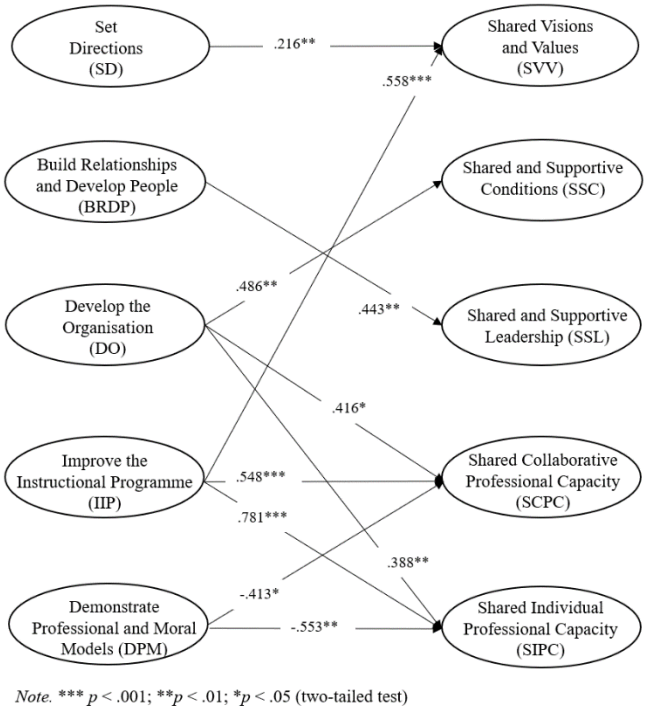
Build Relationships and Develop People

In the same vein, the second dimension of principal leadership positively impacted on the third dimension of PLCs, Shared and Supportive Leadership. The correlation indicated that shared and supportive leadership could be enhanced by leadership practices in the dimension of build relationships and develop people.

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Table 8

Results Synthesis on the Impacts of Successful Principal Leadership on PLCs

Qualitative Findings		**Quantitative Findings**	**Interpretation**
Set Directions (SD)	Principals in this dataset were highly aware of the importance of setting clear goals for PLCs in their kindergartens.	 *Note.* *** $p < .001$; ** $p < .01$; * $p < .05$ (two-tailed test)	**<u>Similarities:</u>** The positive impacts of four dimensions of successful principal leadership on PLCs are supported by the joint of the results at the two datasets. **<u>Differences:</u>** The quantitative findings show that the fifth dimension was negatively correlated with PLCs, which contradicts the findings in the qualitative phases.
Build Relationships and Develop People (BRDP)	Principals built trusting relationships among teachers offering a fertile ground for teachers' collaborative learning. Moreover, they created an open and supportive learning atmosphere among teachers, which stimulated the effectiveness of PLCs in kindergartens.		
Develop the Organisation (DO)	Principals provided resources and offered the timely support. Meanwhile, they also monitored the learning outcomes in PLCs regularly to make teachers be more focused.		
Improve the Instructional Programme (IIP)	Both principals and teachers gave the general comments on the positive influence that exerted by the activities organised by principals.		
Demonstrate Professional and Moral Models (DPM)	This dimension was perceived as significant to motivate teacher to learn in a group. Principals set role models for teachers both in terms of professional skills and morality, which enhanced the inner driven forces for teachers learning in PLCs.		

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Develop the Organisation to Support Desired Practices

Three coefficient paths were shown under this dimension, which indicated that the leadership practices in developing the organisation had significant effects on the three dimensions of PLCs, namely shared and supportive conditions, shared collaborative professional capacity, and shared individual professional capacity.

Improve the Instructional Programme

The impacts of the leadership practices on improving the instructional programme also on the three dimensions of PLCs, namely shared visions and values, shared collaborative professional capacity, and shared individual professional capacity.

In summary, these detailed paths between the dimensions of the two constructs were proven statistically. However, it is hard to interpret these relations without any theoretical backing. Therefore, these findings will be discussed further in the following chapter by connecting to the corresponding literature.

5.2.2.2 Differences

The differences between the qualitative and quantitative findings were embodied in the fifth dimension of successful principal leadership. In detail, the qualitative findings demonstrated that the impacts of the principal leadership practices in the fifth dimension on PLCs were perceived as positive by teachers and principals. However, the quantitative data indicated totally contradicting results. The quantitative results showed that principals demonstrated professional and moral models which negatively

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influenced the two dimensions in PLCs, namely, shared collaborative professional capacity and shared individual professional capacity. Reasonable explanations towards this surprising finding will be addressed in the following chapter.

5.2.3 Summary

In general, the synthesis of the qualitative and quantitative results offered the opportunity to integrate the findings deeper to answer the two research questions in the current mixed-method research. As for RQ1, the integration of the findings in the two datasets confirmed the new established five-dimension successful leadership model that was oriented in the context of ECE in mainland China. However, the one self-developed dimension and seven self-developed themes need to be further discussed by relating them to the existing literature, since they purely emerged from the datasets. In addition, the seven successful leadership practice items removed after the quantitative phase should be reviewed. The reasons for causing these discrepancies will be dig further in the discussion chapter.

Regarding RQ2, the positive impacts of principal leadership practices in the first four dimensions on PLCs were supported by both qualitative and quantitative findings. In addition, more detailed influence paths between the dimensions of the two constructs were also demonstrated. As for the fifth dimension, differences between the findings on the two datasets emerged. The qualitative findings showed positive effects; however, the quantitative results demonstrated the opposite. In a word, the interpretations of the ten paths of the significant correlations between principal leadership and PLCs should

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be theoretically based. Therefore, these findings will be discussed further by relating them to the existing literature in the following chapter.

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Chapter Six: Discussion

This chapter presents the key synthesised findings from both the qualitative and quantitative phases, aiming to highlight the successful principal leadership practices and their impacts on PLCs in the mainland China ECE context. The discussion of the results is organised around the two research questions in the following sequence:

RQ1: Successful principal leadership practices in ECE in mainland China

RQ2: The impacts of the successful principal leadership practices on PLCs

Meanwhile, the interpretation and discussion of the findings are drawn from the wider effective school and successful leadership literature to augment the limited literature originated in the ECE sector. The indigenous five-dimension model of successful principal leadership practices in the context of ECE in mainland China is generated by integrating these findings at the end of this chapter.

Therefore, this chapter is organised into three sections, namely successful principal leadership practices in ECE in China, impact of principal leadership on PLCs, and the model of successful principal leadership in ECE in mainland China.

6.1 Successful Principal Leadership Practices in ECE in China

The focus of this section is on the successful principal leadership practices perceived by kindergarten principals and teachers, combining both the qualitative and quantitative findings in this project. Before the discussion towards the two main research questions of the project, it is necessary to state the meaning of the successful principal leadership in ECE in China revealed in the current project.

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Successful principal leadership in the ECE sector in China was demonstrated by kindergarten principals setting the right and clear directions for their kindergartens, building positive and trusting relationships with and among the internal stakeholders as well as the external stakeholders, allocating resources and acquiring the external resources for developing the staff. Meanwhile, the successful principals putted strong emphasis on instructional improvement and they hands-on demonstrated the curriculum development and research skills for teachers, since they took teachers' professional capacity as one of the most key sources for their kindergartens' competitive advantages. Thus, they allocated the most of their time on improving instruction and developing teachers' competencies. Furthermore, successful principals demonstrated both professional and moral models inside and outside their kindergartens. They possessed of extensive professionalism in teaching and learning. They were the experts in each area of kindergarten operation. They could have absolute authority, but they showed humane care to the individual staff members in their kindergartens.

Baring the meaning of successful principal leadership in mind, the interpretation and discussion of the finding towards the two research questions is organised into three parts. Firstly, the successful leadership practices in common with the previous literature are discussed. Second, the different enactments of successful leadership practices established previously by other scholars are analysed by providing reasonable theorical backings. Although using the same or similar labels of practices, the meaning of the practices behind are different between this project and the existing literature. Thirdly, a new dimension emerged from the current project which was elaborated by connecting

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it with the literature. In general, each of these parts has contributed to an understanding of how the participating kindergarten principals enacted their leadership practices in mainland China. These discussed dimension and themes are italicised to highlight the importance of the findings.

6.1.1 Successful Leadership Practices in Common with the Previous Literature

As Leithwood et al. (2020) claimed "almost all successful leaders draw on the same repertoire of basic leadership practices" (p. 7), the current project found that principals in ECE in mainland China enacted the four sets of effective leadership practices endorsed by previous evidence drawing on abundant international evidence in the primary and secondary school sectors (e.g., Day et al., 2011; Hitt & Tucker, 2016; Leithwood, 2015; Leithwood et al., 2020; Liu & Hallinger, 2018; Sun & Leithwood, 2017). The four dimensions refer to *Set Directions*, *Build Relationships and Develop People*, *Redesign the Organisations to Support Desired Practices*, and *Improve Instructional Programme* (Leithwood et al., 2020).

6.1.1.1 Set Directions

For the first dimension, both principals and teachers interviewed gave adequate real-life work scenarios on principals developed teachers' motivations further on teaching and learning by setting clear directions. Two specific practices in the previous literature within this domain were applied by the principals in the current project, namely, *build a shared vision*, and *create high-performance expectations* (Leithwood et al., 2020)

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(See Table 3). Chinese principals in the ECE sector built the shared vision for their kindergartens by connecting their school with the community, bringing more challenges and opportunities for teacher professional development, and inspiring teachers to pursue excellence. With the establishment of the shared visions, principals held high expectations on helping teachers to achieve their professional growth, rather than meeting external accountability demands (Gurr et al., 2018). As one principal stated: "For keeping our competitive advantages, we must go beyond. It is like rowing a boat upstream, and if you stop moving forward you fall back" (Principal A, October 21, 2021). In a word, the process of building the school vision was more likely to be top-down, and the principals demonstrated their leadership stance of decisiveness and keen sense of future developments in the current project.

6.1.1.2 Build Relationships and Develop People

Several insightful findings revealed that Chinese kindergarten principals were devoted into *building relationships and developing people* and aimed to develop teachers' abilities. They *established productive working relationships with middle leaders and backbone teachers* and *stimulated growth in professional learning communities (PLCs).* As for building the relationships, principals in the current project worked closely with middle leaders and backbone teachers and promoted de-bureaucratisation and delegated decision-making authority. This finding was supported by the research mostly oriented in the ECE sector in Western contexts (e.g., Denee & Thornton, 2018; Heikka et al., 2021b); however this finding still needs further validation to take culture as the

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antecedent of the leadership practices in the future, since high-level power distance was considered as an important feature of Chinese culture (Hofstede, 2011), which indicated that people are more likely to respect leaders and follow instructions from them.

For developing people, Chinese kindergarten principals took the TRGs as the predominant path to develop teachers, which is consistent with the findings from Qian and Walker's qualitative study in the primary school sector in mainland China (Qian & Walker, 2020). In the current project, some of the principals worked closely with the head of TRGs and some of them participated in the TRGs in person, which depended on the level of the maturity of the heads of the TRGs. Apart from the TRGs, principals built customised career development paths for teachers, and strove for external opportunities for teachers' professional development by using their personal connections (*guanxi*), which were also highlighted in the two qualitative studies carried out in the Chinese context with primary school principals (Qian et al., 2017; Walker & Qian, 2020). However, the current project offered more detailed descriptions of the leadership practices in the ECE sector.

6.1.1.3 Redesign the Organisations to Support Desired Practice

As for the third dimension, principals in the current project created and sustained a supportive working environment for teachers to achieve organisational goals through *building collaborative cultures and distributing leadership*, *structuring the organisation to facilitate collaboration*, *maintaining a safe and healthy environment,* and *allocating resources in support of the school's vision and goals* (Leithwood et al.,

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2020). Principals in ECE in mainland China distributed their leadership to middle leaders and flattened the school hierarchy to promote a collaborative culture due to the nature of the demanding workload for kindergarten teachers as well as the extensive administrative work principals have to deal with daily. As Principal L stated: "It is impossible to lead a kindergarten only by a principal…I delegate authority to the middle leaders…I expect them to be influenced by me to empower our teachers" (Principal L, November 16, 2021). Chinese kindergarten principals' enactment of distributing leadership was highly similar to Western practice, such as a study in New Zealand which indicated that principals need to empower teachers to participate in leadership, develop relational trust and supportive structures to facilitate teachers' professional learning for enacting distributed leadership effectively in kindergartens (Denee & Thornton, 2018). However, as discussed previously about the possible influence of the cultural factors (high power distance) on principals' leadership practice, further studies should be carried out on how principals distribute their leadership effectively.

6.1.1.4 Improve Instructional Programme

Kindergarten principals in China applied the fourth domain *improving instructional programme* as the unique "technology" for realising schools' primary purposes of teaching and learning (Leithwood et al., 2017). A study in the secondary school sector showed that teacher's teaching quality is considered by both internal and external stakeholders as the baseline of the schools' success in mainland China (Lai et al., 2017). It is the same in the ECE sector, as two relative legislations introduced by the central

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government in 2012 stressed the necessity of enhancing teachers' teaching quality. Principals in the current project implemented practices in the previous literature to improve their instructional programme for enhancing teachers' teaching qualities, such as *monitor student learning and school improvement progress* and *buffer staff from distractions to their work*. Different from taking examination scores as one of the significant indicators for learning outcomes in the primary and secondary school sectors in China, kindergarten principals took children's physical test reports and children's ability reports as the key measurements to *monitor student learning and school improvement progress*. Besides the two formal semesterly produced reports, principals organised their formal teaching and learning appraisal meetings with teachers as well as they informally observed lessons and environment creation daily.

In a word, the successful leadership practices identified in the current project, which were in common with existing literature were discussed above along with detailed elaborations of the indigenous enactments in ECE in mainland China. As any successful leadership practice is contingent in different contexts (Hallinger, 2018), this section offers a more tangible illustration of the successful principal leadership practices applied by the kindergarten principals. Except for the findings discussed, the current project also revealed several practices enacted differently by the principals in ECE in China compared to the existing literature, which is discussed in the following section.

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6.1.2 Successful Leadership Practices Different from the Previous Literature

The current research project added some new evidence on revealing the indigenous practices of successful principal leadership in ECE since the enactments of principal leadership were shaped by cultural and social contexts (Leithwood et al., 2010). To be specific, five practices distributed in the three dimensions (*Set Directions*, *Improve Instructional Programme*, *Build Relationships and Develop People*) were enacted differently by the principals in the current project compared with the previous literature. Namely, *construct the regulation system*, *organise the evaluation and ratings of kindergarten*, *provide instructional support in person, hands-on demonstrate the curriculum development and research skills*, and *provide humane care for individual staff members.*

6.1.2.1 Set Directions

In contrast to the top-down leadership practices adopted by the kindergarten principals in setting directions for their schools discussed previously, there were two unique practices under this dimension confirmed in the current project. Firstly, principals *organised the evaluation and ratings of kindergarten* to lead their schools to pursue excellence. This finding reflected fierce competitions between kindergartens in China due to increasing social expectations on overall quality of ECE and dwindling student population in the current stage (Li & Li, 2020). Meanwhile, principals in the current project utilised the evaluation and rating of kindergartens as one of the effective practices to stimulate staff motivation and commitments since the upgrading of

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kindergartens would enhance the prestige and influence of kindergartens in the community, as well as import more human and financial resources provided by the Education Bureau. This finding has been echoed by a Chinese commentary that proposed the necessity of kindergarten principals to promote the quality of ECE by implementing scientific evaluation and rating aiming at improvement and construction (Hou, 2022). Hence, the current project has provided insightful practical recommendations to ECE practitioners on organising the evaluation and rating of kindergartens.

Secondly, principals were inclined to *construct regulation systems* with their staff members to assist in clarifying directions when they were in the critical stage of implementing changes in kindergartens. As one principal shared: “it is more effective to govern a school’s change by using a comprehensive regulation system rather than by a principal’s supervision” (Principal C, November 4, 2021). In detail, they constructed regulation systems aligned with their new established school vision or culture by implementing bottom-up and top-down communication strategies among staff members. By doing so, staff members were more conscientious about recognising the re-established rules and regulations developed by themselves. The practice provided a solid foundation for the adoption of the new school vision or direction, thus, allowing the principals to lead changes more efficiently. This finding provided empirical evidence on revealing the successful leadership practices that kindergarten principals applied when they were leading changes in their schools in China, which is rare to find in both Chinese and English literature.

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6.1.2.2 Improve Instructional Programme

The current research project credited the significance of principals improving their instructional programme in kindergartens by demonstrating concrete practices that principals enacted on a daily basis. Among the qualitative interviews, both principals and teachers indicated that kindergarten principals spent a considerate portion of their time in classrooms with teachers. They gave plenty of concrete scenarios on principals *providing instructional support in person*, which is rare to find in the existing literature. In the literature reviewed, scholars have emphasised the instructional leadership roles of principals in primary and secondary schools for the past seven decades (e.g., Day et al., 2016; Gumus et al., 2018; Hallinger 2011). Moreover, research in the ECE sector also found that leaders and teachers are required to be pedagogically qualified and share the vision of high-quality pedagogy (Fonsén & Soukainen, 2020). However, the current project revealed that principals in the ECE sector were more inclined to achieve classroom instruction improvement by observing lessons (*tui men ting ke*) and holding lesson/teaching competitions (*ke sai*) in person. Based on the findings in the current project, the principal's involvement in classroom activities and lesson competitions offered timely instructional support to teachers, which stimulated teacher's professional growth, especially those who were in the beginning stage of their career.

Moreover, for enhancing the overall quality of school instruction, the current project found that kindergarten principal's *hands-on demonstrate the curriculum development and research skills*. This critical finding disclosed one of the unique characteristics of principal leadership practices in ECE, since curriculum development

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and subjects research were mainly carried out by the TRGs in primary schools in the Chinese context (Qian & Walker, 2020; Yin & Zheng, 2018). However, this project found that curriculum development and subject research were mainly initiated from the top down. Although the principals intended to or had already delegated middle leaders to take charge of instructional programmes, middle leaders still needed the assistance of them. On the other hand, this finding also exposed that the professional qualification of kindergarten teachers might be worrisome in the current stage (Li & Li, 2020), as it showed that the major driving force for enhancing the instructional qualities still relied heavily on principals who possessed extensive teaching experience and comprehensive professional competence.

6.1.2.3 Build Relationships and Develop People

Apart from the two practices discussed above, the current project showed that kindergarten principals *provide humane care for individual staff members.* Unlike the practice claimed by Leithwood (2015) that successful principals provide support and demonstrate consideration for individual staff members in the work setting, the new emerging practice in the current project indicated that kindergarten principals not only demonstrated considerations to teachers in their working lives but also provided humane care for their personal lives, such as being considerate and caring for teachers who were experiencing health problems or lactating. Similar with another study oriented in primary schools in China, the authors revealed that principals enrich teachers' well-being and extend care to their personal lives (Walker & Qian, 2020).

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Nevertheless, this successful leadership practice reflects the distinctive feature of Chinese principal leadership in the ECE sector in which the majority of the faculty are female.

Therefore, the differences on successful leadership practices enactments might be caused by female-dominated contexts. Meanwhile, nearly 93.4% of the participants in the current project are female, which might predict a limitation of the project since there might be differences between the leadership practice between female principals and male principals. However, the literature on this issue was rare to find. Although this issue was beyond the scope of the current project but has the necessity to be explored in the future.

In a word, principals in the ECE sector applied leadership practices with distinctive features in setting directions for the development of kindergartens under the influence of social factors in mainland China during the current stage, such as fierce competition among kindergartens, and dramatic changes in the ECE sector. Furthermore, Chinese principals have detailed knowledge of classroom teaching and work closely with teachers on instructional improvement (Walker & Qian, 2020). In the same vein, kindergarten principals attached great importance on instructional improvement in mainland China. However, principals in the ECE sector were more hands-on than principals in other school sectors, which might be caused by less qualified personnel in ECE without taking social and cultural influences into consideration. Moreover, comparing successful leadership practices generated in the Western context, kindergarten principals in China were more inclined to enact their

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leadership practices with the manner of being considerate and caring, which may have been shaped by female-dominated contexts. Overall, further studies are in need to explore detailed mechanisms behind these distinctive findings. Except for these leadership practices discussed, a fifth dimension of the successful principal leadership was derived from the current project, which was *demonstrate professional and moral models.* The details are discussed as follows.

6.1.3 The New Established Dimension-Demonstrate Professional and Moral Models

Apart from the four domains of successful leadership practices acknowledged worldwide, an additional domain was generated from the current project. Comparing the practices discussed in the previous two sections, the practices in the fifth domain reflected that Chinese kindergarten principals effectively enacted their leadership roles in a more subtle manner. The new established domain was named as *demonstrate professional and moral models*, which referred to principals conveying inspirational common values to their staff members. It contained four themes, namely, *model a life-long learner*, *model a high level of professional practice*, *model a high-level morality*, and *exert personal charisma*.

Before going deeper into the fifth domain, the reason for adding it into successful principal leadership is discussed first. As claimed by Leithwood et al. (2020), “a small handful of personal traits explains a high proportion of the variation in leadership effectiveness” (p. 14), which has been affirmed by the current project. Among the qualitative interviews, both principals and teachers stressed the significance of

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principals' personal traits and professionalism on enacting leadership practices effectively. Meanwhile, these findings were validated further by the quantitative dataset. Furthermore, Day et al.'s (2020) latest review indicated that "defining and modelling common values" was one of the key dimensions of successful leadership (p. 6). However, it is rare to find this dimension in existing successful leadership models (e.g., Day et al., 2010; Leithwood et al., 2020). Therefore, the fifth domain was established in the current project. The practices within this domain reflected notable features of the successful principal leadership in the ECE sector in mainland China. The detailed elaborations on the practices are as below. It needs to be stressed that the focus of this section is on discussing the leadership practices enacted by kindergarten principals on conveying common values to teachers instead of their personal leadership resources.

The first practice that emerged was principals' *model a life-long learner* who had the passion and persistence for learning to personal professional development. The middle leaders and teachers were influenced by what the principals had demonstrated during their daily lives, so they were inspired to be more proactive on life-long learning. Meanwhile, kindergarten principals and teachers in the current project perceived that principals model a high-level morality as one of the successful leadership practices. In effect, moral modelling was considered as a unique and significant practice of effective leadership due to the Chinese Confucius culture (Li & Shi, 2008). Although this was established in the business sector, it could contribute to elaborate the significance of the practice- *model a high-level morality.* Among the principals who participated in the current research, they coincided in their belief that "the key to a successful leadership

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is the development of teacher's moral conduct under a shared educational ideology" (Principal G, October 25, 21). This finding shows that kindergarten principals placed great importance on conveying high moral standards to their staff members by self-modelling. Meanwhile, it reflected on another level that both the principals and teachers perceived morality as one of the most critical aspects for a school's success. This finding goes beyond the current leadership literature in education in which the role model of school principals may refer to personal and professional enactment during principalship (Liu & Hallinger, 2017; Yin & Zheng, 2018) without involving moral elements. Moreover, although the role modelling of principals has been mentioned in the literature, this has been not embodied in the successful leadership repertoire (e.g., Day et al., 2010; Leithwood et al., 2020). From this perspective, this enactment has been a unique finding in this project, although the role modelling is not a new practice in the literature.

Along with the moral modelling, principals exerted that their personal charisma was perceived as an essential successful leadership practice in the ECE sector in China. This finding is consistent with a Chinese study in which the authors claimed leader's charisma is one of the dimensions in the instructional leadership model that they developed (Zhang & Yuan, 2018). Both principals and teachers in the current project were convinced that a leader's personal charisma could "exude the aura that influences the emotions, activities of others subconsciously" (Principal G, October 25, 2021). However, the exact mechanism behind this practice is under researched, especially empirical evidence is in need of being added in the future.

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Overall, the newly established fifth dimension of successful principal leadership in ECE was testified in the current project. The newly added dimension complemented the recent most cited four-dimension successful leadership models (e.g., Day et al., 2010; Leithwood et al., 2020) in the previous literature, which stressed that principals exerted successful leadership practices in a more subtle manner-influencing others unwittingly. However, more studies are in need of being conducted on the new added dimension in the future since there is a scarcity of empirical evidence on successful leadership, especially in ECE in China. The current project initially established the theoretical foundation for future research.

6.2 Impacts of Successful Leadership Practices on PLCs

Apart from identifying the successful leadership practices, the current project explored the associations between these practices and PLCs in ECE in mainland China. The results of this research have highlighted that principal leadership practices had significant effects on the five dimensions of PLCs. Of these, four dimensions of principal leadership practices positively impacted on PLCs, however, the fifth dimension was found to negatively correlate with PLCs. In this section, detailed explanations towards these findings are organised into three parts. Firstly, identified correlations between principal leadership and PLCs that have been verified in previous literature are discussed. Secondly, findings on the positive impacts of each successful leadership dimension on PLCs are elaborated. Thirdly, the surprising finding on the negative effects of the fifth dimension of successful principal leadership on PLCs is

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addressed.

6.2.1 Successful Principal Leadership on PLCs: General Impacts

The current research project has indicated that successful principal leadership practices perceived by the principals and teachers had strong effects on the five dimensions of PLCs in ECE in Mainland China. These results lend credence to research findings both internationally and in the Chinese context, which empirically verified the significance of principal leadership on facilitating the factors of PLCs (e.g., Harris & Jones, 2017; Vanblaere & Devos, 2016; Zhang & Pang, 2016; Zheng et al., 2019). Those studies have investigated the effects of different school leadership models (e.g., instructional leadership and transformational leadership) on PLCs in different contexts, however, the results were lacking consistency as the input models were different. Furthermore, instead of focusing on specific leadership models, the current project examined successful leadership practices drawing on the combination of different leadership models. In addition, as stated by Walker and Qian (2015), studies on the effects of leadership in China are consistently lacking. This research project has addressed this gap and provided empirical evidence for principal leadership practices in developing PLCs in the Chinese context.

In more detail, the results of the project specifically examined the dimensional level. The results revealed that four examined successful principal leadership practices had significant and positive effects on the factors of PLCs. The leadership practices positively impacted on PLCs included: set directions, build relationships and develop

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people, develop the organisation, and improve the instructional programme. These findings are consistent with the results of a quantitative study carried out in primary schools in China (Yin et al., 2018), but they complemented the quantitative study by suggesting not only what leadership practices principals enact but also, how they enact them could significantly facilitate the development of PLCs in Chinese kindergartens. Meanwhile, this project also lent credence to the findings of recent qualitative studies (e.g., Qian & Walker, 2020; Wang, 2016; Zhang et al., 2017), which collectively stressed the significance of effective principal leadership practices in facilitating PLCs in Chinese schools. However, the current project credited the finding by adding quantitative and qualitative concrete evidence of the positive correlations.

In a word, the current project unfolded the impacts of successful leadership practices on the development of PLCs in ECE in China with more details, which complemented the identified correlations between principal leadership and PLCs that have been established in the previous literature. To be specific, the project identified the role of principal leadership in the dimension level in facilitating the factors in PLCs, which are discussed in the following section.

6.2.2 Successful Principal Leadership on PLCs- Dimension Level: Positive Impacts

Along with the positive correlations between successful leadership practices and PLCs discussed above, four dimensions of principal leadership practices were identified as significant predictors to PLCs in this project. The positive impacts of successful principal leadership at the dimensional level on the factors of PLCs are demonstrated

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in this section, which contributes to the previous literature by adding more detailed empirical evidence on the specific correlation paths between leadership practices and PLCs factors in ECE in mainland China.

6.2.2.1 Set Directions

The current project showed that principals were highly aware of setting clear goals for PLCs in their kindergartens, as the twelve kindergarten principals interviewed commonly mentioned the importance of establishing the shared visions and values in the TRGs by advocating 'Uniformity of Educational Philosophy'. Kindergarten principals took their leading roles in setting directions for PLCs, such as an approach was supported and endorsed by teachers since they reflected that their collaborative learning became more efficient with a clear goal in the PLCs. This qualitative finding was later verified by the SEM results that principals set directions significantly correlated with PLC factor-shared visions and values ($\beta = 0.216$, $p < .01$).

6.2.2.2 Build Relationships and Develop People

In this research project, principals stimulated the shared and supportive leadership in PLCs in kindergartens by implementing leadership practices under the dimension *build relationships and develop people* ($\beta = 0.443$, $p < .01$). Among the qualitative interviews, most of the teachers shared their encouraging learning experiences in the TRGs with the collaborative culture established by the principals. This finding has been echoed by both the international and Chinese literature, for instance, Thornton and Cherrington

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(2014) claimed that relational trust was particularly important to the development of PLCs in the ECE sector. Meanwhile, a bunch of studies carried out in China highlighted that school principals should pay more attention on creating and sustaining trusting environments within schools for the development of PLCs (Yin et al., 2018; Zheng et al., 2016). However, comparatively, the current project added evidence on the detailed mechanism of how principals exerted positive influence on creating shared and supportive leadership in PLCs by enacting leadership practices under the dimension *build the relationships and develop people*.

6.2.2.3 Develop the Organisation

The principal leadership practices in the dimension *develop the organisation* had significant effects on the three factors of PLCs, namely, shared and supportive conditions, shared collaborative professional capacity, and shared individual professional capacity ($\beta = 0.486$, $p < .01$; $\beta = 0.416$, $p < .05$; $\beta = 0.388$, $p < .01$) in the current research. The importance of school principals creating and sustaining a supportive work setting in PLCs was highlighted. This finding is consistent with Qian and Walker (2020) who suggested that principals should set up mandatory structures for PLCs. By doing so, kindergarten principals could provide resources and offer timely support to teachers who participated in PLCs. Meanwhile, principals also could monitor the learning outcomes in PLCs regularly to motivate teachers to be more focused.

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6.2.2.4 Improve the Instructional Programme

Qian and Walker (2020) suggested that principals should focus on classroom teaching and student learning to establish PLCs in primary schools across mainland China. The current project credited the finding by adding quantitative and qualitative concrete evidence of the positive correlations between leadership practice *improve the instructional programme* and factors in PLCs. In detail, this leadership practice had positive effects on the three factors of PLCs, namely, shared visions and values, shared collaborative professional capacity, and shared individual professional capacity ($\beta = 0.558$, $p < .001$; $\beta = 0.548$, $p < .001$; $\beta = 0.781$, $p < .001$). The paths can be interpreted that kindergarten principals made great efforts to improve instructions by providing instructional support in person and hands-on demonstrating curriculum development and research skills, and that these practices stimulated the development of both teachers' collaborative and individual professional capacity.

6.2.3 Successful Principal Leadership on PLCs: Mixed-up Impacts

Apart from all the findings discussed in the previous sections, one mixed-up impact of successful leadership on PLCs was found in the current project. An unexpected negative correlation path was identified between successful leadership practices and PLCs in the quantitative study, whilst the counterpart result was found in the qualitative study. The discussion on this finding follows.

It was surprising to find that there were discrepancies between the qualitative and quantitative findings on the impact of successful leadership practices in the fifth

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dimension, *demonstrate professional and moral models*, on PLCs in the current project. The qualitative findings demonstrated the positive influence of principal leadership practices in the fifth dimension on PLCs. However, the SEM results showed that this dimension had negative effects on the two factors of PLCs, namely, shared collaborative professional capacity and shared individual professional capacity.

Among the literature, one quantitative study carried out in American elementary schools showed that 'encouraging the heart' was evidenced as one of the principal leadership dimensions to predict more effective PLCs (Voelkel, 2019). Since the leadership practice dimensions measured in this quantitative study were inspirational, the researcer took the literature as a theoretical reference. So, the positive influence of demonstrate professional and moral models on PLCs has been supported by this quantitative study. Moreover, Qian and Walker's (2020) qualitative study among Chinese primary schools also predicted that principals are a role model of valuing learning and could exert possible influence on PLCs. These empirical findings are more likely to support the positive correlations between the fifth dimension and PLCs, however, they are not sufficient to make a judgement, therefore, further studies are in need to find out more.

In general, the findings on the impacts of successful principal leadership on PLCs were discussed in the above sections. These findings confirm Yin et al.'s (2018) claim that leadership practices have had positive effects on PLCs in the Chinese context. Furthermore, the current project has provided empirical support of the significance of principal leadership in facilitating PLCs in the ECE sector. Different from the previous

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studies which usually investigated specific leadership models, this project examined each dimension of successful principal leadership practices. The significant correlation paths identified have provided a more detailed pattern of the relationships between successful leadership practices and the PLCs factors. These findings were generated into a new model of the impact of successful principal leadership on PLCs in ECE in mainland China. The new model is presented as the summary of the findings of this project in the next section.

6.3 Summary: A New Model of the Impact of Successful Principal Leadership on PLCs

Discussion of the findings in this project was organised and portrayed following the sequence of the research questions, which provided insights on indigenous successful principal leadership practices as well as the impacts of these leadership practices on PLCs factors in the context of ECE in mainland China. Based on these findings, a new model was constructed. As demonstrated in Figure 8, the new model consists of mainly three constructs: successful principal leadership, professional learning communities (PLCs), and the one-way relationship between principal leadership and PLCs.

The new model was developed from the conceptual framework of this research project. To be more accurate, it has enriched the conceptual framework by offering five-dimension successful principal leadership practices in ECE in mainland China based on the previous four-dimension successful leadership model derived from other contexts, such as different school sectors and different countries (e.g., Day et al., 2010;

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Leithwood et al., 2020). The newly established successful principal leadership model highlights that kindergarten principals demonstrated professional and moral models as being perceived as one of the successful leadership practices, thus, the fifth dimension was established accordingly. Apart from the added dimension, the other four dimensions used the same labels as the previous literature (e.g., Leithwood, 2015), however, the practices under these dimensions were different since the enactments of successful leadership practice were responsive to context (Leithwood et al., 2020). In detail, the five practices distributed in the three dimensions represent the distinctive features of the successful leadership practices in ECE in mainland China, and the unique findings of the current project. The practices referred to kindergarten principals constructing a regulation system and organising the evaluation and ratings of kindergartens in setting directions for their schools; they provide instructional support in person and hands-on demonstrate the curriculum development and research skills required for improving instructional programmes; and they provide humane care for individual staff members in building relationships and developing people.

As shown in the new model, the significance of successful leadership practices in facilitating PLCs in Chinese schools (Qian & Walker, 2020; Wang, 2016; Zhang et al., 2017) has been further affirmed. The impact of successful principal leadership on PLCs were identified by both quantitative and qualitative concrete evidence on the dimension level correlation paths between leadership practices and PLCs factors in the current project. It needs to be emphasised that the findings on the impacts of the dimension level on successful principal leadership on PLCs were only based on the

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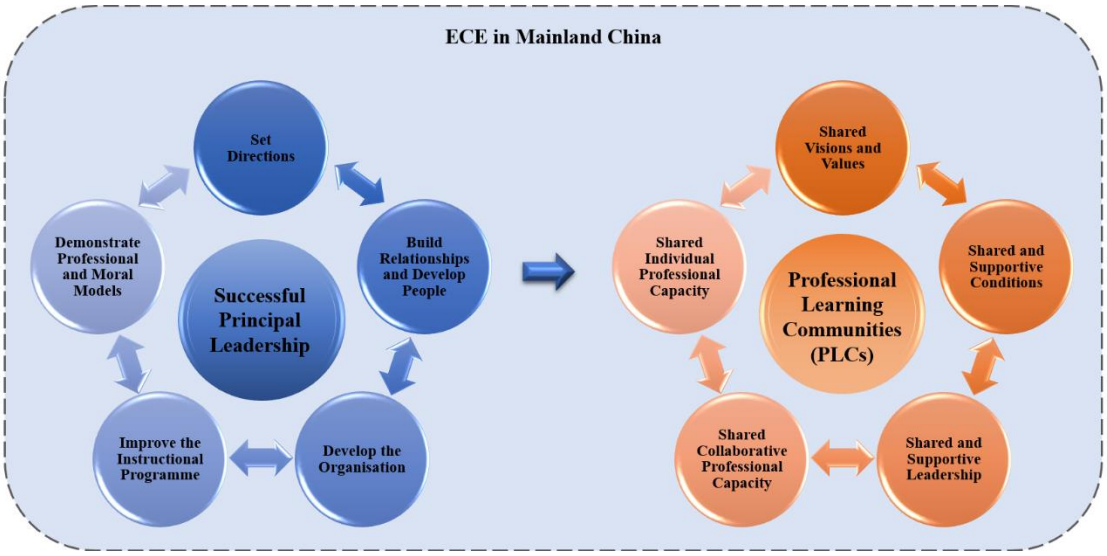
insights provided by the kindergarten principals and teachers involved in the current project. Future studies are needed to verify this finding in different contexts with different participants.

In a word, the new model was established based on the findings in this research project which originated in the context of ECE in mainland China. It has contributed to the literature on both principal leadership and the principals' role in enhancing PLCs. As claimed by scholars, almost all effective leaders use the same set of fundamental leadership practices (Day et al., 2020; Leithwood et al., 2020), and this project has demonstrated that Chinese kindergarten principals, indeed, enacted these leadership practices. However, the distinctive ways they applied these practices have shown that they are responsive to the context in which they operate. Hence, a dotted line was placed clearly at the outer ring to highlight that when the context changed, so would the dynamics within the model.

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Figure 8

New Model of the Impact of Successful Principal Leadership on PLCs



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Chapter Seven: Implications and Future Directions

The findings from the current research project have several implications for theory, methodology, practice, and policy, which then provide implications for future research.

7.1 Implications for Theory

Based on the research findings, this project has proposed a new model to illustrate the positive correlations between successful principal leadership practices and PLCs in ECE in mainland China using an empirical dataset from China (Figure 8). As one of the important components of the model, the five-dimension successful principal leadership model (SPL model in ECE) was established in the current project based on the widely cited successful leadership model (Leithwood et al., 2020) and relevant literature on school leadership (Bush et al., 2018; Hallinger et al., 2020; Leithwood & Sun, 2012) and successful leadership (Day et al., 2020; Leithwood et al., 2020). Unlike the established knowledge base of education leadership in other school sectors, the research on principal leadership in the ECE sector is in its infancy stage and most of the studies are dominated by scholars from Finland (e.g., Fonsén & Soukainen, 2020), Australia (e.g., Waniganayake, 2014), and New Zealand (e.g., Denee & Thornton, 2018). Even fewer scientific efforts have been made in mainland China. With wide recognition of school leadership having significant effects on the success of most school improvement efforts (Day et al., 2020; Leithwood et al., 2020), this project is particularly important and timely to advance the knowledge production of successful leadership practices by initially establishing a theoretical foundation for future research due to the scarcity of

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empirical evidence on successful principal leadership in the ECE sector and the Chinese context. However, since the findings were derived from the perspectives of principals and teachers involved in the current project, future studies are needed to verify the findings in different school levels and educational contexts.

Furthermore, the new model has also affirmed the critical role principal leadership plays in the development of PLCs by indicating significant pathways from principal leadership practices to PLCs factors in the dimensional level. The model has offered more concrete empirical evidence on the one-way relationships between school leadership practices and PLCs. The findings of this project will make theoretical implications on building concrete connections between principal leadership and PLCs so that a clearer picture of these two constructs can be unveiled. This will add the value to the literature on the role of principal leadership on the development of PLCs (Harris & Jones, 2017; Qian & Walker, 2020). In general, the current research project will not only enrich our understanding of the indigenous enactments of successful principal leadership practices in ECE in China, but also, will contribute to the conceptual understanding of the impacts of principal leadership practices on the factors of PLCs. The new model will provide a theoretical framework for future research in the ECE sector, which will largely advance knowledge production in both the school leadership and PLCs areas.

7.2 Implication on Methodology

The current research project has constructed the measurement of successful principal

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leadership based on datasets in ECE in mainland China. Both the content and structural validities were examined, and the newly established Successful Principal Leadership Inventory (SPLI) has achieved a good model fit to the dataset implemented in this project. However, the content validity may be unstable and context dependent. Thus, more studies are in need to establish the external validity of the SPLI and test-retest reliability in order to evaluate responsiveness to change over time. Nevertheless, this project lays the foundation to guide subsequent research to construct a successful principal leadership instrument, notably in the ECE sector. On one hand, the SPLI will serve as a validated instrument for future research on the nature of successful principal leadership as an independent construct and its relationships to other related constructs. On the other hand, the emergence of the SPLI will contribute to strike a balance between the various methodological approaches as the literature review for the current project showed that when examining school effective/successful leadership internationally, particularly in mainland China, qualitative methods have dominated, and quantitative and mixed-methods efforts are lacking (See Chapter Three).

7.3 Implication on Practice

This project demonstrated the successful leadership practices Chinese kindergarten principals enact in their daily work perceived by both teachers and principals. These findings not only indicate "what" successful principals do, but also on "how" and "why" they do. Comparing with the doctrines stated in the *Preschool Principals' Professional Standards* issued by Chinese Ministry of Education in 2015, the current study will

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broaden kindergarten principal's perspectives on leadership practices. Specifically, principals are expected to set clear directions for their schools, build relationships and develop people, redesign their organisations to support desired practice, improve instructional programme, and demonstrate professional and moral models for leading the kindergartens effectively. Moreover, successful principals need to implement both top-down and bottom-up communication strategies with teachers when they apply practices for setting directions for their kindergartens. Meanwhile, they need to display their enduring passion on hands-on demonstration of classroom teaching, curriculum design, and research for improving their instructional programme. Last but not the least, they can strive to establish a caring working environment and model high-level morality within kindergartens. All of these specific recommendations may inspire practitioners in the ECE sector on how to be a successful principal in experiential environments.

Moreover, the role of principal leadership on PLCs was demonstrated by highlighting the pathways from principal leadership practices to PLCs factors. The findings on the effects of principal leadership practices on PLCs will inform ECE practitioners on certain leadership practices that effectively impact teacher's collaborative professional learning for school improvement in kindergartens. Although previous studies on school leadership and PLCs had identified relationships between specific leadership models and the features of PLCs (e.g., Thornton & Cherrington, 2014; Zheng et al., 2019), they had not sufficiently described the relationship between leadership practices and PLC elements. The current project identified relationships between the two constructs on the dimensional level, which highlighted the mechanism

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on how leadership practices exert influences on PLCs factors. To be specific, kindergarten principals can enhance the effectiveness of PLCs by setting clear objectives for the various learning communities in their kindergartens. They also need to create a collaborative and trusting working environment to cultivate shared and supportive leadership in PLCs and stimulate genuine collaborative learning among teachers, instead of the reproduction of the 'best' models of teaching practice (Qiao et al., 2018). Additionally, principals as well as the leaders of PLCs need to create and sustain supportive work setting in PLCs. They can provide sufficient resources, offer timely support, and monitor learning outcomes regularly.

Furthermore, the findings of this research project are also informative for principal preparation, training and development, and evaluation. The successful leadership practices extracted from the empirical evidence in the current project could be considered for the designing of principal preparation programmes and training, and development courses held by universities or local education bureau. Meanwhile, principal evaluation might consider including these successful leadership practices as the benchmark of effective leaders in kindergartens and other educational levels in different settings.

7.4 Implication on Policy

This project will provide recommendations to policy makers on formulating the policies on principal selection, professional development, and evaluation in ECE in China. Policy makers could integrate successful principal leadership practices into the

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standards of recruiting, developing, and evaluating principals within kindergartens. As exposed in the interviews with principals, it was challenging for those who had just started their principalship to lead their kindergarten effectively. The demanding nature of the work in kindergartens has left novice principals physically and mentally exhausted, as they were not well-prepared for the leadership roles assigned by the Education Bureau. Meanwhile, the regulations in ECE such as *Preschool Teachers' Professional Requirements* issued in 2012 and *Preschool Principals' Professional Standards* issued in 2015 have only emphasised the abilities and competencies that principals should possess; there were no concrete guidelines on the leadership practices principals should implement in those regulations. Therefore, it is expected that policies on principal recruitment, preparation, and evaluation can take successful principal leadership practices into consideration since practices are much easier for kindergarten principals and other ECE practitioners to master and measure.

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Chapter 8: Limitations

This chapter acknowledges the limitations of the current research project. Although the research procedure has been thoroughly designed with theoretical justifications, three limitations still exist and require further work in the future.

First, the findings of the current project are limited since convenience sampling of both participants and data location was applied. The project's corpus included a sizable convenience sample of the population in one city, and the sample size was sufficient for performing Structural Equation Modelling. However, 533 participants could not be taken into account as fully representing kindergarten principals and teachers in mainland China. Moreover, the findings on the successful leadership practices and the dimensional level relationships between principal leadership and PLCs factors were all responsive to the context. ECE practitioners from the southwest region face dramatic changes to improve the uneven ECE quality, since Yunnan Province is underdeveloped economically and has the most ethnic minorities distributed in the mountainous area. Hence, the findings cannot be generalised to be applied to all kindergarten populations. For achieving more well-rounded universally applicable findings, future research should target participants from a wider range of backgrounds by applying random sampling.

Second, this research project only used self-reported data collected by conducting interviews and surveys with principals and teachers. These data collection techniques might be good ways to reveal what participants perceived from their first-person vantage point. Self-report data, however, might also introduce bias since first-party data

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may or may not reflect the reality of their principals' leadership practices (Atwater et al., 1998). To investigate leadership practices in a more genuine manner, future studies may adopt other techniques for collecting data from more objective viewpoints, such as observation, shadowing of participants, and 360-degree assessment survey.

Third, this research project applied a cross-sectional design that could only identify correlational relationships because it only collected data at a specific time point (Creswell & Creswell, 2017). The findings of this project were generated based on the perspectives of principals and teachers on the two research questions at the time point when the interviews and surveys were conducted, and their perspectives may or may not change over time. Therefore, longitudinal and interventional designs should be encouraged to fill the methodological and conceptual gap in the future.

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Chapter 9: Conclusion

Early childhood education (ECE) in China is transiting from guaranteeing educational equity to increasing its quality as more emphasis is placed on the importance of ECE in preparing children for success in adulthood worldwide. During the process of the transition, discussions on the role and impact of kindergarten principals in this endeavour have gained momentum since successful leadership is regarded as a crucial component of quality ECE (Heikka et al., 2021a; Klevering & McNae, 2018). Reviews of international research indicate to principal leadership being a significant predictor of the psychological, physical, and social environments and conditions in which teaching and learning occur, thereby impacting students' motivations, expectations, attitudes, and conduct in classrooms and so helps to determine student outcomes (Day et al., 2020). Yet the existing educational leadership theory corpus lacks contextual relevance and fails to recognise the intricacies and realities of leading in ECE settings (Rodd, 2013).

This research project was designed with the purpose to explore successful principal leadership practices in ECE and the impacts of principal leadership on PLCs through the perspectives of both kindergarten principals and teachers in mainland China. The reason for selecting PLCs as another construct of the research was twofold: firstly, PLCs were confirmed as powerful models that can promote and sustain school improvement (Lee & Kim, 2016), and the TRGs, the most acknowledged form of PLCs in China, have been instituted in schools for a history of more than seven decades (Chen, 2020); secondly, the critical role principal leadership plays in the development and

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sustainability of PLCs have been identified in different cultural contexts (e.g., Harris & Jones, 2017; Qian & Walker, 2020). For achieving the research purpose, principal leadership practices were investigated by following the effects of these practices on the PLCs factors based on successful/effective school leadership models. Exploratory mixed methods were adopted in this project. The qualitative phase research was conducted first to explore the indigenous understanding of successful principal leadership practices and their positive influence on PLCs. The subsequent quantitative study was designed to validate the newly established successful principal leadership model as well as examine the correlation paths between principal leadership practices and PLC factors. The results of the qualitative and quantitative studies were synthesised for obtaining a more comprehensive understanding on successful principal leadership and its impact on PLCs.

The research findings indicated that successful principal leadership practices in ECE consisted of five dimensions with 20 items. The five-dimension model was established theoretically based on the widely cited successful leadership model derived from other contexts (Leithwood et al., 2020); even though the same or similar labels were used to describe the practices uncovered from the current research, the meaning behind them was different. The findings of the current project reinforced previous research on successful principal leadership by highlighting the distinctive enactments of principal leadership practices in ECE in mainland China. In addition, the positive influence of successful principal leadership on PLCs was affirmed by the current research by demonstrating the dimensional correlations between leadership practices

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and PLC factors. The significant correlation paths add evidence on how principal leadership could impact teacher collaborative learning in kindergartens with a more nuanced presentation. Along with these research findings, a new inventory on successful leadership practices (SPLI) was established and validated by the current project, which set up the foundation for further research.

In conclusion, this research project has provided an understanding of successful principal leadership practices in the Chinese ECE context. Moreover, the relationships in the dimensional level between principal leadership and PLCs were identified. It contributes to the knowledge base of successful leadership, particularly in the ECE sector. More efforts are expected to verify the findings in different school levels and educational contexts. Except for the contribution to the knowledge base, the project has offered practical recommendations to both ECE practitioners and policy makers on how to nurture and cultivate kindergarten principal's leadership and stimulate them to be successful.

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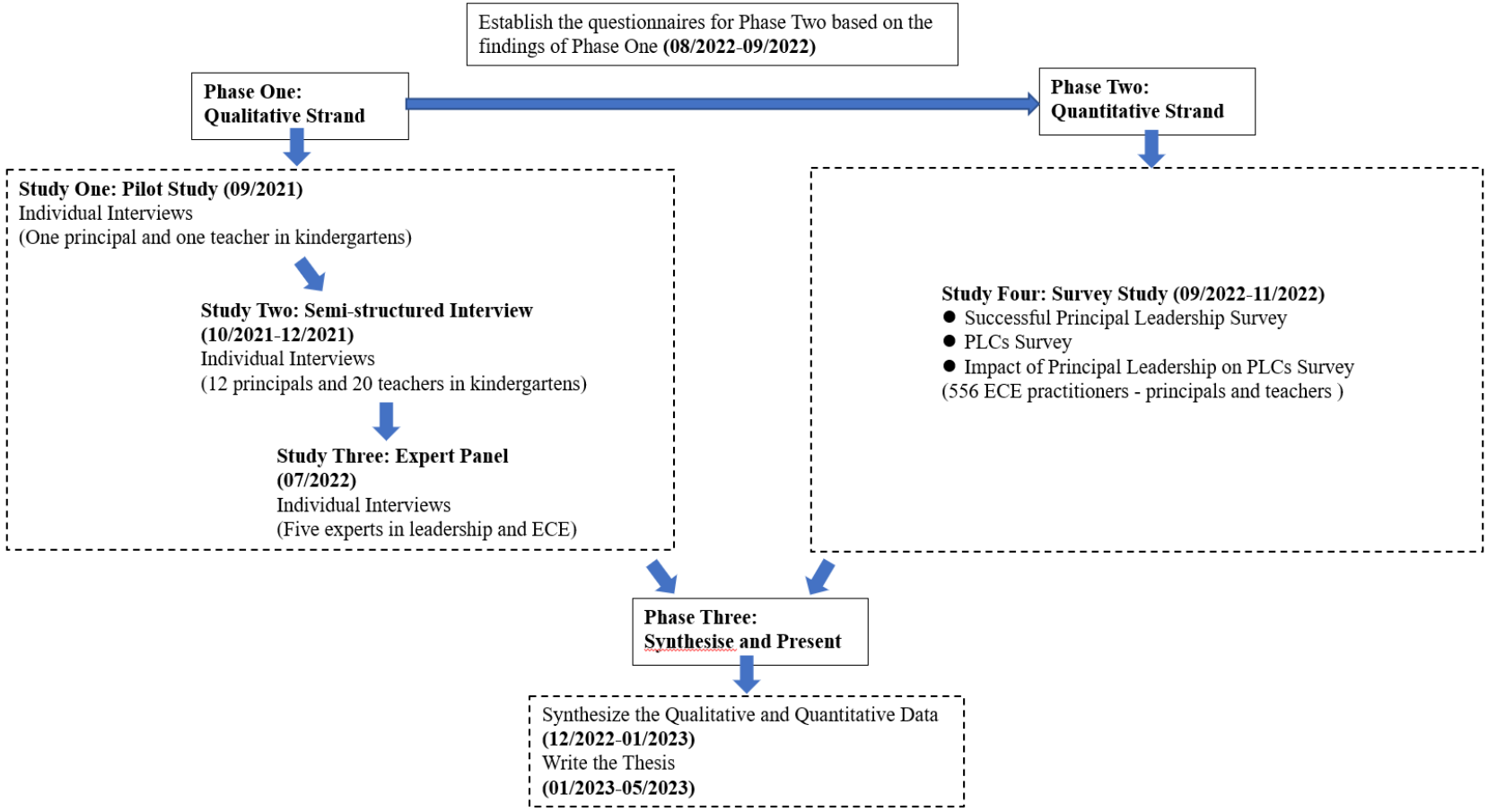
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Appendix 1 Time Frame of the Research Project



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Appendix 2

Table 1. Guiding Questions for the Semi-structured Interview: For ECE Principals

Table 1 Guiding Questions for the Semi-structured Interview-For ECE Principals	
Guiding Questions	**The Purpose**
1. Please introduce your working experience as a kindergarten principal.	Background
2. Please tell your understanding of principal leadership and your role as a leader in kindergarten. 3. Please tell what leadership practices that you act on your daily basis. Please allocate into different aspects. 4. Please tell your experience on the leadership practices in setting the directions. 5. Please tell your experience on the leadership practices in developing people. 6. Please tell your experience on the leadership practices in restructuring the organisation. 7. Please tell your experience on the leadership practices in managing instructional programme. 8. Except these leadership practices, what do you perceive as the most important in your daily work? Why? *Please give salient example/scenarios to explain.	Target on solving RQ1
9.Please tell your understanding of the impact of leadership practices on PLCs. 10.Please tell your suggestions on how leadership practices impact PLCs. *Please give salient example/scenarios to explain	Target on solving RQ2
11. Is there anything else you want to ask or share?	Wrap-up

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Appendix 2

Table 2. Guiding Questions for the Semi-structured Interview: For ECE Teachers

Table 2 Guiding Questions for the Semi-structured Interview-For ECE Teachers	
Guiding Questions	**The Purpose**
1. Please introduce your working experience as a kindergarten teacher.	Background
2. Please tell your experience on principal leadership practices in your daily work. 3. Please tell your opinion on the leadership practices in setting the directions. 4. Please tell your opinion on the leadership practices in developing people. 5. Please tell your opinion on the leadership practices in restructuring the organisation. 6. Please tell your opinion on the leadership practices in managing instructional programme. 7. Except these leadership practices, what do you perceive as the most important in your daily work? Why? *Please give salient example/scenarios to explain.	Target on solving RQ1
8.Please tell your understanding of the impact of leadership practices on PLCs. 9.Please tell your suggestions on how leadership practices impact PLCs. *Please give salient example/scenarios to explain	Target on solving RQ2
10. Is there anything else you want to ask or share?	Wrap-up

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Appendix 3

Survey Instrument - Successful Principal Leadership Practices

No.	Successful Leadership Practices Item
1	The principal builds a shared vision for the school.
2	The principal assists in setting specific, shared, short-term goals for teaching and learning.
3	The principal cerates high-performance expectations for staff.
4	The principal communicates the school vision and goals to staff.
5	The principal constructs and applies the regulation system align with the culture of the kindergarten.
6	The principal organises the evaluation and ratings of kindergarten.
7	The principal stimulates growth in professional learning communities (PLCs).
8	The principal provides humane care for individual staff members.
9	The principal builds trusting relationships with and among staff, students and parents.
10	The principal creates an open and fair working environment.
11	The principal establishes productive working relationships with middle leaders and backbone teachers.
12	The principal models the school's value and practices.
13	The principal builds collaborative cultures and distribute leadership.
14	The principal structures the organisation to facilitate collaboration.
15	The principal builds productive relationships with families and communities.
16	The principal connects the school with its wider environment.
17	The principal maintains a safe and healthy school environment.
18	The principal allocates resources in support of the school's vision and goals.
19	The principal provides resources for instructional programme.
20	The principal provides instructional support in person.
21	The principal hands-on demonstrates the curriculum development and research skills.
22	The principal monitors student learning and school improvement progress.
23	The principal buffers staff from distractions to their work.
24	The principal models a life-long learner.
25	The principal models a high level of professional practice.
26	The principal models a high-level morality.
27	The principal exerts personal charisma.

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Appendix 3

Survey Instrument - Professional Learning Community Scale

No.	Professional Learning Communities (PLCs) Item
1	Our colleagues share visions and goals for the kindergarten.
2	Our colleagues are in close agreement on school policies.
3	Our colleagues share similar beliefs and attitudes related to teaching and learning.
4	Our colleagues share the direction for school improvement.
5	Our kindergarten provides resources and opportunities to facilitate collaborative professional development.
6	Our kindergarten sets up the mentorship or group learning in order to support disadvantaged colleagues.
7	Our kindergarten invites external stakeholders for promoting professional development of our colleagues.
8	A culture of trust and respect prevails in our kindergartens.
9	Our colleagues are consistently involved in discussing and making decisions.
10	Our kindergarten leaders are proactive and addresses areas where support is needed.
11	Our middle leaders actively bridging between principal and teachers for better communication.
12	Leadership is promoted and nurtured among colleagues in our kindergarten.
13	Our colleagues collaboratively share innovative knowledge, skills and strategies and apply these into the practice.
14	Our colleagues collaboratively analyze multiple classroom data for maximizing student learning.
15	Our colleagues informally share ideas and reflections for improvement.
16	Our colleagues regularly observe peer's lessons and give meaningful feedback.
17	Our colleagues frequently take ownership for their life-long learning.
18	Our colleagues frequently try new things related to teaching and learning.
19	Our colleagues regularly take time to reflect on their work and figure out how to do things better next time.
20	If our colleagues find themselves in a jam at work, they could proactively think of many ways to get out of it.

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