Perceptual Differences between Principals and Teachers on Principal Instructional Leadership in China: The Impact of Cultural and Organizational Factors

By

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Statement of Originality

I, GUO, Wei, hereby declare that I am the sole author of the thesis and the material presented in this thesis is my original work except those indicated in the acknowledgement. I further declare that I have followed the Institute's policies and regulations on Academic Honesty, Copy Right and Plagiarism in writing the thesis and no material in this thesis has been published or submitted for a degree in this or other universities.

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Abstract

In recent literature on instructional leadership, researchers have become increasingly aware of the importance of perceptual differences between principals' self-rating and teachers' evaluations of the principal instructional leadership performance. This phenomenon draws attention because perceptual differences between principals and teachers on instructional leadership have important implications for leadership effectiveness, leadership development, and school improvement. In order to understand the patterns of perceptions from different sources, and how this can be influenced by cultural conditions and organizational hierarchy, this study examines the perceptual gap regarding principal instructional leadership between principals and teachers, and tests three hypothetical relationships between the two parties by examining Chinese samples.

Data were collected using the widely accepted measurement of instructional leadership, Principal Instructional Management Rating Scale (PIMRS) with modifications. In the first phase of this study, a standard procedure was adopted to translate the questionnaire into Chinese, and pilot interviews (15 principals) and survey tests (245 participants) were performed to finalize the instruments. In the second phase, 132 principals, and 730 middle leaders, and 978 teachers returned valid Chinese PIMRS and Mid-leaders Instructional Management Rating Scale (MIMRS) surveys, representing 76 primary and 56 secondary schools. The modified instruments underwent a validation process again, which is empirically proved to be reliable and valid by the data collected in this study, and satisfies the requirements for further data analysis.

Results of data analysis revealed that principals' self-rating of principal instructional

leadership practices was higher than teachers' evaluation on only one dimension, and no significant difference was found on the overall level of PIMRS between the two parties. However, the cultural factor, Power Distance (PD) did moderate some perceptual differences. Specifically, when principals reported low PD, principals' self-rating of instructional leadership was higher than that reported by teachers, whereas when principals reported high PD, their self-rating was lower than that of teachers. Moreover, from an organizational hierarchical and structural perspective, middle instructional leaders were found to be positively related to the perceptual gap between the two parties, namely, the more middle instructional leaders perform instructional leadership, the larger the perceptual gap of instructional leadership between principal and teachers.

In general, the findings identified patterns and characteristics of principal instructional leadership practice in Chinese schools, and evidenced that both PD and middle leaders influence principal-teachers' perceptual differences of principals' practice of instructional leadership. The results imply that it is necessary to consider these contextual factors when assessing and interpreting principal instructional leadership performance. The research findings have significant implication for leadership development and school improvement.

Key words: principal instructional leadership, perceptual difference, power distance, middle instructional leaders

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List of Abbreviations

IL----Instructional Leadership

PIL-----Principal Instructional Leadership

MIL----Middle instructional Leaders/Leadership

PIMRS----Principal Instructional Management Scale

MIMRS----Mid-leader Instructional Management Scale

PD----Power Distance

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Chapter 1: Introduction

This chapter outlines the framework of this study and the general context from which it derives. It further briefly introduces the key points of the research topic and the research focus. Subsequent sections outline the research problem statements, research questions, the conceptual framework, and the significance of the study. This chapter also presents the general organization of the entire thesis.

1.1 Overview of the Study

Over a decade since the new millennium, with the pressure of ensuring accountability policy for both principals and teachers (Silva, White & Yoshida, 2011), school principals are once again put under the spotlight for improving school performance with an increasing expectation for them to be instructional leaders (Hallinger, 2005). Usually considered to be the most obvious leadership approach to improving teaching and learning capacities of schools (e.g., Leithwood, Day, Sammons, Harris, & Hopkins, 2008; Robinson, Lloyd, Rowe, 2008), instructional leadership has started attracting a further round of practical and research attention. In recent literature on instructional leadership, researchers have highlighted the importance of comparing perceptions of principal instructional leadership between principals and teachers (Gurley, Anast-May, Lee, & Shores, 2015; Jiang, 2015; Owens, 2015). Empirical studies have not only been recording the perceptual differences between the two parties (e.g. Hallinger & Murphy, 1985; Park & Ham, 2014; Ratchaneeladdajit, 1997; San Nicolas, 2003; Smith, 2007) and studies on the perceptual differences between leader and followers are found to have meaningful implications for improved leadership performance (Goff, Edward Guthrie, Goldring, & Bickman, 2014; Smither, London, & Reilly, 2005), leadership effectiveness (Goff, Goldring & Bickman, 2014; Park & Ham, 2014; Sinnema, Robinson, Ludlow, & Pope, 2015), and even school improvement (Bryk, Sebring,

Allensworth, Luppescu, & Easton, 2010; Park & Ham, 2014; Sinnema, et al., 2015). However, empirical understanding of instructional leadership practices in Chinese schools is rather limited. Further, studies with a research focus on cultural and organizational factors that influence the perceptual differences of principal instructional leadership between principals and teachers are very rare.

Complementing previous studies on the perceptual disparity between principal and teachers in assessing instructional leadership, this study examines power distance as a cultural factor, and middle leaders' instructional leadership as a school organizational factor to explain and predict perceptual differences in viewing the performance of instructional leadership by principals. Following this line of literature, a conceptual framework has been established, involving power distance and middle leaders who hold a key position in the hierarchical structure as the moderators. Based on this theoretical direction, hypothetical relationships among principals, middle leaders, and teachers are tested in the Chinese educational context. Patterns and characteristics of Chinese principal instructional leadership are also examined and reported since empirical evidence on Chinese instructional leadership practice is limited. In summary, this study aims to shed light on the perceptual gap between principals and teachers regarding instructional leadership and the impact of cultural and organizational factors on this in the educational reform context of China.

1.2 Research Rationale

1.2.1 Why Focusing on Instructional Leadership

The focus of this study centers on the concept of instructional leadership. After the turn of the new millennium, the emphasis on improving the quality of education in terms of student academic achievement became an imperative again in the eyes of policymakers. As one

method to ensure students achieve better learning outcomes, the accountability policy for schools brought mandatory evaluation systems to both principals and teachers with strict standards required for student learning outcomes (Murphy & Shipman, 2003; Silva et al., 2011). Failure to achieve student learning improvement will result in replacement of school leaders (Abrevaya & White, 2009; Sebastian & Allensworth, 2012). Consequently, school leadership which focuses on teachers' instruction and student learning becomes a must instead of a choice (Murphy & Meyers, 2007; Nettles & Herrington, 2007; Silva et al., 2011).

Despite several alternative approaches to school leadership having emerged, few have been more central, well-studied and vital than instructional leadership (Hallinger & Heck, 1996; Leithwood, Anderson, Mascall & Strauss, 2010; Robinson et al., 2008). Instructional leadership, a school of educational leadership that focuses on teaching and learning, has remained a major leadership construct in schools since 1980s. The long lasting influence of instructional leadership is probably because strong instructional leadership is a key feature of effective schools, a critical factor in promoting quality of education, and a core force to drive school development (Hallinger & Wang, 2015). To be more specific, the positive effect of instructional leadership on improving students' academic learning outcomes has been consistently confirmed (Blase &Blase, 1999; Hallinger, & Leithwood, 1994; Hallinger & Heck, 1996; Hallinger, 2003; Leithwood, Day, Sammons, Harris, & Hopkins, 2008; Printy, 2008; Robinson et al, 2008). Therefore, the value of instructional leadership on promoting teaching and learning cannot be ignored if students are continually to be expected to achieve satisfying learning outcomes. Indeed, the role of instructional leadership cannot be overlooked because the fundamental purpose of school education resides in student learning.

Instructional leadership has been included as a major component in the standard for principal leadership practice. The United States is one of the pioneers in creating principal leadership

standards (Fu & Xiong, 2010). The latest version, 2014 ISLLC (Interstate School Leaders Licensure Consortium) standard "place[s] great emphasis on the instructional leadership responsibilities of school and district leaders; provide[s] a common vision for effective educational leadership." (CCSSO, 2014, pp.23). Instructional leadership is positioned as a future direction for principal development.

Last but not least, global participation and interest in international tests, such as the Program for International Student Assessment (PISA) indicate that student learning achievements are widely considered an essential indicator to measure results of school education and predict future success of competent talents. The active and global involvements in PISA further imply that school leadership which can effectively promote student learning will be the future focus in both academic research and school practice. Given the strong connection between student learning outcome and instructional leadership, it is predicable that a new wave of studies focusing on instructional leadership is coming.

1.2.2 Investigating Instructional Leadership: Collecting Perceptions from Two Mindsets

Performance evaluation is common in almost all industries. The demand for such a practice is understandable because subsequent human resources actions can only be properly taken based on information about performance evaluation. As a result, training, appointment and promotion decisions can be made. This applies to the field of education too, where students, teachers, and principals are evaluated to see whether they have met the expected requirements or not. For instructional leadership performed by principals, one way of doing so is to ask principals to report their own performance on valid and reliable surveys. This self-report technique is in fact a widely used method to estimate the level of performance in terms of principals' instructional leadership practice. However, self-assessing information can be easily influenced by bias and become inaccurate. Having alternative eyes to look at principals'

performance may provide another lens. However, conflict may occur between self-report and others' evaluation.

Prior studies suggest that a leader may be inclined to inflate their self-rating to a degree higher than that of subordinates' evaluation (Bass & Yammarino, 1991; Yammarino & Atwater, 1997). In such cases, a gap would occur between the ratings of the two parties. Prior research further indicates that followers may not be able to perceive fully the degree to which leaders think they have exerted leadership influence. As a result, due to not all leadership behaviors being able to be perceived by followers, the performance of leadership is then "discounted". For instructional leadership, there is a similar situation (Henderson, 2007; Park & Ham, 2014).

Hallinger and Murphy (1985) reported that principals' self-report PIMRS (principal version) and teachers' evaluations (teacher version) of principals' instructional leadership were not consistent on the subscales. Teachers' evaluations were lower than their principal's self-rating on all the functions of instructional leadership. Although this gap between principals and teachers was found, the differences were very small and not significant, which was attributed to principals' self-bias and the nature of self-report. However, the issue has begun to attract more research attention because the size of the difference has become larger.

More recently, whether studies focus on the issue of rating difference or include it as one part of capturing one common result, the small differences have become increasingly salient. In addition to learning there is a confirmed huge difference between principals and teachers regarding perceiving principal instructional leadership practice, there are two patterns of perceptual (dis)agreement between principals and teachers on principal instructional leadership. The major type, which is dominant in quantity, is that principals' self-rating is higher than the evaluations of teachers (e.g. Boothe, 2014; Gurley, Anast-May, Lee and

Shores, 2015; Ratchaneeladdajit, 1997; San Nicolas, 2003; Stevens, 1996; Waters, 2005), a large proportion of which has statistical difference (Chi, 1997; Henderson, 2007; Lorei, 2015; Lyons, 2010; Miller, 1991; Smith, 2007; Taraseina, 1993). For example, Henderson (2007) found significant differences in all three dimensions of PIMRS between principals and teachers. Additional to western studies, authors from other cultures also report a self-rating from principals higher than teachers' evaluation of them (e.g., Thailand, Ratchaneeladdajit, 1997; Taiwan, Chi, 1997).

Empirical evidence now confirms self-other rating differences and consistently indicates that principals and teachers do rate differently on principal instructional leadership (e.g., Henderson, 2007; Lorei, 2015; Lyons, 2010; Park & Ham, 2014), and the reported gap between principals' and teachers' rating on instructional leadership tends to increase in the literature. It is true that any leaders will be perceived differently in the eyes of different subordinates: people are inclined to different styles of leadership (Dinham, 2007). However, I would not develop this study if the rating difference between principals and teachers remained small in the literature. This study examines instructional leadership using the technique of multi-source ratings.

1.2.3 Why Studying Perceptual Differences of Instructional Leadership in China

Although Chinese education is famous for its outstanding performance on PISA, it was not until the new curriculum reform of 2001 that the Chinese academia of education started to realize that insufficient instructional leadership was impeding instructional quality and principals' professional development (Zhao & Song, 2014). A few Chinese scholars have also noted that insufficient instructional leadership slows Chinese principals' professional development and school academic improvement (Liu, 2010; Zhao, 2013). Of the existent Chinese literature that centers on instructional leadership, the focus is ether on introducing

foreign studies (e.g., Feng, 2012; Wang, 2013; Zhao, 2013) or on developing personal reflections and theoretical propositions (e.g., Zhang, 2014;Wang & Huang, 2010). The Chinese government recently also enacted the first official guidance for principal leadership practice, the "Professional Standards for compulsory education school principals". The standards officially stipulate instruction related functions such as "leading curriculum and instruction" and "promoting teacher development" as major criteria for recruiting new principals and assessing a principal's performance (MoE, 2013). Setting standards for principal leadership practice around instruction further suggests that instructional leadership is recognized for its central position in impacting overall school development in China (Zhao & Song, 2014; Zhang, 2014).

Empirical knowledge on instructional leadership in Chinese schools remains largely unexplored. According to Zhao and Song's (2014) study, prior to 2004, there are very few academic discussions in the CSSCI database on instructional leadership. Moreover, empirical evidence on instructional leadership practice is also rare in the English literature (Li, 2015; Li, Walker, & Qian's, 2016, April). Among the limited empirical evidence on instructional leadership practice in Chinese schools, Li's efforts to build a conceptual framework established a conceptual model of instructional leadership based on in-depth interviews of 22 Chinese principals in the context of Chinese new curriculum reform. Part of Li's framework is supplemented as the Chinese uniqueness in this study. In contrast to the barren grounds of instructional leadership research in China, it is predicted that increasing research interest has gradually gathered around the issue of understudying Chinese principals' instructional practice (Ma & Wu, 2013; Zhang, 2013; Zhang, 2014; Zhao & Song, 2014) due to global interest in Chinese students' success on international tests (Walker & Qian, 2015). Furthermore, most prior referred studies which examine self-other rating differences between principals and teachers have been conducted in the western context, particularly the US,

where the societal norms regulating principal-teachers interaction are different from those shaping its counterparts in China. Compared to the west, Chinese culture is evidently distinctive to western culture. More specifically, as a culture rich in Confucianism, traditional values such as loyalty, duty, and obedience are deeply imbedded in the Chinese people's way of behaving (Fan, 2000). Many Chinese scholars such as Li and Shi (2005) emphases the importance of "Morale Modeling" in Chinese leadership practice, the impact of the role model, high self-requirement, such different cultural norms may result in different pattern of perceptual discrepancy in Chinese schools. In this respect, it is still a question of the issue in Chinese schools. Thus, more empirical studies are needed to reveal Chinese principals' instructional leadership practice, and the issue of principal-teachers' rating differences on principal instructional leadership performance.

Moreover, the limited, existent empirical studies on educational leadership are either focused on schools in the eastern coastal cities or on schools in the western rural areas: the former are more developed with better educational resources whereas the latter are barren in both education and economy. The central region of China is a much less studied area across Chinese territory. Nonetheless, this study chooses to sample in Henan province for several more important reasons. First, as one of the first experimental targets, Henan province underwent the new curriculum reform in 2001 (MoE, 2001). Principals and teachers in Henan had to face the high instructional requirements of the new curriculum with limited experience as did the other experimental cities and provinces, such as Beijing and Shanghai. This means what happened in Henan schools may also be found in other experimental schools. Studies on the impact of new curriculum reform in terms of instructional leadership that sample in Henan are rare, not even mention the situation of self-other rating differences between principals and teachers on evaluating principal instructional leadership. How principals in Henan adjust their instructional leadership practice to the new curriculum reform has barely

been documented in the literature in this field.

Second, sampling principals and teachers in Henan can, to a great extent, represent Chinese schools in general, particularly those in the first batch of new curriculum reform experiments for several reasons. Although Henan has a strong economy, ranking fifth in China since 1995 (National Bureau of Statistics, 2016), Henan also hosts the largest student population of compulsory education level in China, as many as 13,418,600 students and 833,500 teachers in 29,200 schools, according to official numbers in 2015 (The Education Department of Henan, 2016). Consequently, economic wealth has to be very stretched and average wealth is low. Moreover, about 4.26% of the total value of Gross Domestic Product of China went to fund Chinese educational systems in 2015 (MoE, 2016), of which 5.5%, a similar percentage, was allocated to Henan (National Bureau of Statistics, 2016). So in terms of the low average economic level of its citizens, the large student numbers, and a similar ratio of financial support to the country as a whole, the educational situation of Henan in China can stand as proxy for that of China as a whole.

Lastly, schools in Henan are still operated in a traditional way while becoming more student-and-quality orientated. Conflicts about teaching students and managing schools brought by the clash between old and new methods of schooling may be more of a hassle than coastal cities are experiencing, such as Shanghai, which has already achieved the adjustments, while less developed places than Henan are struggling to even begin the actual change. Standing in the middle of change towards progress, the internal fluctuations of Henan education are dynamic and diversified. Therefore, choosing a sample from Henan province, a central region in China is necessary in terms of representativeness and potential in terms of generalizability.

1.3 Problems and Research Purposes

1.3.1 Insufficient Empirical Studies

The first research problem is that little is known about the practices of Chinese instructional leadership, and there is even less evidence comparing the perceptions of principals and teachers regarding instructional leadership. Not just instructional leadership, the entire field of educational leadership is less examined empirically (Walker, Hu & Qian, 2012; Qian & Walker, 2013). Conversely, perceptual arguments and personal reflections have been labeled as research and have dominated Chinese educational research (Walker, Hu, & Qian, 2012). As a result, the pattern and characteristics of Chinese principal instructional leadership performance are largely unknown. Because of the lack of empirical evidence, studies that examine the perceptual (dis)agreement using Chinese samples are largely absent in both the Chinese and English literature, except for a few doctoral dissertations, such as Jiang (2015). In addition, in terms of lacking empirical evidence, Henan province is probably at the top of the list. With a strong economy and the largest student population, Henan has not been successfully drawing academic attention while the east and the west, the most and least developed areas of China often do. Based on this status quo, it is salient that there is a research gap in the literature for a sample from the central region of China. It is thus worthwhile to examine how Chinese principals and teachers vary in perceptions of principal instructional leadership by sampling in Henan province.

In responding to this problem, the first research purpose is to investigate characteristics of Chinese principals' instructional leadership practice through multiple raters, and to test the significance of the perceptual differences between Chinese principals' self-rating and teachers' evaluations.

1.3.2 Cultural Perspective

The second research problem identified from the literature relates to culture because most studies examining self-other rating differences have been conducted in the Western context. The current knowledge of the issue has been mainly produced by Western countries, particularly the United States (Atwater, Waldman, Ostroff, Robie & Johnson, 2005), where the societal norms regulating principal-teacher interaction are very different from those shaping its counterparts in China. Thus, in addition to the lack of empirical studies on instructional leadership in China, the limited existent studies seldom include cultural factors in the research design, so the researchers could only assert that the different results might be attributed to cultural factors. Therefore, more studies using different cultural samples and including cultural factors are needed to verify the cultural assertions.

In answer to this problem, the corresponding research purpose is to measure to what extent that cultural factor (power distance) as a moderator can influence the perceptual differences between the two parties.

1.3.3 Organizational Perspective

Last, the effect of organizational structure is under-examined in explaining the perceptual gap between leaders and followers, although scholars have put forward diverse views to explain the perception disparity, most of which can be classified from a perspective of self, for example, principals' self-efficacy (Lord & Maher, 1991) and belief system (Henderson, 2007). Complementing this approach of explanation, the gap between self-other rating may contingently depend on organizational structure. It is noticeable that in large organizations, individuals holding higher positions in the organizational structure and who are responsible for more followers are more likely to decrease interactions with their followers (Brutus,

Fleenor, McCauley, 1999; Murphy & Cleveland, 1995) Therefore, this line of argument can be also applied to schools because modern schools are essentially organizations with complex structure, divided specializations (departments) and levels of management which cannot be neglected. Similarly, this scenario may reduce principals' transparency and keep them busy with daily bureaucratic chores, decreasing principals' frequency of performing instructional leadership behaviors

Due to the large size of schools, and more precisely, multiple school functions and subject divisions, it is inevitable for principals to rely on a relatively small group of key members to take instructional leadership roles for the diversified and complex demands of teaching and learning. Such an internal hierarchical structure divides schools into departments, levels of management and functions that can distance professional teaching personnel thereby increasing the discrepancies in perception (Brutus et al., 1999). Along the lines of this explanation, the perceptual gap between principals and teachers seems to require another approach related to hierarchical structure. Middle leaders are a likely data source because their positions are created to achieve management effectiveness which makes them the perfect gatekeepers.

Indeed, DeChurch, Hiller, Murase, Doty and Salas (2010) pertinently point out that middle leaders' functions are poorly empirically understood based on their survey of articles in 11 top leadership journals over the past 25 years, not to mention the limited research attention given to them in school settings (Gurr & Drysdale, 2013). Therefore, it is timely to examine to what extent and how these leaders influence classroom teachers on behalf of principals. Additionally, schools in China are often large in size due to the population, so the organizational structure may create a more salient effect on the self-other rating (dis)agreement between principals and teachers on principal instructional leadership in

Chinese schools..

In order to respond to this problem, the last research purpose is to test the relationship of organizational factor (middle leaders' instructional leadership) and the perceptual gaps between principals and teachers on perceiving instructional leadership performed by principals.

In sum, this section has identified three research problems that relate to culture, organizational structure, and the lack of empirical studies on the perceptual gap of instructional leadership in Chinese literature. In order to tackle these research gaps, the aim of this study is to enhance the empirical understanding of the self-other rating (dis)agreement between principals and teachers on evaluating principal instructional leadership. In order to achieve this aim, the study draws the role of culture and organizational structure into the model, which is further examined by data from Chinese schools. Moreover, the model developed in this study is not an all-embracing one that tries to include as many factors as possible that might influence the perceptual differences between principals and teachers, but rather to focus on two factors at cultural and organizational levels that have not yet been sufficiently examined by empirical data, particularly in the Chinese educational context. With findings and insights from data analysis, this study hopes to expand knowledge and improve the practice of Chinese principal instructional leadership.

1.4 Research Questions

In order to respond to the aforementioned research problems and the above discussed research purposes, the following three research questions are proposed to guide the development of this study and frame the research design:

1) What are the patterns of principal instructional leadership as assessed by principals

and teachers in Chinese schools?

2) What are the perceptual differences rated by principals and teachers on principal instructional leadership?

3) What factors affect the rating differences between principals and teachers on principals' instructional leadership performance?

1.5 An Overview of General Conceptual Framework

This study is designed to test the self-other rating difference in the Chinese educational context. Empirical studies have been recording the perceptual differences between the two parties, and it seems that the magnitude of the reported differences has increased. Hallinger and Murphy (1985) reported slight differences between principals' self-rating and teachers' rating, with principals' rating being higher than that of teachers. Later studies have also recorded differences, which have been significant on one or more dimensions of instructional leadership (e.g. Chi, 1997; Haack, 1991; Haasl, 1989; Park & Ham, 2014; Ratchaneeladdajit, 1997; San Nicolas, 2003; Smith, 2007; Vinson, 1997). For example, Henderson (2007) and San Nicolas (2003) found the significant differences on all key dimensions or all functions of PIMRS between principals and teachers regarding principal instructional leadership. These results suggest that significant perceptual differences are not found in just one case or two but are sufficient to require further research attention. With similar school settings and a structural system similar to mainstream western schools, the perception disparity of principal and teacher in terms of instructional leadership would be expected to occur in the educational reform context of China. Nonetheless, this study aims to do more than replicate a phenomenon with Chinese samples by including cultural and organizational factors.

Given the situation that most literature on perceptual disparity of instructional leadership

derives from America, it is reasonable to argue that culture will be a potential influential factor when this study examines principal leadership in China, where the principal-teacher interactions operate on different societal norms (Hallinger, 2016; Walker, Hu, & Qian, 2012). Leithwood et al. (2010) further remind that although leadership practice can be similar, how leaders perform these actions may be different. From this perspective, leadership can be culturally contingent (Den Hartog, et al., 1999). For example, due to Confucian values, Chinese culture rewards non-aggressive behavior (Fu, 1999), and further, in a high collectivism culture such as China, value is placed on long-term relationships with stakeholders (Waldman, Luque, Washburn, & House, 2006). Recent school leadership studies have begun to realize the critical role of culture in shaping school leadership practices (Leithwood et al. 2010; Qian, Walker & Li, 2017; Walker & Dimmock, 2002).

Because there is insufficient empirical evidence on principals' instructional leadership in non-western societies (Qian, Walker & Li, 2017), and particularly China (Walker & Qian, 2015) the results of this study will be useful to expand knowledge about the influence of culture on instructional leadership. Moreover, it is natural and logical to include cultural conditions into the theoretical framework because social and cultural context have been reported to influence leadership practice (Clarke & O'Donoghue, 2017; Hallinger, 2016). Following this line of argument, cultural influence will be included in the conceptual framework and may function as a potential factor that moderates the rating gap between Chinese principals and teachers on perceiving principal instructional leadership.

Among the many efforts to conceptualize culture, Hofstede's work is one of the most comprehensive studies on values and behaviors which are impacted by culture. In his article, Hofstede defined culture as "the collective programming of the mind distinguishing the members of one group or category of people from others" (2011). The definition is

straightforward, and it explains why one group of people's behaviors and values are different from another one. The concept of culture had been framed as a variable with five dimensions that were later expanded to six, namely, power distance, uncertainty avoidance, individualism versus collectivism, masculinity versus femininity, long term versus short term orientation, and indulgence versus restraint (Hofstede, 2011). Since my study draws research attention mostly from the empirical evidence of American scholars, it is necessary to present the differences between China and America on each of the cultural dimensions. According to data from the Hofstede Centre (2017), the scores of China and America on power distance are 80 and 40, uncertainty avoidance are 30 and 46, individualism versus collectivism are 20 and 91, masculinity versus femininity are 66 and 62, long term versus short term orientation are 87 and 26, and indulgence versus restraint are 24 and 68. These numbers suggest that the two cultures are distinct from each other in four out of six dimensions, and a large variance appears on power distance, individualism versus collectivism, long term versus short term orientation, and indulgence versus restraint. Among them, this study chooses power distance to investigate, for the following reasons.

The concept of power distance was developed by Hofstede (1980) and much of his later work took place within the framework of culture. Power distance originally referred to people's unequal power within a society. I adopt power distance in my study because gradually, more studies have applied the concept at organizational and individual levels (e.g., Farh, Hackett & Liang 2007; Kirkman, et al, 2009), and power distance is treated at the individual level in this study. The concept at individual level is named as power distance orientation (PDO). Second, the contrast and the variance is large between China as a high-power distance culture and the West, particularly the United States, as a low power distance culture. Third, previous experience shows that power distance is one of the most effective social-cultural moderators that facilitate possible variations of leadership findings in Chinese societies (e.g., Dimmock

& Walker, 2005; Farh, Hackett & Liang 2007). Power distance orientation at the individual level has a stronger theoretical connection to leadership and how leaders are perceived than other cultural dimensions (Kirkman et al, 2009; Lian, Ferris, Brown 2012) Fourth, Chinese schools are hierarchical organizations in which power is unequally distributed, and therefore power distance is a salient variable within such structure. Consequently, power distance is included in the conceptual framework of this study and may function as a potential factor that moderates the rating gap between Chinese principals and teachers in perceiving principal instructional leadership. Principals and teachers' power distance as high and low are independently tested.

In addition to the above cultural aspect, this study examines the perceptual gap from the aspect of organizational structure. As mentioned, modern schools are essentially organizations with levels of management, structure, and divisions of labor. It has been noted that the organizational factor is essential to facilitate instructional leadership in a school setting (Park & Ham, 2014; Southworth, 2002). Consequently, the perceptual discrepancy between leaders and followers may contingently depend on the organizational structure (Murphy & Cleveland, 1995). First, because the internal hierarchical structure divides a school into smaller parts, such as departments which would expand the distance of professional teaching staff from leaders thus increasing the gap (Brutus et al., 1999). Second, leaders who have a higher position in larger organizations may be responsible for more subordinates, so the interactions between them can be few. The situation also applies to schools. As a result, this may lower average principals' transparency of leadership behaviors for the body of teachers. As Goff, Goldring, and Bickman (2014) further pointed out that along with the increase of school size, there is likely to witness the decrease of self-other rating agreement. Accordingly, school structure may be one reason for the perceptual gap of instructional leadership. Indeed, the hierarchical structure is salient in Chinese school

organizations (Liu, Hallinger, & Feng, 2016). A typical Chinese compulsory school is large in student numbers and complex in structure. The average ratio between principal and teachers for Chinese primary school is 1:25 and 1:66 for Chinese junior secondary school (MoE, 2015). Consequently, more instructional helpers are needed to support principals in terms of instructional leadership.

Furthermore, as instructional leadership is a shared responsibility which includes principals, assistant principals, curriculum leaders, and district support (Stokes, 1984), it is wrong only to ask whether principals perform effective instructional leadership behaviors when more than half of instructional leadership functions are delegated (Stokes, 1984). Worner and Brown (1993) point out that accountability which is the quality control for instructional service is viewed as a mechanism of shared responsibility. More recently, a growing number of researchers have realized that principals alone are not the answer to effective instructional leadership (e.g., Marks & Printy, 2003; Spillane, 2006) and that principals alone are not able to hold the line as sole leaders for new challenges and school improvement (e.g., Fullan, 2006; Leithwood, Anderson, Mascall, & Strauss, 2010; Marks & Printy, 2003; Mulford & Silins, 2003; Spillane, 2006). But who are the principals' instructional leadership helpers?

The answer is school middle leaders. As discussed, the position of middle leader was created to better manage teachers who have similar instructional functions, such as teaching the same subject. Placed in the middle on the hierarchical organization, middle leaders are structurally and naturally required to connect principals and teachers (Brown & Rutherford, 1999). On the one hand, they have to carry out school decisions and policy handed down by principals or the school senior leadership team (Ding, 2011); on the other, they forward information about front line teaching and learning up to the top (Brown & Rutherford, 1999). In this way, middle leaders form a bridge between principals and teachers. If they are effective in these

leadership responsibilities, middle leaders are able to extend principals' instructional influence and teachers will have another channel through which to perceive their principals. Following this line of reasoning, this study includes middle leaders for their potential ability to influence the perceptual gap between principals and teachers on viewing principal instructional leadership practice. The role and position of middle leaders give them access to perceive principals' intentions and to take responsibility to act on behalf of principals in front of classroom teachers. Ideally principals can interact with middle leaders positively so that middle leaders can function helpfully for teachers. Therefore, from an organizational hierarchical perspective, middle instructional leaders may impact the perceptual differences between principals and teachers on perceived instructional leadership. The conceptual map on which this study is based is illustrated in figure 1. The detailed development of this Conceptual framework is unpacked in the chapter of the literature review.

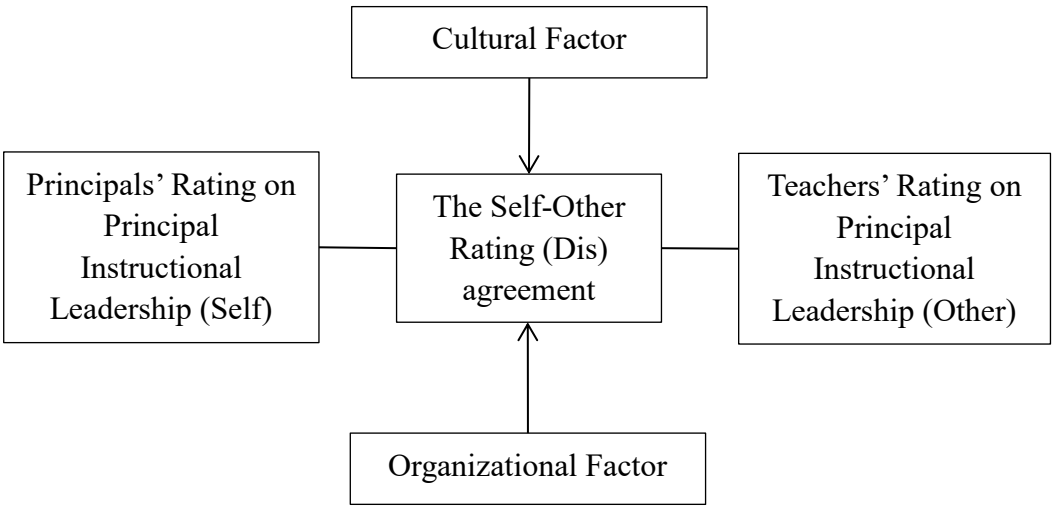

Figure 1. General Conceptual Framework

1.6 Significance of the Study

This study aims to shed light on the perceptual gap between principals and teachers regarding instructional leadership and the role and impact of cultural and organizational factors on it within the educational reform context of China. Choosing such a research angle is significant and may contribute to the literature in at least four ways. First, it chooses instructional leadership as the research focus which is responding to a national and global issue of concern. Although the importance of IL and Chinese principals as instructional leaders has been increasingly acknowledged, the empirical research on instructional leadership is limited in China. This study adds to the international literature by providing Chinese empirical evidence. This study sampled in the central region of China, specifically in, Henan province, which is one of the sites that receives the least research attention but has the largest student population in Chinese territory compared to the eastern and western parts of China. Second, how differently Chinese principals and teachers perceive instructional leadership performed by principals is largely unknown, so the results documenting the perceptual differences between principal and teachers on principal instructional leadership will fill this void in the literature. Third, PD is widely cited as an important cultural dimension that underpins principal-teacher interactions, but the cultural assertions are rarely tested in school outside Western contexts, so the inclusion of PD as a moderator in this study will enable empirical testing of whether cultural aspects influence results in Chinese schools. Fourth, the organizational structure, represented by school middle leaders, is taken into consideration. The examination of middle leaders presents a complementary approach to the current literature, which mainly focuses on the perspective of self or on school demographics. This study may be a pioneer in this direction of research. In sum, this study is among the efforts to produce new understanding on instructional leadership practice in terms of principal-teacher perceptual disparities of principal instructional leadership performance. The results of this study contribute to the

international literature with the hallmarks of Chinese culture and the practice of distributed instructional leadership.

Moreover, this study carries the practical significance that the perceptual disparities between principals and teachers in perceiving principal instructional leadership practices are meaningful for leadership development and school improvement. First, principals are able to identify perceptual inconsistency by having more school stakeholders evaluate their instructional leadership performance. In this way, they can learn how their leadership performances are perceived, which can provide motivation and direction to improve. Second, principals and district officers could learn from the perceptual discrepancy between principals and teachers and take appropriate action accordingly in order to promote the school improvement. To conclude, this study provides essential knowledge on the practice of instructional leadership in Chinese schools.

1.7 The Structure of the Thesis

This thesis is structured into six chapters. The first chapter is the introduction. It provides an overview of the dissertation. It begins with asking the question why focus on the concept of instructional leadership. After examining instructional leadership from two different sources, the chapter proceeds to identifying research problems. Three research gaps are discussed, which lead to the purpose, research questions, and significance of the study.

The second chapter of this study is the literature review. It identifies and summarizes relevant studies in both English and Chinese literature in a systematic way. It covers literature that contributes to the conceptual development and understanding of instructional leadership, self-other rating (dis)agreement, power distance, middle leaders, and Chinese educational context and pulls them into one conceptual framework. Guided by the development of this

framework, research questions are further elaborated into hypotheses. The overall aim of chapter two is to establish the relationships among principals, teachers, power distance, and middle leaders in terms of perceiving and performing instructional leadership.

Chapter three is the methodological framework. It outlines the research design, process of instrumentation preparation, sampling, and data collection procedures of both the first and second phases. This chapter also contains the analytical strategy for both phases.

Chapter four sets out the results of scale validation. Reliability and validity tests, such as Cronbach's alpha, and CFA were performed. Profiles of the participants and samples are provided. Adjustments of suggestions to PIMRS were made.

Chapter five presents the second part of the results, mainly the results of hypotheses from the second phase of the study. It begins with demographic information on this set of samples. Then descriptive analyses are performed and results are presented subsequently. Then the chapter moves to the results of hypotheses testing. The results of statistical analyses are presented in detail.

Chapter six is the last chapter of this dissertation, which summaries the key findings of the previous two chapters of results. In-depth discussion and interpretation of the results follows. This chapter ends with implications, limitations, and recommendations for future studies.

Chapter 2: Literature Review

This chapter reviews the literature in order to elaborate a conceptual framework and guide to the research hypotheses. There are six sections comprising the following topics: the importance of focusing on instructional leadership, the development of instructional leadership, the conceptual models and instruments that measure instructional leadership, the research focus on the perceptual differences between principals and teachers in terms of instructional leadership, possible causes for these differences and the influence of cultural conditions, and the impact of organizational hierarchy. Having established the research topic, this study focuses specifically on issues in the assessment of principals' instructional leadership. A gap is often reported in the literature, a significant difference in principals' self-rating and teachers' evaluations. Following this clue, this chapter reviews relevant studies and discusses several possible explanations. It further points to other approaches to elucidating the issue from the current perspectives in the literature with regard to culture and organizational structure. In this respect, a conceptual framework has been established to shed light on self-other rating differences between Chinese principals and teachers in terms of assessing principal instructional leadership performance.

2.1 Instructional Leadership: Improving Student Learning Achievement

This section further explains the reasons for focusing on the concept of instructional leadership. Briefly, research on instructional leadership has re-gained academic discussion since the turn of the new millennium, due to a new wave of educational reform policy. Additionally, international tests, such as the Programme for International Student Assessment (PISA), have taken student competitions among nations to the next level. As a result, student learning results have been considered as a central measurement for the success of both education and students. This re-shift to the improvement of student learning outcomes

encourages all possible approaches in positive association with student learning, including educational leadership. The following section begins with the literature on the connecting of instructional leadership and student learning performance, followed by the pushes of PISA, and the Chinese government's outlook for education.

2.1.1 The Connection between Instructional Leadership and Students' Academic Performance

High-quality graduates of compulsory education are of extreme importance for a nation's future. They are expected not merely to have the potentiality for higher education but, more importantly, to possess skills that are needed to perform essential functions as qualified future workers. In order to secure and improve student learning outcomes, many countries, represented by the United States, have issued a series of policies and documents since the 1980s to secure the quality of schools. For example, the National Commission on Excellence in Education's report "A Nation at Risk" (1983) addressed the challenge of a shortage of quality workers caused by poor student academic outcomes in America. The report initiated a series of educational reforms in the 1980s that aimed to improve school effectiveness (Cuban, 1984). The country continued to raise the standards for students' learning outcomes. Just after the turn of the new millennium, the No Child Left Behind Act (Act, 2001) was signed into law by the Bush Administration. The Act issued mandatory academic performance standards for all American students. More recently, its successor, the Every Student Succeeds Act (Act, 2015), has continued to focus on improving student learning outcomes. Through this effort of nearly two decades, American policy makers hope educational equality in terms of student academic achievement can be improved, and they hope to ensure basic reading and math skills for every American child. This aim may not be easily achieved unless school shareholders are given inescapable responsibilities. For this reason, the accountability policy was issued to hold schools and principals accountable for student learning outcomes. School

leaders who fail to achieve required academic standards face negative consequences.

This accountability policy involves mandatory evaluation systems for principals and teachers, with strict standards required for student learning outcomes (Murphy & Shipman, 2003; Silva et al., 2011). Failure to achieve mandatory student learning outcomes produces negative consequences, such as the replacement of school leaders or even shutting down schools. Similar policies can be found in other OECD countries, such as Britain and Australia, which all stress students' learning outcomes as a major indicator for accountability. Additionally, studies support the argument as truth that a long-lasting school improvement cannot sustain when mature instructional leadership from both school leaders and teachers is absent (Hallinger, 2011b; Leithwood, Harris & Hopkins, 2008). Required by accountability policy and knowledge from the literature, school leadership that emphasizes teachers' instruction and student learning becomes a must instead of a school choice (Murphy & Meyers, 2007; Nettles & Herrington, 2007; Silva et al., 2011). Thus far, the reviewed literature and arguments have well supported the notion that student learning outcomes are a crucial indicator in evaluating the quality of education. Having established this expectation for school education, the next step is to seek methods to achieve it. Since the current study focuses on educational leadership, answers will be found within this field.

The principal is a key figure for school success (e.g., Hallinger & Heck, 2010). In support of this argument, evidence can be found in studies of principals, which have dominated in the literature particularly in the field of school leadership. This predominance is probably due to the significant value that resides in the possibility of influencing dozens of teachers and far more students (Herman, Gates, Chavez-Herrerias, Harris, 2016). Consequently, principals are established as one significant factor for school success. In fact, principals contribute as the second most influential school-level factor, right behind teachers, to student academic

learning outcomes (Coelli & Green, 2012; Leithwood, Louis, Anderson & Wahlstrom, 2004). Having established the critical role of principals in terms of leadership, the next question, of vital value in both research and practice, is what form of leadership should be practiced by principals.

Official standards for principal leadership in schools are perhaps a good place to learn which leadership practices are encouraged and preconized by policy makers. The United States are again used as the example, because the country is one of the pioneers to create principal leadership standards (Fu & Xiong, 2010). As early as 1996, the Council of Chief State School Officers (CCSSO) proposed the first nationwide leadership practice standards for principals, commonly known as the ISLLC, or Interstate School Leaders Licensure Consortium. Within 10 years, 45 states in America had adopted or adapted the standard (Young, Murphy, Crow, & Ogawa, 2009). Since then, three modified versions have been published to attune to the changing requirements of the times. The latest edition of ISLLC was published three years ago. As the national handbook to guide American school principals' daily leadership practice, the 2014 ISLLC standards "place great emphasis on the instructional leadership responsibilities of school and district leaders; provide a common vision for effective educational leadership." (CCSSO, 2014, p.23). This suggests the future direction for principals: focusing on instructional leadership. On a national level, the Chinese government has started to realize the critical instructional functions of principals. In March 2013, the Chinese Ministry of Education (MoE) enacted "standards of professionalism for school principals in compulsory education." The first standard for Chinese principals' leadership practice officially placed instruction-related functions, for example, "leading curriculum and instruction" and "promoting teacher development," as the major criteria for recruiting new principals and assessing a principal's performance (MoE, 2013). The standard suggests that instructional leadership is recognized in the Chinese literature for its central position in

affecting overall school development (Zhao & Song, 2014; Zhang, 2014). Therefore, the connection between instructional leadership and student learning outcome can be seen as widely accepted.

In addition to its own theoretical advantages in conceptualizing principal leadership from instruction, meta-analytical research also provides the conclusion that instructional leadership has the greater influence on students' learning outcomes than competitive leadership approaches (Robinson et al., 2008). According to a recent meta-analytical study conducted by Robinson and her colleagues (2008), instructional leadership's effect on students' learning outcomes is three to four times greater than that of transformational leadership. Specifically, transformational leadership demonstrated an effect size of .11, which is much lower than that of instructional leadership, which is .43, and of the average of other styles of educational leadership, which is .32. Therefore, strong instructional leadership is indispensable to effective schools. Although other leadership styles have emerged, such as transformational leadership, and principals are required to act in multiple roles, instructional leadership has remained the fundamental driving force among school management and administration in terms of school improvement and development (Hallinger, 2011a; Ylimaki, 2007; Southworth, 2002). Including the empirical and syntheses literature reviewed above, the new educational policy and international education competition promote the focus of instructional leadership performance to a higher level.

Given the strong determination in the United States and of course other countries to secure students' learning performance at the compulsory education level, instructional leadership has remained one of the chief concerns in policy making, research, and daily school practice. Few educational leadership approaches have been more central, well studied, and vital than the concentration of instructional leadership on connections between school leaders and student

learning (Hallinger & Heck, 1996; Leithwood, Anderson, Mascall & Strauss, 2010; Robinson et al., 2008). Strong instructional leadership is a key feature of effective schools, a critical factor in promoting quality of education, and a core force in driving school development (Hallinger, 1992; Hallinger & Wang, 2015). The positive effect of instructional leadership on improving students' academic learning outcomes has been consistently confirmed (e.g. Blase &Blase, 1999; Hallinger, & Leithwood, 1994; Hallinger & Heck, 1996; Hallinger, 2003; Leithwood, Day, Sammons, Harris, & Hopkins, 2008; Printy, 2008; Robinson, Lloyd & Rowe, 2008).

2.1.2 Global Attention to Students' Learning Outcome Improvement: Lesson from PISA

In light of the information revolution, is it old-fashioned to continuingly focus on student learning results? It seems that students' individuality has become the main theme of 21st-century education. Even China, the country long famous for examination scores, has been investing tremendous effort in transforming its education system towards quality education. In contrast to suspicions of outdatedness, the battle to improve student learning has ignited the whole world. International communities now collaborate to overcome the challenges of supporting student learning.

Competitions and collaborations with regard to student learning outcomes have become international, for example, the Programme for International Student Assessment (PISA). This test is structured and organized by the Organization for Economic Co-operation and Development (OECD) on a triennial basis with the purpose of evaluating global education systems by examining 15-year-old students' knowledge and skills in reading, math, and science. Formal tests are given to students from participating countries to assess whether they have acquired the knowledge and skills in school to encounter the future challenges of life and studies. Since its launch in 2000, every three years approximately 60–80 countries and

economies collaborate to learn the results. Not long after PISA was first held, it drew great attention and has made an impact at national levels.

This international program provides a rare opportunity for participating countries to discover their students' academic performance at an international level. The quality of education of the participating countries can be easily compared, which creates great pressure for each to learn and accept its students' abilities in the world ranking. In this way, the results of PISA greatly impact each participating country and the rest of the world. In fact, many participating countries, particularly the developed ones, are shocked to learn that their students' learning achievements were unsatisfactory and outperformed, much worse than expected. The word "PISA shock" has been adopted to describe this feeling. It also implies that focusing on student learning outcomes is an internationally practiced criterion to evaluate the quality of education systems. Many participating countries take quick and strong action in hopes of improving their students' learning results. Germany is a representative example.

Germany is a member of OECD and has participated in PISA since its launch. However, the results of German students of PISA 2000 surprised everyone by failing to present satisfying results. Among all 31 countries, German students achieved 21st on reading, 20th on math, and 20th on science; average scores on all three subjects were below the average, and the immigrant students' performances were even worse (OECD, 2001). The results were unacceptable and certainly shocked the German government. In order to promote the quality of schools, the German Minister of Education issued "seven action areas" to improve student learning regarding to the problems identified in results of PISA 2000 (Figazzolo, 2009).

In addition to causing self-modification of their own education system, comparisons among countries in terms of student learning outcomes also attract much attention and spark many discussions with the goal of student learning improvement. The United States once again

serves as an example. Starting in 2000, American students were surveyed by PISA. The results of PISA 2000, 2003, and 2006 lead to the conclusion that American students were below the average performance of OECD countries (OECD, 2001, OECD, 2004, OECD, 2007). However, the American public was largely unmoved by the results, and the media reported the least amount of news, which may because the low educational results are not news for the U.S and they had its "education shock" earlier (Martens & Niemann, 2010). However, what happened in the next PISA disapproved that conjecture.

In 2009, China sent Shanghai students to take the PISA survey; the results went public that Shanghai students had excelled in all three subjects. This time, American media quickly reported the results of PISA 2009, particularly Shanghai's. On December 7th, 2010, the American Secretary of Education at the time, Mr. Arne Duncan, told the New York Time as the following: "We have to see this as a wake-up call. The United States came in 23rd or 24th in most subjects. I know skeptics will want to argue with the results, but we consider them to be accurate and reliable, and we have to see them as a challenge to get better. We can quibble, or we can face the brutal truth that we're being out-educated" (Dillon, 2010). He later asked the OECD to analyze schools that performed well on PISA. The efforts were published in the book "Surpassing Shanghai: An Agenda for American Education Built on the World's Leading Systems".

In sum, PISA scores provoked thought, surprise, and shock in participating nations. Such PISA shock further buttresses the notion of the critical role played by student learning outcomes in education. If students' learning outcomes were not curtailed in terms of their nation and their own future, countries all over the world would not be "shocked" to learn of their students' unsatisfying performance. Thus, it is reasonable to conclude that responsible countries today are fully aware of the essential role of student learning outcomes in school

education, which further indicates that student learning achievements are widely considered an essential measure of results in education and an indicator of the future success of competent talents. Therefore, international competitions in student performance continue to drive school restructuring worldwide, focusing on improving student achievement. In this line of thought, effects that focus on improving student learning are at the heart of educational reform and development. Therefore, instructional leadership should be practiced as a supporting pillar in securing and improving student learning outcomes. In this respect, it is meaningful to continue to explore instructional leadership as a research focus because it is the most effective form of leadership in improving schools and student learning outcomes (Robinson et al., 2008).

2.1.3 Endeavors of China to Future Education: Quality Education

China has been one of the high-achieving countries on PISA since 2009, and it has undertaken a series of education reforms to accomplish today's achievements. In this context, a great shift in schools in terms of teaching and learning has been witnessed in both literature and practice, which creates fertile ground for educational transformation and research. This section elaborates several influential documents that have reshaped Chinese schools and their educational context, and it discusses the status quo of instructional leadership literature in Chinese Social Sciences Citation Index (CSSCI).

The Guideline of Compulsive Education Curriculum Reform (pilot version) [jichu jiaoyu kecheng gaige gangyao (shixing)] was formally announced by the Chinese Ministry of Education in 2001. The guideline is widely referred as the "New Curriculum Reform" and has involved significant changes in professional practice in schools (Ji, 2011). Before the New Curriculum Reform, traditional teacher-centered instruction encumbered the schooling system (Cui, 2001, Cui & Wang, 2006). For example, subject matter was much too difficult

and complicated, students had been exhausted from mechanical information memorization, and students' examination scores were overemphasized. One of the major objectives was to change the traditional focus on knowledge transfer, forming an active learning attitude in order to learn basic knowledge and skills while at the same time cultivating the right value systems (MoE, 2001). A curriculum that would free every passive learner to be an active and critical thinker through quality education was highly demanded.

The New Curriculum Reform has been very effective in transforming the previous Chinese curriculum in terms of content, structure, and standards. It has pushed school leaders and teachers to become true educators who can place student learning at the center of education and provide students a happy learning experience and childhood. The new curriculum reform does not devalue instruction but raises it to a higher level that demands better quality and effective instruction. The Chinese Ministry of Education lists six objectives in detail in order to achieve quality education for students (Translation from Feng, 2006, pp.132-133):

> (1) Shifting from a narrow perspective of knowledge delivery in classroom instruction to a perspective concerned with learning how to learn and developing positive attitudes.
> (2) Shifting from isolation among subjects to a balanced, integrative, and selective curriculum structure.
> (3) Shifting from out-of-date and extremely abstruse curriculum content to essential knowledge and skills in relation to students' lifelong learning.
> (4) Shifting from students learning passively to students developing capacities to process information, obtain new knowledge, analyze and solve problems, and communicate as well as cooperate with others.
> (5) No longer viewing the exclusive functions of curriculum evaluation to be identification and selection, but adding the promotion of student growth, teacher development, and instructional improvement as additional functions of curriculum evaluation.
> (6) Shifting from centralization in curriculum control to dividing curriculum into three levels of control: central government, local authorities, and schools.

The New Curriculum Reform of 2001 in China aims to replace teacher-and-text-centered instruction to student-learning-centered education. Students are expected to actively engage in learning activities instead of sitting back, just listening, and doing assigned homework. The

problematic old curriculum would be changed, but more importantly, a systemic resolution of education would be promoted to a cultural level that fundamentally replaces the way of schooling (Li, 2008). New instructional requirements of the 2001 curriculum reform ask teachers to become learning facilitators with new teaching skills and capacities, and they expect principals to develop as change agents; for example, school-based curriculums were encouraged to develop (Qian & Walker, 2013). The increasing degree of autonomy in the curriculum empowers principals with decision-making authority with regard to issues related to instruction.

As briefly introduced in the previous section, in 2013 the Chinese Ministry of Education enacted "professional standards for compulsory education school principals" [yiwu jiaoyu xuexiao xiaozhang zhuanye biaozhun]," which officially placed "leading curriculum and instruction," and "promoting teacher development" as two of the six major responsibilities for recruiting new principals and assessing principals' performance (MoE, 2013). It is the first official document that positions principals at the head of leading curriculum and instruction. Principals are expected to come to lead the technical core of schooling according to the standard. It indicates that national-level educational policy acknowledges the role of leading instruction in effective school performance. A similar arrangement for principals and leadership can be found in the American leadership standards for principals, the Interstate School Leaders Licensure Consortium (ISLLC), which considers the responsibilities of instructional leadership as the priority of principalship (CCSSO, 2014).

Continuing the trend of new curriculum reform for quality education, in 2010 the Chinese Ministry of Education released the "Reform and Development of Long- and Middle-Term Planning (2010-2020) [guojia zhongchangqi jiaoyu gaige he fazhan guihua gangyao (2010-2020)]," which clearly states that "quality improvement is the core mission of

educational reform and development" (MoE, 2010). It elaborates that "building a mechanism that promotes educational quality, allocating educational resources, and centering the work priorities of schools to strengthen instruction and educational quality improvement" (MoE, 2010, Chapter 1.2). The policy demands that the principals as the chief instructional leaders should invest more time and resources in the instructional issues of their schools. Breakthroughs of educational leadership often occur at the interconnection of policy, practice, and research (Feng, 2012), which is where China stands now and looks toward its future education. Effective principal leadership of instruction is demanded more than ever before for better teaching and learning in terms of quality education in China.

2.2 Development of Instructional Leadership: Past and Now

This section reviews the development of the concept of instructional leadership, which has a long history rooted in both literature and practice. Since the 1980s, instructional leadership has gradually formed its theoretical framework, represented by Hallinger and his colleagues. This section also briefly discusses problems in early and recent studies on instructional leadership.

2.2.1 The Beginning of Instructional Leadership

Before the 1950s in North America, the knowledge and understanding of school administration did not all come from methodological studies with evidence. Personal experiences of school leaders and administrators dominated the disciplinary practice, for example, stories of the experience of the transfer process from former leaders to current ones (Heck & Hallinger, 2005). Theorized knowledge on educational management and leadership in terms of guiding school leadership practice was unimaginative and unnecessary (Moore, 1964). The 'theory movement in educational administration" of the 1950s pushed to shift academic research activities from personal perception, belief, ideology, and experience into

educational practice through the empiricism of scientific methods (Getzels et al., 1968).

Long before theorized knowledge become tangible, scholars noticed that there was a connection between effective schools and effective principals (Lipham, 1961). Such a notion was once popular folklore among parents and teachers in American society (Lipham, 1961; Tyack & Hansot, 1982). During the theory movement, it is generally agreed that few approaches enjoyed as much attention and fascinated larger numbers of researchers worldwide than the understanding between school leadership and students learning (Hallinger & Heck, 1996a, 1996b; Robinson, Lloyd & Rowe, 2008; Leithwood, Anderson, Mascall & Strauss, 2010). Later, with more empirical evidence, Edmons (1979) suggested effective school leadership for instruction was one of the key factors that could boost school development. His work triggered a wide research interest in school leadership of instruction in America. Leadership that focuses on instruction was connected to effective schools.

Many influential scholars (e.g., Hallinger & Murphy, 1985; Robinson, Lloyd & Rowe, 2008) refer to Edmond (1979) and Bossert and his colleagues' work (1982) as milestones of instructional leadership studies. Emerging from the "effective school movement" in America, a significant point of educational leadership opened its door at the turn of 1980 (Edmonds, 1979). Schools were categorized as effective at the time when all students could succeed regardless of their family background, such as socioeconomic status (Lezotte, 2001). Ineffective schools, on the contrary, had great challenges to support poorly performing students. The differences between effective and ineffective schools were certainly the focus of the effective school movement: Among a long list of characteristics of effective schools, principals who can function as strong instructional leaders are always found in effective schools (Bossert et al., 1982; Lezotte, 2001; Murphy, Hallinger & Mitman, 1983; Sammons, Hillman, & Mortimore, 1995). School principals were acknowledged as "heroes" who were

able to turn a poorly performing school into an effective one (Bamburg & Andrews, 1990; Bossert et al., 1982). The concept of instructional leadership was then gradually formed.

2.2.2 Leadership, not Management

Instead of the term "instructional leadership," "instructional management" was adopted in Bossert and his colleagues' study (1982) because the principal's function as school manager was investigated in terms of government and coordination of instructions and curriculum. The name was later replaced; however, the framework of a principal's managerial functions has remained influential till today (Hallinger & Wang, 2015). Not long after principals' instructional function was observed, the term instructional leadership became preferred because it acknowledges effective leadership through expertise and personal influence more than legitimate power or authority, such as positive motivation of teaching staff and student learning outcomes (Hallinger, 2011b). Few educational leadership constructs have been more central, well-studied, and vital than the concentration on exploring connections between school leaders and student learning (Robinson et al., 2008; Hallinger & Heck, 1996a; Leithwood, Anderson, Mascall & Strauss, 2010).

As a result of the effective school movement, successful schools principals are not merely administrative managers but instructional leaders. Principals had been hoped to have heroic powers to save failing schools (Elmore, 2000); in contrast, principals who function as instructional leaders center their work on the core issue of school operation: teaching and learning. It is referred to as strong instructional leadership performed by principals. The literature has produced positive characteristics and functions of strong instructional leadership by effective principals: goal-oriented (Glasman, 1984; Hallinger & Murphy, 1985), full of expertise and personal charisma (Hallinger & Heck, 2010), coordinators of curriculum and instruction (Hallinger et al, 1996), new academic standard builders for both students and

teachers (Glasman, 1984; Barth, 1990), united between school mission and strategies and activities (Cohen & Miller, 1980; Glasman, 1984; Dwyer, 1986). All of these functions are hypothesized under the assumptions that school effectiveness will improve when principals, as the core of school leadership, focus on instruction. Now, the term instructional leadership has been deeply rooted in the literature and practice.

2.2.3 Problems of Instructional Leadership in Early Studies

Early studies on instructional leadership were criticized by some researchers for their limitations on research designs and scholars' inability to reach a consensus on what instructional leaders should do to improve school effectiveness (Neumerski, 2012). Moreover, as a tool, instructional leadership provided little guidance in school problem solving, as opposed to problem identification (Neumerski, 2012). A gap between research discovery and the needs of reality highlighted the dilemma. Therefore, the deficiency of professional practice in academic instructions and little time spent on principals' instructional management led studies of instructional leaders into difficulties (Feng, 2012). Skeptics also made the company with the development of principal instructional leadership, such as heroic view and high performing expectations.

Moreover, early literature investigates instructional leadership through a trait approach, examining characteristics of successful principals in effective schools (Heck et al., 1990). In this view, good instructional leadership is seen as a result of favored personal traits, such as gender, indicating that principals are successful because they have certain characteristics, rather than a collection of professional skills. However, critics note that the early trait approach of instructional leadership suggests that instructional leaders cannot succeed if they were not born with the traits for effective schools (e.g., Neumerski, 2012). Later studies went beyond this approach, focusing on instructional leadership behaviors that can directly connect

to teaching and learning.

2.2.4 Behaviorally Anchored Instructional Leadership and New Approaches to School Leadership

Behaviors that related to instructional leadership and corresponding measurements began to emerge in the literature in the 1980s. Literature related to instruction and leadership moved beyond the personal traits of successful instructional leaders and focused on specific leadership behaviors that promote teaching and learning. A dozen theoretical frameworks and measurements boomed in the literature, for instance, Knoop and Common's (1985) Performance Review Analysis and Improvement System for Education; Larsen's (1987), Instructional Activity Questionnaire; Kouzes and Posner's (1988) Leadership Practices Inventory; Leithwood and Montgomery's (1986) Principal Profile, and of course, Hallinger and Murphy's (1985) Principal Instructional Management Rating Scale. Among the measurements that emerged from the 1980s, Hallinger and Murphy's (1985) model of instructional leadership has remained vital through constant development and validation. It is one of the most widely used surveys to quantify instructional leadership (Hallinger, 2008; Leithwood, 1999; Neumerski, 2012).

The concept of instructional leadership developed a strong competitive approach in the 1990s, such as transformational leadership, teacher leadership, distributed leadership and shared leadership. Particularly, transformational leadership, based on ideas borrowed from general management, soon became a dominating research focus in the field of educational leadership. Leitwood and his colleagues sharpened the organizational argument proposed by Burns (1978) and asserted that school transformational leaders are needed to provide inspiration for other school members in terms of a shared vision and motivation for greater capacity and higher levels of performance (Leithwood, 1994; Leithwood & Jantzi, 1999, 2000). Transformational

leadership has been pumped into a large number of studies and greatly broadened theories and understandings of educational leadership. Including transformational leadership, these school leadership theories provide different perspectives but also imply a wide dissatisfaction with the model of instructional leadership that placed the principal alone at the center of everything that matters (Hallinger, 2003, 2011b). Research attention on instructional leadership has decreased.

2.2.5 Instructional leadership in the 21st Century

As reviewed in the first chapter, right after the time enters the 21st Century, a series of new policies that aimed to promote effective teaching and learning was passed in the American Congress; for example, No Child Left Behind set mandatory learning standards for all students. Along with that, accountability for schools required mandatory evaluation systems of principals and teachers, with strict standards for student learning outcomes (Murphy & Shipman, 2003; Silva et al., 2011). Failure to present improvement results in the replacement of school leaders, usually principals, and of teachers. For example, the U.S. Department of Education recently had to transform 5,000 poorly performing schools, including replacing principals (Abrevaya & White, 2009). Similar policies can also be found in other OECD countries, such as Britain and Australia, which all take students' learning improvement as a major indicator of accountability. Leadership that focuses on instruction and student learning becomes a must instead of an option (Murphy & Meyers, 2008; Nettles & Herrington, 2007; Silva et al., 2011). As a result, instructional leadership has re-gained a research and practice focus. Evidence for this can be found in principal leadership standards in both the United States and China.

Moreover, the consistent academic foci on instructional leadership lie within its positive effect on school effectiveness. First, a great amount of empirical evidence is reported in the

literature that instructional leadership has positive yet indirect effects on school effectiveness and student academic performance (e.g. Hallinger, 2003, 2011a; Hallinger, & Leithwood, 1994). In addition to empirical studies, syntheses research also reaches the conclusion that instructional leadership has the strongest effect on students' learning outcomes (Leithwood, Day, Sammons, Harris, & Hopkins, 2008; Hallinger, 2011b). Compared to transformational leadership, Instructional leadership has greater effects on student's learning outcomes, about three to four times (Robinson et al., 2008). Second, principals characterize a school's mission and purpose of schooling, which are arguably the most influential effects in terms of a principal's role (Goldring & Pasternak, 1994): All school staff is united under the same belief in terms of school mission through school academic and organizational alignment (Hallinger & Heck, 1996a, 1996b).

In summary, instructional leadership has regained a global research focus. This trend in instructional leadership has quickly generated a large collection of empirical studies that improve upon previous limitations. Many studies published after 2000 support the observation that instructional leadership has merged into school practice and become a mature body of knowledge in academia (Leithwood & Jantzi, 2005; Lee, Hallinger, Walker, 2012; Hallinger, 2010; Robinson et al., 2008). Moreover, these studies also support the fact that a long-lasting school improvement cannot obtain when mature instructional leadership from school leaders and teachers is absent (Hallinger, 2011b; Leithwood, Harris & Hopkins, 2008). On the other hand, other school leadership approaches fail to recognize the core technical activities in school, teaching and learning. Therefore, effective instructional leadership is an essential goal for all successful schools.

2.3 Conceptualizing Instructional Leadership: Development of Hallinger's Model

This section reviews one of the most widely used and influential frameworks in instructional

leadership, Hallinger's model. The original three-dimensional model is reviewed in detail, and the theoretical framework, measurement, the Principal Instructional Management Rating Scale (PIMRS), and the teacher short form are discussed. The last part of this section elaborates proper revisions to PIMRS as localization.

2.3.1 Theoretical Framework of PIMRS

This study adopts Hallinger's theory of modeling instruction leadership, along with its corresponding instrument. Of the many approaches that attempt to frame instructional leadership, Hallinger and Murphy's (1985) model has had the greatest influence and longevity in academic discussion and practice. Hallinger's model contains three dimensions: a) defining the school's mission; b) managing the instructional program, and c) promoting a positive school learning climate (Hallinger & Murphy, 1985). In total, there are 10 functions of instructional leadership under the three dimensions: 1) frames the school's goals; 2) communicates the school's goals; 3) coordinates the curriculum; 4) supervises and evaluates instruction; 5) monitors student progress, 6) protects instructional time; 7) provides incentives for teachers; 8) provides incentives for learning; 9) promotes professional development, and 10) maintains high visibility. A detailed layout of the dimensions and functions are presented in Table 1.

Table 1
PIMRS Theoretical Framework

Dimensions	Functions
A. Defining the school mission	1. Frames the school's goals
	2. Communicates the school's goals
B. Managing the instructional program	3. Coordinates the curriculum
	4. Supervises & evaluates instruction
	5. Monitors student progress
C. Developing the school learning climate	6. Protects instructional time
	7. Provides incentives for teachers
	8. Provides incentives for learning
	9. Promotes professional development
	10. Maintains high visibility

Hallinger (1982,1983) conceptualizes three dimensions of instructional leadership by principals. The first dimension comprises two functions, framing and communicating the school's goals. It is vital for a school principal to play a role in ensuring that his or her school has a clear mission that is focused on students' learning progress. However, the theory does not suggest that the school mission be proposed by the principal alone, as it can also be created collectively. It is the principal's responsibility to ensure that such a school mission is possible and that it is broadly circulated among teachers. Moreover, an academically focused school mission distinguishes effective school goals with vague, poorly defined, and even non-academic objectives. This is the foundation for building a student-centered school (Hallinger, 2010, Hallinger & Wang, 2015).

The instructional functions of supervising and evaluating instruction, coordinating the curriculum, and monitoring student progress constitute the second dimension. Managing the instructional program requires the principal to focus on the management of the professional core of teaching in the school. Principals' behavior in managing the curriculum and their supervision of the instruction ensure that teachers focus on teaching and on solving relevant problems, which also reflects the school's mission from the first dimension, namely a learner-centered learning environment for students. It also requires principals to heavily engage in supervising and managing instructional activities at their school, which demands both professional expertise and commitment. It is also possible that large schools have more than one principal, and most have a vice principal; even teachers are involved in managing, controlling, and developing the curriculum. However, the role of the principal's leadership responsibility is the key to school academic programs and cannot be replaced and asks principals to immerse deeply in teaching and learning activities of their schools.

The third dimension, promoting a positive school learning climate, contains the remaining

five leadership functions: protecting instructional time, promoting professional development, maintaining high visibility, providing incentives for teachers, and providing incentives for learning. This perspective broadened the range of specific curriculums into a learning environment on a school level to promote continuous progress, which is in alignment with school mission and practice (Hallinger & Murphy, 1985; Heck et al., 1990). From this perspective, principals wield soft power to boost teacher's professionalism and professional development, raise learning and teaching standards, and provide motivation for students. As the hallmark, principals demonstrate values and expertise of practice in order to create a climate of learning for continuous improvement. It is crucial to point out that instructional leadership is not merely a task-orientated leadership approach, but a balance of technical focus and school climate building. It is possible to map out principals' instructional leadership functions in terms of distribution of both technical core and learning environment building and maintenance through PIMRS instruments.

2.3.2 The PIMRS: Full Scale Measurement and Teacher's Short Form

The measurement under Hallinger's model for instructional leadership is the PIMRS. The instrument has also been widely used in researching school leadership and relevant factors over the past 30 years (Hallinger, 2011a; Hallinger, 2008; Lee, Hallinger, Walker, 2012; Neumerski, 2012) in more than 200 studies (Hallinger, 2010; Halling & Wang, 2015) from different countries across nations and cultures. The scale has been consistently proved to be both reliable and valid (Hallinger, Wang & Chen, 2013). Moreover, most studies that investigate instructional leadership from both principals and teachers used PIMRS that it enables future comparison with other countries. These are the main reasons the current study adopt PIMRS.

PIMRS was a groundbreaking measurement in 1980s. According to Hallinger (2013), no

instrument to measure instructional leadership was either reliable or validated in terms of research and practice prior to the early 1980s. The original version of PIMRS included 11 subscales and 72 leadership behavior items; it was later reduced to 10 subscales with 50 items (Hallinger, 1983). The current version includes 10 instructional leadership functions under three dimensions, 50 items in total. Each item represents a behavior conducted by principals related with a specific instructional leadership function. The frequency of such behavior is measured on a five-point Likert-type scale from "almost never" to "almost always." The scores are calculated from the mean of all items under the same function and dimension. In this way, a principal's performance can be measured on both a functional and dimensional level.

The scale is a reliable instrument to measure principal instructional leadership scores (Hallinger, 1983; Hallinger & Murphy, 1985; Hallinger, 2010; Hallinger, 2011a; Hallinger, 2013; Hallinger, Wang & Chen, 2013). In the first reliability study of PIMRS, the value of the Alpha coefficients of each subscale ranged from .78 to .90, which indicates reliable scores (Hallinger, 1983). It is noticeable that the table (Table 2.) does not have an overall value of reliability, since each individual instructional leadership subscale is theorized as a distinctive function. More recently, Hallinger (2013) conducted a review of studies using PIMRS, and he also included a meta-analysis result of PIMRS reliability from 43 independent studies over a timespan of three decades. Data from 2,508 principals constitute the sample size, and the results of a cross-scale reliability estimate are .96. The three dimensions' alpha scores are .88, .91, and .93, for the dimension of 'defining a school mission', 'managing the instructional program', and 'developing a positive school learning climate' respectively (Hallinger, 2013). These studies provide strong evidence that the PIMRS has a high level of reliability. As a standard procedure, this study tests and reports Cronbach's alpha reliability in the results chapter.

Table 2
Reliability Estimates of the PIMRS

Subscale	Reliability*	Sample Size
Frame goals	.89	(77)
Communicate goals	.89	(70)
Supervision/Evaluation	.90	(61)
Curricular coordination	.90	(53)
Monitors student progress	.90	(52)
Protects instructional time	.84	(70)
Visibility	.81	(69)
Incentives for teachers	.78	(70)
Professional development	.86	(58)
Academic standards	.83	(76)
Incentives for learning	.87	(61)

* Reliability estimates are Cronbach's alpha coefficients

Adapted from Hallinger (1983)

Validity is another critical concept for evaluating a useful instrument. The concept requires measuring what is conceptualized to be measured. Through Lissitz and Samuelsen's (2007) taxonomy of validation methods, Hallinger and Wang (2015) provide evidence that PIMRS is valid. The authors conclude that 'the PIMRS meets commonly applied standards of reliability and internal validity' (pp. 112). As a suggested standard procedure, Hallinger (2013) suggests that all users of PIMRS should perform reliability and validity tests before applying the instrument. This study adopts his recommendations, and procedures and results of reliability and validity tests are elaborated and presented in chapters 3 to 5.

PIMRS is not one instrument but a set of three parallel measurements: principal version of self-assessment, teacher version, and supervisor version. The three versions contain items with only adjustment of wording to reflect the three perspectives of principals, teachers, and supervisors. A short form for teachers was developed in hopes of increasing data collection efficiency (Hallinger & Wang, 2015). Although filling out 50 PIMRS questions of PIMRS is not necessarily time consuming for one person, such as a principal and supervisor, time can be an issue when the instrument is distributed to a large number of teachers or in combination with another measurement. Including the 50 items from PIMRS, teachers can easily face a

large survey of over 100 questions when combined with other instruments that measure, for example, commitment, efficacy, and teaching practice. Fewer items can reduce the time cost for data collection, allowing for higher time efficiency if the short version of PIMRS can still maintain high reliability and validity. The developers of PIMRS reduced the 50-item instrument to a short form of 22 questions for teachers. Through confirmatory factor analysis, reliability analysis, and comparability analysis, the authors concluded that the "PIMRS Teacher Short Form continued to maintain high levels of internal validity" (Hallinger & Wang, 2015, p.128). However, the teacher short form of PIMRS cannot yield scores on functional levels. Because it has adopted the teacher short form, this study does not perform tests on functional levels of instructional leadership. To briefly conclude, the short form for teachers of PIMRS is able to yield reliable and valid scores at the full-scale and dimensional level of instructional leadership, as the standard PIMRS does. This study employs the most current principal's and teacher's versions of PIMRS to capture the perceptions of both principals and teachers on instructional leadership. Again, as a suggested procedure, this study also tests the reliability and validity of the teacher short form.

2.3.3 Adapting PIMRS to the Research Design

As mentioned in the previous section, there are two parallel versions of PIMRS's original instruments, the principal version and teacher version. They measure principal instructional leadership from different points of view. The items from both versions are identical, except that the items in the principal version start with "As a principal, to what extent do you … ," and the items in the teacher version start with "to what extent does your principal … ". PIMRS has not only been widely used in Western contexts, several authors have already adopted PIMRS in the Asia Pacific region and reported satisfactory measurement quality. Examples can be found in the research of Taraseina (1993, Thailand), and Chi (1997, Taiwan).

The principal form includes 50 items while the teacher short form includes 22 items. Teachers from the same school were grouped with their principal as the nested data.

Mid-leader instructional management rating scale (MIMRS) for middle instructional leaders (MIL) measures their own instructional behaviors, which are adapted based on the PIMRS teacher short form. The items of MIMRS start with "as a middle instructional leaders, to what extent do you …". Due to the accessibility and in consideration of time consumption for the potentially large number of mid-leaders and teachers, the 22 items of the teacher short form (Hallinger, 2013) were chosen instead of the full version; however, the short version was proved to function the same with the 50 items version that reliability and validity are satisfying as reviewed before (Hallinger & Wang, 2015). The only difference worth mentioning is that the 50 items can be calculated at three levels, overall, dimensional, and functional, while data collected from the teacher short form are not able to perform tests on functional levels.

Moreover, social norms and cultural impact may shape the principals' practice of instructional leadership in different countries (Bellibas, Bulut, Hallinger, & Wang, 2016); merely adopting the Western scale may threaten its validity. In order to better capture Chinese characteristics of instructional leadership, ten new items in association with Chinese school uniqueness are added to PIMRS, based on Li (2015) and Li, Walker and Qian's (2016) work. Three survey instruments were distributed to principals, middle instructional leaders, and teachers. Principals were informed of the PIMRS's 50 items plus the 10 extra items regarding Chinese school characteristics. Mid-level instructional leaders were asked to fill out MIMRS, which included 28 items based on the teacher short form and the additional items. These measure the extent to which principals enhance teachers' classroom practice through middle leaders' instructional functions. Teachers were invited to write down their opinions of their

principals on the PIMRS of the teacher short version (32 items, including 10 additional items of Chinese characteristics).

Li's studies (2015), of which one is her doctoral dissertation, involve 22 in-depth qualitative school cases in Guangzhou, China, which investigate Chinese instructional leadership and provide a conceptual model for framing Chinese instructional leadership practice (See figure 2). Li (2015) and Li, Walker and Qian's (2016) model of instructional leadership contains six dimensions: 1) defining purpose and direction, 2) evaluating and monitoring instruction, 3) nurturing a rich learning environment, 4) aligning the curriculum, 5) fostering professional development, and 6) promoting external communication to support learning. A close look suggests that five of the six dimensions are similar to Hallinger's model. For example, Li's first dimension, "defining purpose and direction," are analogous to "defining a school mission" in PIMRS. The combination of Li's second and fourth dimensions, "evaluation and monitoring instruction" and "aligning the curriculum," are almost identical in meaning to "manages the instructional program" in PIMRS. The third and fifth dimensions of Li's model can be categorized under the third dimension of PIMRS. The last dimension of Li's model, "promoting external communication to support learning," does not match any dimensions or functions in PIMRS. This last dimension is added to the PIMRS instrument in this study as the fourth dimension to reflect the uniqueness of Chinese schools.

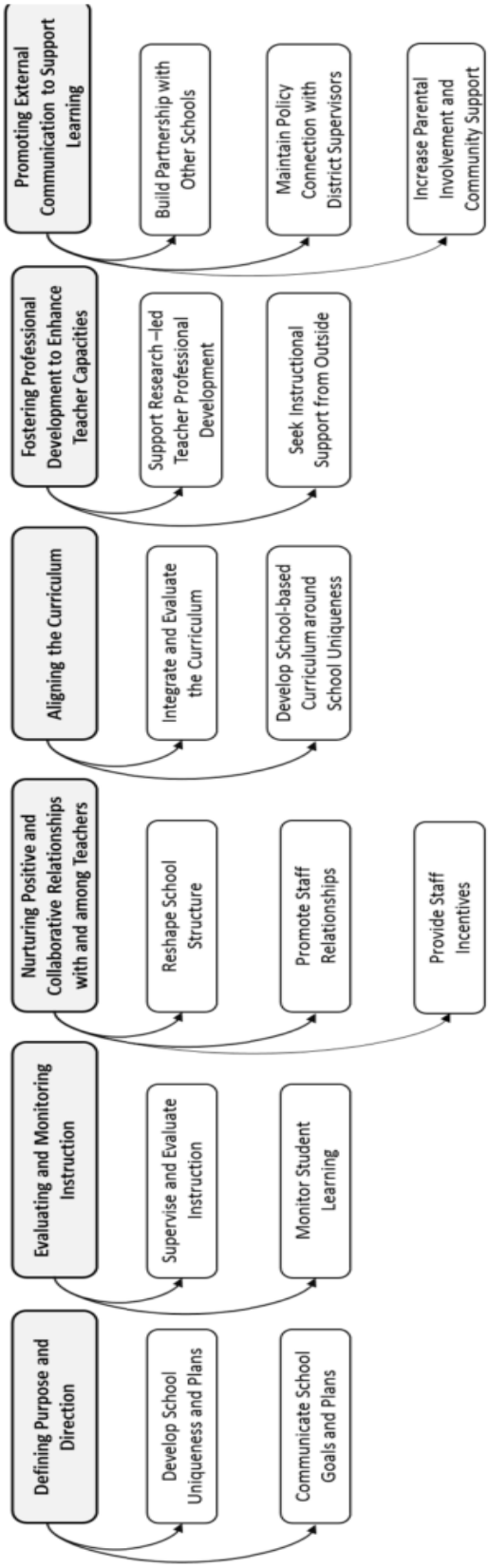

Figure 2. Li's contextualized instructional leadership model in China (2015)

Combining with Li's work, six items were added to become the fourth dimension of PIMRS, "seeking support for instruction within and from outside of schools," and four items were added to the existing dimensions of PIMRS, as localization (See Tables 3 and 4). On the teacher short form of PIMRS, there are 32 items in total, which were distributed to teachers and middle leaders in the pilot and main study. To be more specific, item 4 attributes to dimension 1, item 12 attributes to dimension 2, items 23 and 24 attribute to dimension 3, and items 27–32 attribute to dimension 4. The item arrangement is based on the comprehensive consideration of Li's (2015) construct for Chinese principal instructional leadership, and the pilot interviews of this study. Among the 10 additional questions, 9 of them were added according to Li's studies (2015), a closer examination of Chinese principals. The last item to be added is number 27, "empower middle leaders with a focus on leadership team development." It comes from literature such as Bao (2014), Li and Fok (2015), and Jiang (2010), which was supported by the pilot interviews. It also fits the requirement of instructional leaders in Chinese schools, since one principal cannot perform everything in a huge and complex Chinese school. The item numbers are presented in Tables 3 and 4.

Table 3
Ten additional items added to PIMRS

Item4	Develop school uniqueness and plan (Li's D1-F1)
Item12	Develop school-based curriculum around school uniqueness (Li's D4-F9)
Item 23	Promote regular school-based research activities (Li's D5-F10)
Item 24	Promote classroom teaching reform through multi-methods (e.g., invite teaching experts to come for lectures) (Li's D5-F10, 11)
Item 27	Empower middle leaders with a focus on leadership team development (pilot study interview and literature review)
Item 28	Promote staff relationship (Li's D3-F6)
Item 29	Build partnership with other schools to promote teaching development (Li's D6-F12)
Item 30	Be actively involved in district activities and regularly report school work (Li's D6-F13)
Item 31	Maintain policy connection with district supervisors (Li's D6-F13)
Item 32	Increase parental involvement and community support on teaching activities (Li's D6-F14)

Table 4
Summary of the original and Chinese instruments

	Original Version of PIMRS (Full or Short)	MIMRS	Li's Chinese characteristics	Total Accessed
Principal	50 items		10 items	60 items
Teacher	22 items		10 items	32 items
MIL		20 items	8 items	28 items

2.4 Research Focus: Perceptual Gaps of Multi-Raters on Principal Instructional Leadership

2.4.1 Assessing Principal Instructional Leadership: Self-Other Rating

Self-assessment has been the traditional method for principals to evaluate their instructional leadership. They can be given feedback for improvement based on their self-evaluations. The effectiveness of this feedback depends on the accuracy of the evaluative information of the principals' performance. However, the fact is that principals and teachers have different views on principals' instructional leadership. As early as in 1985, Hallinger and Murphy noticed that principals' self-report scores and teachers' evaluations were not consistent on the PIMRS subscales. Specifically, the teachers' rating of all the functions in instructional leadership is lower than the principal's self-rating. The average mean score of teachers' evaluations of principal instructional leadership is 3.8 and the standard deviation is 1.2, while principals' self-report mean score on PIMRS is 4.2 and the standard deviation is 0.6 (Hallinger & Murphy, 1985). The difference between principals' self-rating and teachers' evaluation is small, only 0.4, which is not statistically different. Although the gap between principals and teachers was reported in their study, the scholars concluded that principals' self-bias and the nature of self-report contributed to the small difference. In fact, any leaders will be perceived differently in the eyes of different subordinates: people are inclined to different styles of

leadership (Dinham, 2007). If the differences between the two parties remain small, the discussion of the issue may be discontinued. However, this is not the case in the literature.

Since its debut, the research on the perception disparity between principals and teachers has expanded. A dozen studies either focus the issue of perception disparity or include it as part of the research. They produce one common result: the self-other discrepancy or perception disparity between principals and teachers in terms of the evaluation of principal instructional leadership has changed. The differences have not remained small; they have increased and become statistically significant. Scores on PIMRS collected from principals are consistently higher than those from teachers (e.g., Chi, 1997; Dennis, 2009; Haack, 1991; Haasl, 1989; Hallinger, 1983, 2011; Henderson, 2007; Krug, 1986; Lorei, 2015; Lyons, 2010; Mallory, 2003; Marshall, 2005; Meek, 1999; Meyer, 1990; O'Day, 1983; O'Donnell, 2002; Poovatanikul, 1993; Ratchaneeladdajit, 1997; Reid, 1989; San Nicolas, 2003; Saavedra, 1987; Salvador, 1999; Shatzer, 2009; Smith, 2007; Stevens, 1996; Taraseina,1993; Tang, 1997; Vinson, 1997; Wafir, 2011; Yang, 1996; Yogere, 1996). Most of these studies are found in Western literature. It is now a fact that many studies capture the perception disparity of instructional leadership. Moreover, it has been confirmed by empirical evidence that there are self-other rating differences; principals and teachers do rate differently on principal instructional leadership (e.g., Hallinger, Wang & Chen, 2013), and the gap between the two parties is increasing.

Moreover, these rating gaps display two patterns. The first and most common one is that principals' self-rating is higher than teachers' evaluations (e.g. Gurley, Anast-May, Lee and Shores, 2015; Lorei, 2015; Lyons, 2010; Ratchaneeladdajit, 1997; San Nicolas, 2003; Stevens, 1996; Waters, 2005), in which a large proportion has statistical difference (Chi, 1997; Henderson, 2007; Lorei, 2015; Lyons, 2010; Miller, 1991; Smith, 2007; Taraseina, 1993).

For example, Henderson (2007) employed PIMRS to examine both principals' and teachers' perceptions of effective instructional leadership. Her study found significant differences on all three dimensions of PIMRS. Both elementary and secondary schoolings are included. Researchers outside of Western culture also report a higher self-rating of principals than the teachers' evaluations (e.g., Thailand, Ratchaneeladdajit, 1997; Taiwan, Chi, 1997).

While in most studies principals rate themselves higher than teachers, a few researchers such as Rogers (2005) support the opposite that teachers give higher ratings. Sinnema, Robinson, Ludlow and Pope (2015) further examined the role of principal age, experience, school size as predictors of the rating gap, and found that all these three factors help to predict followers' over-rating.

2.4.2 Self-Other Rating: (Dis) agreement Between Leaders and Followers

Organizational studies reveal that multi-rater evaluations towards one person are commonly and widely used. London and Smither (1995) point out that almost all Fortune 500 companies are using or plan to use this method in one way or another. It is often referred to as "360-degree feedback" and has attracted much academic interest (Antonioni, 1994; Brett & Atwater, 2001). Collecting feedback from multi-raters of self and others has become popular and significant because it provides information from different perspectives (Kaiser & Craig, 2005), and it is related to leadership effectiveness and improvement (Atwater, Ostroff, Yammarino, & Fleenor, 1998; Park & Ham, 2014).

As a result of applying the multi-rater technique, rating gaps are often reported among different raters, particularly between self and others (Atwater & Yammarino, 1997; Atwater, et al, 1998; Brutus, Fleenor & McCauley, 1999; Johnston & Ferstl, 1999; Ostroff, Atwater & Feinberg, 2004; Sala, 2003). The discrepancies in self-other rating entail meaningful discussion and investigation in academic reports (Atwater & Yammarino, 1997; Atwater, et al,

1998; Brutus, Fleenor & McCauley, 1999; Ostroff, Atwater & Feinberg, 2004). The consensus or agreement between self- and other-evaluations is a key research point and practical issue because of its potential value in various human resources outcomes (Atwater, et al, 1998; Bass & Yammarino, 1991; Craig & Hannum, 2006; McCaulley & Lombardo, 1990; Yammarino & Atwater, 1997). This is also the main focus of this study.

The consensus between self-ratings and other-ratings is of critical value because it is associated with important outcomes and implications (Atwater, et al, 1998; McCaulley & Lombardo, 1990; Park & Ham, 2014; Yammarino & Atwater, 1997). For example, when leaders' self-rating is in disagreement with the evaluations from their subordinates, their leadership is found to be less effective (Atwater & Yammarino, 1992; Atwater, et al, 1998; Park & Ham, 2014; Urick & Bowers, 2014). Halverson et al. (2002) argue that self-other rating is the best indicator of leadership performance because "follower-centered" theories support that followers' perspectives are necessary and important when assessing leadership performance: "The need to understand multi-rater feedback processes has never been greater" (Dai, Stiles, Hallenbeck & De Meuse, 2007, p.3).

The rating differences between leaders and their subordinates in the perception of leadership performance has been accorded research value (Park & Ham, 2014). In this study, the issue is seen as worthy of academic attention in educational leadership not only because the rating gap between principals and teachers is a salient indicator of perceptual (dis)agreement and is representative of a shared school context that involves both principals and teachers (Goff, Goldring & Bickman, 2014), but also because of the possible implications for principal leadership performance improvement (Goff, Goldring & Bickman, 2014; Park & Ham, 2014), leadership effectiveness (Bryk et al. 2010; Park & Ham, 2014), and even school improvement (Sinnema, Robinson, Ludlow, & Pope, 2015).

The mechanism of principal leadership performance improvement behind multi-source evaluation is that the feedback from others provides extra information regarding principal leadership practices. This statement implies that only using principals' own views may not be sufficient to discover those leadership practices most in need of improvement (Church, 1997). Principals are able to take advantage of the information by examining their leadership performance for future improvement (Park & Ham, 2014). In fact, literature has reported a growing tendency for principal evaluations to be supplemented by information from other sources, such as teachers and parents (Goldring et al. 2009). In this way, principals can grasp how they are perceived in the eyes of others; through comparison with their own evaluations, they can identify gaps and start self-improvement. Therefore, the rating gaps might improve principals' future performance.

Moreover, the function of multi-source rating of principal leadership performance improvement can be supported by goal-setting theory, which is a foundation theory of the 360-degree feedback approach. Argued by Locke and Latham (1990), the theory involves actions that aim to motivate a change in people's behavior in order to reach a goal. It indicates that when people understand what is expected in terms of goals, they adjust their behaviors toward change and improvement. The prerequisite of the behavioral change is to know the expectations. However, the traditional self-rating method presents a great challenge to leaders and managers (or in this study, principals) in terms of adjusting themselves to the expected behaviors: They do not have enough information in terms of goals to correct their leadership practice. Therefore, self-rating data alone can hardly provide leadership development information for principals to realize the gap between how they think they have performed and what is observed by teachers. The extra feedback from alternative sources provides a possible gauge in terms of goal setting. Based on this logic and theory, principals would adjust their behaviors for improvement when they realize differences in perception. In

this line of argument, the gaps between self-rating and other-rating on principals' leadership performance are actually indicators of performance; the wider the gap, the more principals may need to improve.

Many studies from the field of business have provided evidence for a positive connection between self-other rating and leadership effectiveness (e.g., Atwater & Yammarino, 1992; Fleenor, McCauley, & Brutus, 1996; Halverson, et al, 2002). Specifically, the fewer ratings gaps there are between self and others, the more effective the leadership. Park and Ham (2014, p.6) explain that "effective leadership needs to be practiced based on good communication and relationships between the leader and members that are constructed through their perceptional processes within an organization." In this respect, the perceptual relationship between principal and teachers determines principal leadership effectiveness (Park & Ham, 2014). Moreover, as a widely referred pioneer study, Marks and Printy (2003) concluded Sheppard (1996)'s argument that "when teachers perceive principals' instructional leadership behaviors to be appropriate, they grow in commitment, professional involvement, and willingness to innovate" (p.393). Clearly, Marks and Printy did not state a critical premise of their conclusion—that instructional leadership behavior must be perceived by teachers before it can be evaluated as appropriate or not. Implied is that the lack of this step prevents a principal's instructional leadership from becoming effective. In this respect, the inconsistency between self-other rating is generally argued to have negative indications in leadership effectiveness (Atwater, Rouch, & Fischthal, 1995; Yammarino & Atwater, 1997; Atwater, et al, 1998; Fleenor, et al., 2010).

Among studies of school improvement, the critical roles of principals have been highlighted in hopes of driving better school performance. For example, Murphy (2013) comprehensively reviewed literature of school improvement, and argues that "leadership has enjoyed a central

role in the school improvement narrative" (p.261). Specifically, long-lasting school improvement is often found with mature instructional leadership practice (e.g., Hallinger, 2011b; Leithwood, Harris & Hopkins, 2008), because a key leadership task is to improve the technical core of teaching and learning (Bryk et al. 2010). In this respect, being able to pinpoint and explain principal-teacher perceptual discrepancy regarding principal instructional leadership is important; the work of reducing the gap is clearly connected to conditions that promote school improvement (Sinnema, Robinson, Ludlow, & Pope, 2015). It is simply hard to imagine large perceptual gaps between principals and teachers in any high-performing school. Therefore, the perceptual differences between principals and teachers in terms of evaluating principal instructional leadership have implications for school improvement.

In summary, self-other rating agreement and discrepancy have proved to be significant in determining human resource outcomes, with meaningful implications. Discrepancies are often found in inflated self-rating, higher than others' rating (Yammarino & Atwater, 1997). Measuring the perceptual discrepancy between principals and teachers deserves more attention because teacher engagement and school capacity building can be negatively affected when wide perceptual differences of instructional leadership occur between principals and teachers (Park & Ham, 2014). Moreover, data from both teachers and their principal manifests a more complete image of principal performance and increases credibility and reliability (Smither et al. 2005). Although different voices argue that it may still be too early to interpret the discrepancies as negative (Gentry, Hannum, Ekelund & de Jong, 2007), it is evident that they have become large enough to receive more attention. Therefore, the issue of self-other rating (dis)agreement should not be left unstudied in the field of educational leadership.

2.4.3 Studies of Chinese Principals' and Teachers' Perceptions of Principal Instructional Leadership

To date, little evidence can be found in either Chinese or English literature on perceptual differences of instructional leadership between Chinese principals and teachers. Jiang's (2015) work is probably the only window through which to view the issue. Jiang (2015) adopted PIMRS and collected perceptions of principal instructional leadership practice from three parties, namely the district deputy and high school principals and teachers. No significant differences were found among them on any dimension or function. The result is not surprising, because his sample only includes eight schools, too few to satisfy the minimum requirement of performing clustered data.

Although Jiang's (2015) doctoral study was a breakthrough because it adopted multi-sources on understanding instructional leadership, the small sample size of eight school principals prevents the results from being generalized. Experience can only be inferred from a similar study on Chinese principal curriculum leadership that was conducted with much larger samples (67 principals and 772 teachers). Wang (2007) collected data from both principals and teachers on their perceptions of principal curriculum leadership. Significant differences are found on all eight dimensions of curriculum leadership. Specifically, principals' self-ratings are substantially higher than teachers' on professional support and acknowledgement, encouraging teachers for professional learning, and discussing curriculum and instruction with teachers. For example, principals' self-ratings are substantially higher than teachers' evaluations of professional support and acknowledgement (Mean of principal= 3.80, Mean of teacher= 3.37, $p<.001$), encouragement of teachers' professional learning (Mean of principal=3.95, Mean of teacher= 3.65, $p<0.05$), and discussion of curriculum and instruction with teachers (Mean of principal=3.80, Mean of teacher= 3.37, $p<0.001$). Nearly

half of the teachers rated their principals as occasionally (42.4%) and never (5.1%) providing professional support and advice. Wang (2007) argues that the gaps occur because principals believe they have done much toward leading curriculum and instruction, but the other side does not agree and expects more. The gaps between the two parties indicate that not all principals' leadership behaviors can be perceived by teachers. The effectiveness of principal leadership on curriculum is then also discounted. Moreover, when the issue is examined in a broader geographical context, Asian countries and areas, such as Thailand, Ratchaneeladdajit, 1997and Taiwan, Chi, 1997, also report significant differences between principals' and teachers' ratings on PIMRS.

Based on this evidence, I am more inclined to conclude that the results of principal-teacher ratings on principal instructional leadership are not consistent and require more study. The significance of this issue resides in the potential value of the consensus or agreement between self- and other-evaluations on leadership effectiveness (Atwater, et al, 1998; Craig & Hannum, 2006; McCaulley & Lombardo, 1990; Atwater & Yammarino, 1997) and school capacity (Park & Ham, 2014). In order to understand the inconsistent results, this study further explores how patterns of multi-evaluation scores can be influenced by cultural conditions. As Atwater, Waldman, Ostroff, Robie and Johnson (2005) remind, our knowledge of multi-source rating in terms of self-other agreement and its relevant influences in literature are largely produced from US samples. More studies across cultures and countries in the field of education are highly demanded.

Comparably, most Chinese schools are government-funded public schools and have similar educational levels and structure to schools in the United States. Within such a school structure, the common arrangement is that one principal is appointed for many teachers by the district level of educational authorities to be responsible for whole schools. Under the

principal's leadership and management, teachers perform daily teaching and learning activities. Therefore, the perception disparity of principal and teacher in terms of instructional leadership can also be expected to occur in a Chinese context.

The evidence of curriculum leadership emerging from Wang's (2007) study may also apply to instructional leadership because principals perform both forms of leadership with the distinct goal of affecting teachers' instruction and related school outcomes. Furthermore, Chinese schools usually have a large size. It is almost certain that principals have to practice stronger instructional leadership to support and improve teaching and learning. Since the self-other rating disagreement has been reported in Western literature and other Asian countries, and similar results have been found regarding curriculum leadership in Chinese schools, the self-other rating difference can also be expected to occur in the Chinese context. Given what has been reviewed and discussed so far, the first research question can be tentatively hypothesized as follows (see figure 3 at the end of this chapter for the conceptual framework):

Hypothesis 1: Chinese principals' self-report of instructional leadership is higher than teachers' perception of principal instructional leadership.

2.5 Possible Reasons behind Self-Other Rating Disagreement between Principals and Teachers on Assessments of Principal Instructional Leadership

This part of the literature review presents arguments and evidence regarding possible reasons for the perceptual gap between self-rating and others' rating of principal instructional leadership. It starts with theoretical inferences based on the assumption that it is challenging for people, leaders and managers in particular, to admit their unsatisfying performance when facing self-evaluations. Then, this section moves to a discussion of specific reasons for the perceptual gap. Power distance is introduced as a possible factor that contributes to

explaining the rating gap. The second hypothesis is proposed accordingly.

2.5.1 Theoretical Explanations on the Multi Rating Differences

Several psychological and leadership theories have been discussed in this section to explain and predict the rating gap between leaders and followers. Specifically, self-awareness theory, attribution bias, implicit leadership theory, and self-defensiveness are reasons found in the literature to theorize the self-other rating discrepancy. These theories are discussed below.

First, people tend to overrate their performance on evaluation scales because of their inclination to protect their self-image and self-esteem (Gioia & Sims 1985; Steel & Ovalle 1984; Tsui & Ashford, 1994). This effect can increase when it comes to leaders' self-reporting. It can be viewed as defensiveness in self-perception (Holzbach 1978; Steel & Ovalle 1984). From this perspective, leaders' self-ratings are higher than others in order to protect themselves, for example, their prestige and authority. Leaders intentionally or unconsciously overrate themselves due to their psychological need to enhance their position and power. For example, they may worry about how to restore power or influence, or about being removed from their leadership position, or about how to interact with and lead their subordinates if they admit to poor or unsatisfying performance of their leadership. Self-defensiveness can explain poorly performing leaders who overestimate themselves compared to others.

Second, attribution theory explains people's tendency to attribute their success to themselves but failures to others or situations (Heider, 1958). In this light, school leaders may rate themselves higher than teachers when there is success; the same goes for subordinates. The reasons for success are much more likely to be ascribed to their own contributions than to their leaders. Moreover, leaders can ascribe failure to external factors to avoid admitting that it is their responsibility. This psychological tendency can facilitate a higher self-rating, compared with their subordinates who may also attribute failure to external reasons, their

leaders' poor performance. Attribution theory explicates leaders' higher self-rating in both success and failure. In school settings, principals may rate themselves high on PIMRS if their students perform well academically, while teachers may think their hard work and teaching skills contribute greatly to the success. Consequently, teachers may not give credit to their principals as much as principals think they deserve. On the other hand, if students of a school fail to reach the expected performance, teachers may attribute it to insufficient instructional focus from their principal, while principals may ascribe it to external reasons, such as new teaching materials. Under such circumstances, principals may still rate themselves higher than teachers' evaluations.

Third, implicit leadership argues that people can have their own understanding of what should be performed by leaders (Lord & Maher, 1993; Yammarino, Spangler, & Dubinsky, 1998). The theory sheds light on teachers' self-perception in interpreting their feelings of principals' leadership performance. The theory further suggests that people have unspoken assumptions and expectations of leaders and leadership that direct their responses to their leaders (Barnett & McCormick, 2004). Applying this idea to the case of this study, teachers may grow ideas of what good instructional leadership is according to their own understandings and experience. In this respect, teachers may rate their principal's instructional leadership behaviors according to their own judgment of appropriateness and expectations. If they perceive principal's practice as inappropriate, they may give him or her low rating. As a result, principals' self-rating may be higher than teachers' due not only to self-bias but also to teachers' different beliefs. A scenario for this explanation may occur in schools with newly appointed young principal but mature and experienced teachers.

Fourth, self-awareness theory hypothesizes that people's behaviors should be consistent with their own perceptions (Atwater & Yammarino, 1992; Wegner & Vallacher, 1980). It describes

people's ability to self-observe. The theory explains that people with a high level of self-awareness demonstrate a strong ability to self-observe, which enables them to be sensitive to feedback from their surroundings, to integrate that information into self-evaluations, and finally to alter their behavior (Dai et al, 2007). Based on this argument, highly self-aware people experience cognitive dissonance when they receive negative feedback. They are motivated to change in order to reduce or eliminate the gap. However, people with low self-awareness are insensitive to information related to their behavior and less likely to improve. It should be noted that feedback is not only limited to self-other discrepancy on surveys but is imbedded in daily interactions with subordinates and environmental stimuli. Self-awareness theory might explain that in this way, the self-other discrepancy could occur in leaders who have a low degree of self-awareness, but there is little empirical evidence to examine the level of principals' self-awareness. The theory can, but only partially, explain how principals with low self-awareness respond to external expectations, and the gap would occur if they were unaware of subordinates' feedback.

In sum, these four theoretical inferences might be true to some degree or in certain situations. It is also reasonable to infer that multiple factors are involved in the process of self-other rating gaps in terms of principals' instructional leadership. Therefore, relying on theoretical conjecture may only create a wide scope of possible inference. The next section reviews empirical studies of the self-other rating differences with regard to principals and teachers.

2.5.2. Explanations for Self-Other Rating Differences between Principals and Teachers

First, Gedifew (2014) argues that one reason for perception disparity on instructional leadership was principals' personal and professional characteristics. In Sinnema, Robinson, Ludlow and Pope's (2015) study, the authors examined the role of the principal's age and experience and of school size as the predictors of perception disparity. The researchers found

that the principal's age and years of principalship as well as the size of the school predict follower overrate. Specifically, when principals are older and have spent many years being principal but few at the current school, and they work in a large school, their self-rating is lower than that of teachers' evaluation. The results indicate that as followers, teachers may admire their principals' personal abilities and charisma. It further implies that principals need to develop trust and teamwork, and the need to share principal-teacher expectations (Sinnema, et al, 2015).

Second, Goff, Goldring and Bickman (2014) also identified that principals and teachers seldom share the same leadership perspective. They reported that principals' self-efficacy is a strong predictor of perception disparity. Principals tend to equate their leadership behaviors with their confidence in the ability to perform them. The more confidence principals have, the stronger they believe their leadership behaviors to be, regardless of whether the actual behaviors are performed. When principals are asked to self-report their leadership performance, the actual answer is their confidence. The authors (Goff, Goldring & Bickman, 2014) also interestingly report that the more time is spent with principals, the less perceptual congruence teachers and principals can achieve. This result reveals that more time spent does not equal higher quality of leadership.

A third type of explanation is based on the study by Devos and his colleagues (2013), which adopted Atwater and Yammarino's (1997) categorization of self-other agreement between school leaders and teachers in Finland. All principals' self-reports from three independent studies of their work on leadership behaviors, school culture, and changes are significantly higher than teachers'. Principals who are categorized as over-estimators are found to have the lowest correlations with school culture and teachers' attitude, particularly in three of the four leadership behavior dimensions, namely participative decision making, organizational

commitment of teachers, and practicality of reforms. The writers proposed a possible explanation that over-estimators are reluctant to welcome feedback from teachers in order to protect self-esteem. Their argument is in alignment with self-defense theory. Moreover, underestimating principals are ranked the highest in association with the same outcome variables. Principals who are "in-agreement estimators" presented lower but similar results compared with under-estimators.

As for the fourth type of explanation, Dai and his team (2007) examined the self-other rating discrepancy from a very different and more fundamental perspective. They studied "rating ambiguity" as a reason or phenomenon that causes the gap. Rating ambiguity is defined as "the extent to which certain competencies can be rated upon clear and interpretable signs or standards of evaluation (p. 8)." "Concrete, observable, or behaviorally defined" measurement items are less likely ambiguous than the ones which are "abstract, not observable, value related, or trait defined" (p. 8). Moreover, the authors proposed the rater's direct perspective as the second explanation for the issue of self-other rating. Misrating can occur when raters do not possess direct perception of ratees. Treating ambiguity as moderators, Dai et al (2007) successfully link rating ambiguity and direct perception to explain self-other rating differences. The more ambiguous the subject of evaluation, the less agreement there is between self-and-other ratings. Moreover, discrepancies between two parties can be expected when raters have difficulties perceiving abilities of ratees in order to be influenced by direct perceptions.

Although a dozen studies have been involved in the discussions of self-other rating discrepancy (e.g., Atwater & Yammarino, 1992; Atwater & Yammarino, 1997; Atwater, et al, 1998; Berson & Sosik, 2007; Church, 1997; Devos et al, 2013; Eichinger & Lombardo, 2004), firm conclusions have not been reached due to this limited number of studies (Dai et al, 2007;

Smither et al., 2005), particularly those based on empirical evidence. It is also salient that educational literature does not agree on what causes the perceptual discrepancy between principals and teachers on instructional leadership. A limited knowledge of individual characteristics as antecedent variables, such as gender, age, and working experiences, largely dominates our current understanding self-other agreement (Fletcher & Baldry, 2000; Goff, Goldring & Bickman, 2014; Ostroff et al., 2004; Sinnema et al, 2015). Although some writers attempt to explore the issue from a different angle, such as self-efficacy (Goff, Goldring & Bickman, 2014), they focus on a similar perspective: that of the self. Little research examines contextual factors. Compared to Western countries, where most studies of self-other rating were conducted, Chinese culture is collectivist and features large power distances. Under such cultural determination, individual variances may submerge into collectivity. Nevertheless, this potential explanation has been less discussed and analyzed using empirical evidence. In this light, the current study pioneers a different perspective, one that examines self-other agreement between principals and teachers from an angle of cultural impact.

2.5.3 Cultural Impact: Power Distance as a Potential Moderator

In order to understand the inconsistent PIMRS results of principals and teachers' perceptions, I propose cultural factor as one possible contextual explanation. This study further explores how patterns of multi-evaluation scores can be influenced by cultural conditions. Atwater, Waldman, Ostroff, Robie and Johnson (2005) have reminded us that knowledge of multi-source rating in terms of self-other agreement and its relevant influences in literature are largely produced from US samples. In addition, Qian, Walker, and Li (2017) noted the necessity of researching instructional practice associated with cultural value since cultural context can impact leadership practice (Leithwood et al., 2010; Qian et al, 2017; Walker & Dimmock, 2002). As a result, there is a demand for future studies to look at the issue across

cultures.

In the school leadership and management literature, there is a growing consensus that social-cultural contexts shape school leadership practices (Clarke & O'Donoghue, 2017; Hallinger, 2016). In this respect, scholars and practitioners are cautious about applying ideas derived from other social-cultural contexts to their own societies. Considering that most studies on perceptual (dis)agreement between principals and teachers on principal instructional leadership were mainly conducted in Western societies, as I have amply reviewed, it is necessary to include Chinese cultural factors in the current research because it was conducted in China.

The influence of culture is considered mainly because it is one of the most noticeable differences between China and the West. Compared to the West, represented here by the Unites States, where individualists prevail, China is a collectivist society (Kirkman, Lowe & Gibson, 2006). Moreover, as a culture rich in Confucianism and with an extremely large population, hierarchy is salient in China (Farh & Cheng, 2000). Traditional values such as loyalty, duty, and obedience are deeply imbedded in the Chinese people's way of behaving (Fan, 2000). The list of cultural differences could go on for pages. Among them, there is a particular factor which has been widely considered a leading variable between Chinese culture and the West, namely power distance.

Power distance (PD), a dimension of the concept of culture, refers to people's acceptance of unequally distributed power in a society (Hofstede, 1980). The concept has been extensively studied at a societal level for cross-cultural comparison (House et al. 2004; Lian, Ferris & Brown, 2012). Nonetheless, increasing attention has been paid to organizational and individual PD orientation (e.g., Ackerman & Brockner, 1996; Farh, Hackett & Liang, 2007; Kirkman & Shapiro, 2001; Kirkman et al, 2006; Kirkman et al., 2009). The variations of

individual cultural values should be acknowledged because the country's mean scores regarding culture values provide little information on how culture affects people's behaviors in an organization. Operationalized at individual level, it is conceivable that the individual level value of culture is closely linked to the societal level so adopting power distance at the individual level implicitly incorporates the societal context of culture.

The focus of the current study looks into the perceptual difference of principal and teachers in terms of principal instructional leadership behaviors in China. Therefore, the efforts to investigate the moderating role of power distance not only enhance the understanding the role of individual power distance orientation between principals and teachers, they also focus on the country specific of power distance in Chinese context. Therefore, PD is proposed as a moderator for the perceptual gap between principal and teachers for two reasons. First, as a nation, as reviewed before, the PD index of Chinese culture is reported as high as 80 (Hofstede, 2001), which indicates that people are inclined to respect authorities and follow instructions from leaders. This is certainly the case of the interaction between principals and teachers in Chinese schools, which adopt multiple-level, top-down, and clearly defined hierarchies of power. Second, PD is found to be one of the most effective social-cultural moderators that help explain possible variations of leadership findings in Chinese societies (Kirkman, Chen, Farh, Chen, & Lowe, 2009; Dickson, Den Hartog, & Mitchelson, 2003; Dimmock & Walker, 2005; Farh, Hackett & Liang, 2007; House et al. 2004; Kirkman, et al, 2006; Lian, Ferris & Brown, 2012; Zhang & Begley, 2011). The theoretical premise is that people with high PD orientation have greater concern for the treatment they receive from authorities. Following this logic, I argue that PD may serve as a potential factor that influences the perpetual gap between Chinese principals and teachers in perceiving principal instructional leadership.

In cultures with low PD orientation, people generally have stronger social connections with leaders and individuals prefer equal relationships; they will initiate disagreements or even criticism, particularly to their supervisors (Tyler, Lind, & Huo, 2000). Based on this argument, it can be further elaborated that when PD is low, principals and teachers are inclined to establish more equal relationships and direct interactions. Principals may welcome different voices, and teachers may even dare to disagree. Therefore, teachers' ratings will be likely lower than principals' self-evaluations. In contrast, in high PD cultures, people tend to be role oriented, accept the difference of power, and be more deferent and obedient to authorities (Farh, Hackett, & Liang, 2007; Lin, Wang, & Chen, 2013; Tyler, Lind, & Huo, 2000). It can be inferred that when PD is high, teachers will treat their principals as authorities and show them respect or fear. Under this circumstance, teachers are more likely to rate their principals higher than principals' self-ratings. Another possible reason may reside in Chinese culture that principals highly value moral leadership (Wong, 2001). Considering Chinese culture, the power of ethics, high morale modeling, and Chinese principals with high moral conduct and benevolence, they may have high self-awareness and expectation for themselves, which leads them to rate their own instructional leadership lower than teachers do.

Moreover, High PD means that principals would prefer role orientated and try to become what they are required to be by the role. In this sense, they have to develop a higher level of awareness of their own behaviors so that they can understand whether their conduct is consistent with the requirements of the roles. Therefore, they may have a greater chance to realize the gap between their actual leadership behaviors and what are required, and then give themselves a low rating. However, the situation may be opposite when PD is low. They may prefer to exert their influence through establishing connections with teachers. During the process, they may be not aware and overlook the requirements of their roles as much as when PD is high. Moreover, it certainly requires more efforts to build personal connections with

teachers since there is one principal and many teachers. This certainly increases the degree of principal instructional leadership performance, and principals may give themselves a higher rate.

In sum, Individual PD can be understood as a cultural factor that affects the perceptual gap between principals and teachers with regard to rating principal instructional leadership. Accordingly, the following hypothesis is proposed to respond to the second research question (see figure 3 at the end of this chapter for the conceptual framework):

> *Hypothesis 2*: PD moderates the perceptual discrepancy of instructional leadership between principals and teachers, such that principals rate themselves higher than teachers do when PD orientation is low (H2a), whereas principals rate themselves lower than teachers do when PD orientation is high (H2b).

2.6 Middle Leaders: Linking Principals and Teachers through Middle Leadership

This section organizes arguments that consider school structures and key personnel, the school middle leaders, as possible factor in influencing self-other rating gaps. First, I bring forward organizational structure as another lens through which to explain the perceptual gap between leader and follower on leadership rating scales. Accordingly, the hierarchical level of organizational structure may contribute to the perceptual differences between the two parties of raters. The following sections start with literature from the perspective of organizational structure. It then argues that instructional leadership is shared responsibilities. The last part of this section proposes the prospective personnel who might hold the key to affecting the self-other rating differences between principals and teachers. A theoretical connection is further proposed at the end of this section.

2.6.1 Understanding the Gap between Principals' Self-Rating and Teachers' Rating on Performance of Principal Instructional Leadership from the Perspective of Organizational Structure

Organizational structure may be another cause to explain self-other dis-congruence between leaders and followers (Dai et al, 2007; Goff, Goldring & Bickman, 2014). First, modern organizations, including schools, are in fact organizations with levels of management, structure, and divisions of labor. They put people on different organizational levels to maintain effective and functional operations. The order of the hierarchy separates people by levels, from bottom tier to executive level and top management. Messages usually flow along with the level, either from bottom to top, reporting first-hand information for decision making, or top to bottom, informing what has been decided. Like such hierarchical structures, schools are cut into smaller parts, such as departments and functions, which would expand the distance among professional teaching staff, thus increasing the gap (Brutus et al., 1999). The hierarchical arrangement causes "raters from different organizational levels [to] have varying degrees of direct perspectives on the same competencies because of the nature of their daily interactions with the ratees" (Dai et al, 2007, p. 9).

Second, people in the higher leadership positions of larger organizations may be responsible for more subordinates and are likely to have fewer interactions with their followers (Goff, Goldring & Bickman, 2014). Research supports the conclusion that school size matters (Coburn & Russell, 2008): the larger the school, the more organizational layers it will have. Leaders in higher levels of positions may be responsible for more followers and/or disconnected with followers (Goff, Goldring & Bickman, 2014). It would increase the distance between leaders and followers and impeding information flow. As a result, perceptual congruence is reduced (Goff, Goldring & Bickman, 2014). Consequently, the

perceptual discrepancy between leaders and followers may depend on organizational structure (Murphy & Cleveland, 1995). As a result, it may lower the transparency of the principals' instructional leadership behaviors for all teachers. Accordingly, school structure may be a reason for the perceptual gap in instructional leadership.

2.6.2 Instructional Leadership is Shared Responsibility

It has been proposed that organizational factors are essential in facilitating instructional leadership in a school setting (Park & Ham, 2014; Southworth, 2002). The reality is that instructional matters are important, but they are parts of principals' daily job (Cuban, 1988; Bolman & Deal, 1992; Greenfield, 1995). Principals are not omniscient or omnipotent, and they are unable to provide professional guidance for all teachers, teaching in different subjects, whenever they need it. With limited time, energy, and expertise, principals alone are not able to supply enough instructional support, curriculum coordination, and professional development for every teacher. These arguments are consistent with the literature. According to Hallinger (2013), there has long been a weakness in instructional leadership because of principals' insufficient expertise or limited time spent on school instructional matters. Consequently, it may result in poor perceptions of principals' instructional leadership by teachers. Participating in non-instructional leadership and management roles consumes principals' time and attention, which can severely limit the frequency of performing instructional leadership. As a result, fewer teachers may have opportunities to talk with their principles about their classroom practice (Goldring & Cohen-Vogel, 1999). In this line of thinking, it is not surprising that teachers cannot perceive enough instructional help and support from their principals.

Both researchers and school practitioners have gradually learned that principals alone are not able to hold the line as the sole leaders (e.g., Fullan, 2006; Hall & Hord, 2001; Gronn, 2002;

Marks & Printy, 2003; Mulford & Silins, 2003; Spillane, 2006). A growing number of researchers have realized that principals alone are not the answer to effective instructional leadership (e.g., Marks & Printy, 2003; Spillane, 2006). Consequently, the source of school leadership should not center on the principal alone but extend to more. Although scholars use different names to describe this idea in the literature, the core idea remains similar: including more people to become instructional leaders.

Principals become the leader of leaders, that is, facilitators to promote growth for teachers (Poole, 1995); teachers, given what they are good at and face every day, perform leadership together with their principals (Marks & Printy, 2003). Scholars have proposed different constructs in order to bring in instructional helpers and assistance for principals, such as teacher leadership and shared instructional leadership (e.g., Marks & Printy, 2003; Wenner & Campbell, 2016; York-Barr & Duke, 2004). Teachers are trusted with more authority for instructional decisions, professional development, curriculum coordination, and many other instruction-related issues. Those leaders who have emerged from teaching have rich teaching experience (Katzenmeyer & Moller, 2001), mature teaching skills (Fullan, 1994), knowledge in the subject they teach (Sherrill, 1999), innovation in curriculum (LeBlanc & Sheltona, 1997), a strong sense of responsibilities (Crowther et al., 2009), and even personal theories of education (Katzenmeyer & Moller, 2001). They are instructional leaders who supplement principals' eyes and hands, time and resources, head and legs to maximally meet the instructional needs of school improvement.

Despite the different concepts used, for example, shared (Marks & Printy, 2003), collaborative (Hallinger & Heck, 2010), distributed (Heck & Hallinger, 2009), or teacher leadership (Katzenmeyer & Moller, 2001), all indicate that principals are not the only instructional leaders; teachers must be included to increase school instructional capacity.

Instructional leadership is a shared responsibility that includes principals, assistant principals, curriculum leaders, and district support (Stokes, 1984). Therefore, it is inaccurate only to require effective instructional leadership behaviors of principals, when more than half of instructional leadership functions are allocated (Stokes, 1984). Following this line of logic, more instructional helpers are needed to support principals in terms of instructional leadership. The question is who can be a principal's instructional leadership helpers.

Many countries have realized that middle leaders serve critical functions in sustaining school improvement. In China, middle leaders are viewed as the bridge between principals and teachers, as executers of school regulations and policy (Bao, 2014). In South Korea, the Korean Background Report suggests that there should be more motivations for potential teachers for middle management positions (Kim et al., 2007). New Zealand has adopted reward systems to both recognize and support their school mid-level leaders (New Zealand Ministry of Education, 2007). Scholars have also argued that leadership development should be extended to middle leaders and teacher leaders (e.g., Bush & Glover, 2004). A trend in the late 1990s has been captured in the literature: research focus shifted towards middle leaders who could be accountable for high-quality teaching (Metcalfe & Russell, 1998). However, knowledge of middle leaders is insufficient even in general organization literature. Middle leaders are inadequately empirically understood (DeChurch, Hiller, Murase, Doty & Salas, 2010), especially in school settings (Gurr & Drysdale, 2013). Consequently, more research is needed to explore middle leaders' function in supporting principals in terms of instructional leadership.

2.6.3 Principals' Instructional Helpers: Middle Leaders in Chinese Schools

Middle leaders' positions are common in many countries due to hierarchical school structures. However, the roles of middle leaders range from assistant principal to department leaders. For

example, a variety of roles and a wide range of duties are found among mid-level leaders in OECD countries involved in the Improving School Leadership Project (OECD, 2008). In Portugal, mid-level school leaders are heads of specific subjects in coordinating within and across their department. In Australia, mid-level school leaders are teacher leaders who are responsible for teams, year levels, or curriculums (OECD, 2008). In order to unveil Chinese middle leaders, five types of school middle leaders are identified in this study: instructional assistant principals, subject leaders, grade leaders, school-based research leaders, and instructional directors.

Since the 1980s, assistant principals have been identified as instructional leaders (Bass, 1989; Patton, 1987; Stoke, 1984). Thirty years later, there is little doubt that assistant principals should be a critical complement to instructional leadership. In Chinese schools, there are usually two types of assistant principals: moral assistant principal and *instructional assistant principal*. The position of instructional assistant principal is designed to focus on school instructional issues (Li, 2007), working closely with other mid-level instructional leaders and with classroom teachers. An (2008) argues that instructional assistant principals must focus on instruction improvement and endeavor to acquire expertise in teaching in order to instruct teachers professionally. Although the instructional assistant principal can be fully occupied with daily duties, it is strongly suggested that they use teaching positions in the classroom as models (An, 2008).

Subject leaders play a critical role in sustaining teacher learning and professional development, and they are also responsible for taking an indispensable role for instructional leadership, in Chinese schools. Within schools, teachers are organized according to their area of teaching to form a subject research group. In Western literature, they are referred as department heads and treated as instructional leaders (Stokes, 1984; Worner & Brown, 1993).

Oris (1988) suggests that principals should delegate more instructional leadership to their department heads. In China, a series of important regulations from 1952 to 1959 clearly state the function of subject research groups as organizing teaching and research, exchanging teaching experience, and improving teaching professions in order to overall improve educational quality (Hu, 2011).

Grade leaders are the teachers who are responsible for the instructional issues of all subjects, teachers, and students within the same grade. The number of grade leaders matches the number of grades in schools. In the early stages of Chinese school development, schools were small and much of the administration was performed by subject leaders (Zhou, 2005). However, schools have been growing larger since the mid-1990s, with a more well-defined division of labor. For management reasons, teachers can no longer only be organized by subject. A system of teacher groups across the entire grade have been established (Zhou, 2005). Gao (2012) points out that teachers give instruction, receive training, and perform research within a group of teachers and students of the same grade. Grade leaders are bridges between principals and teachers; they ensure the implementation of school goals and plans (Jiang & Xu, 2014). As a result, they are said to be “little” principals (Jiang & Xu, 2014).

The Chinese Ministry of Education established the system of school research in 1954 (Lu & Shen, 2010). It encourages school teachers to research innovative teaching and problem solving. In contrast, most of the research needed for schools in Western countries is conducted at the university level. Working together with external resources and support from district and universities, *research leaders/director of research* are often regarded as the teachers of teachers (Lu, Shen & Liang, 2014), raising teachers to a higher level of thinking and researching. Their job is to encourage and inspire other teachers to be innovative in teaching in terms of research projects (Song, 2012), which is critical for teacher learning and

school capacity building (Lu, Shen & Liang, 2014). Research leaders are regarded as middle instructional leaders and "professional leaders" because they provide professional advice to principals in terms of curriculum and instruction, and they lead teachers professionally through school-based research and professional development (Song, 2012).

Instructional director/director of teaching and discipline is the last position of middle leaders identified in this study. As the name of the position indicates, they are responsible for teaching and learning, particularly student learning. Effective instructional leaders function as a link between the top and front line (Kuang, 2003). They are always seen from class to class, checking whether classes are in good order, for example, beginning on time (Wen, 2003). Instructional directors work as a "video camera" for principals to detect malpractice and divergence from instructional requirements. They correct and reinforce according to school goals and visions. Their major duties are to 1) participate in school decision making; 2) supervise instructional issues; 3) organize and direct school-based research activities; 4) coordinate different departments, and 5) monitor teaching and learning (Jing, 2009). The discussion focus of the next paragraphs is to build theoretical arguments about middle leaders' effects on self-other raring dis(agreement) between principals and teachers.

2.6.4 Distributing Instructional Leadership to Middle Leaders

Modern schools are inevitably organizations with hierarchical layers due to the nature of the departmental/subject system. Until now, there has been little evidence that such an organizational arrangement is fading away. As mentioned, a multi-level organizational structure impedes the perceptual congruence between principals and teachers; following this line of argument, it is a great challenge for principals to be fully perceived by teachers. Previous explanations of the self-and-other rating gap provide few solutions to the problem because they mostly focus on the perspective of self. This approach provides little hope for

improvement because trait is characteristics of individuals, which is almost impossible to be changed, for example, principals' age or gender. Research into the issue may reach a dead end if continued in this direction. Another approach should be explored.

As discussed in the previous section, aside from cultural factors, organizational structure is a possible way to explain the perceptual (dis)agreement between principals and teachers; the two parties are separated by an additional layer of hierarchy, the middle leaders, who are responsible for subject departments and other functions relating to teaching and learning. What they do in terms of this additional organizational layer between principals and teachers is worth exploring. Inspired by this motivation, a theoretical connection that school middle leaders have the hypothetical influence on determining the rating difference between principals and teachers is possible.

Literature has documented functions that performed by middle leaders between principals and teachers. Standing hierarchically in the middle of a school naturally makes middle leaders a bridge between principals and teachers (Brown & Rutherford, 1999) and executors for school decisions and policy (Ding, 2011). As "buffer and bridge," middle leaders upload information to the higher hierarchical structure and download external requirements to their team (Brown & Rutherford, 1999), connecting principals and teachers (Brown, Boyle, & Noyle, 2000) and interpreting a school's vision and mission created by senior leaders (Glover et al., 1998). Middle leaders are essential school staff to implement principals' planning for schools, such as instruction and curriculum (White, 2000). They facilitate external demands as practical and acceptable (Bennett, Newton, Wise, Woods, & Economou, 2003). The role and position of middle leaders gives them access to perceive principals' intentions and authority to act on behalf of principals in front of classroom teachers. Therefore, a middle leader is a leading factor in influencing teachers (Heng & Marsh, 2009). Despites above

discussed arguments in the literature, established on distributed leadership theory, the following section elaborates in detail that instructional leadership function can be distributed to middle leaders.

Middle leaders can be distributed with instructional leadership responsibilities. Distributed leadership theorizes that everyone in a school can be a leader and exert leadership influence (Gronn, 2000). It theoretically explains why schools need more leaders and principals need more helpers. Distributed leadership has gained popularity in many countries, such as the United States and the United Kingdom, in both academic studies and practice (Harris, 2009), and in China (Feng, 2012, Fang, 2005; Zheng & Yin, 2015). For example, a growing number of schools in America have been experimenting with distributed leadership in practice, and districts also encourage schools to do so (Harris, 2009). The influence of distributed leadership lies in its power to improve school performance when leadership is distributed and more teachers are included (Hopkins & Jackson, 2003). Fundamentally, it allows leadership functions and obligations to be transferred from principals to others.

According to distributed leadership theory, the functions of instructional leadership can be delegated from principals to middle leaders. In this way, middle leaders can also perform instructional leadership through interactions with teachers in situations when principals are unable to fulfil their instructional responsibilities. For example, a situation might arise in which the principal does not have enough time or lacks specific professional expertise in a subject. Middle leaders' time and instructional knowledge are able to supplement the principals' resources in order to achieve the school's vision and instructional goals. Consequently, principals do not have to perform all the functions of instructional leadership personally in order to exert instructional influence and manage instructional programs, but through middle leaders' interactions with teachers. This extends principals' focus of

instructional issues yet it raises another question.

Distributed leadership, as in the arguments from the previous paragraphs, can explain that middle leaders are able to perform instructional leadership on behalf of principals. They may fill the vacancy when principals are unable to perform responsibilities as instructional leaders. Through instructional leadership functions distribution, it can extend principals time and expertise, allowing stronger focus on school instructional issues. Following this line of argument, the more instructional leadership middle leaders perform, the more instructional leadership responsibility they take on behalf of their principals, and the less principals may have to do. As a result, principals may have more time to focus on other areas of principalship. However, teachers, on the other hand, may have fewer opportunities observing their principals as instructional leaders but more chances interacting with middle instructional leaders. Through this theoretical assumption, it is highly possible that the perceptual gap between principals and teachers occurs when instructional leadership functions are distributed to middle instructional leaders, the side effect of instructional leadership distribution: The more instructional leadership performed by middle instructional leaders, the larger the self-other rating disagreement between principals and teachers. In terms of the third hypothesis, it is proposed as below (see figure 3 for the conceptual framework). Moreover, given the consideration that cultural factors have been established as a potential influence on principal-teacher perceptual gaps, they should also be included to examine the effects of middle instructional leaders.

Hypothesis 3: Middle leaders' instructional leadership can positively impact on the perceptual differences between principals and teachers concerning principal instructional leadership.

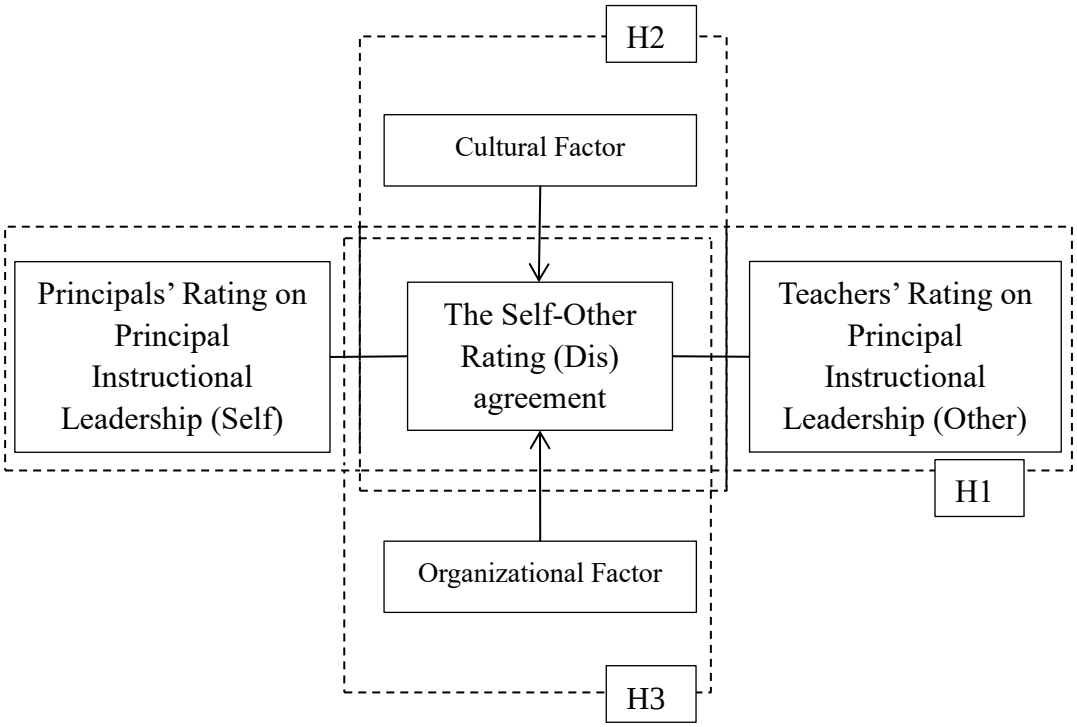

Figure 3. Conceptual framework

Chapter 3: Research Design and Methodology

The purpose of this chapter is to elaborate the two phases of the research design in order to respond to the proposed research questions and problems. It starts with a description of the overall design of the research. A figure illustrating how this research was conducted is presented in this section. Then the chapter moves to the first phase of the study. With the purpose of preparing the instruments for the main study, the first phase starts with the session of the pilot interviews and ends with the analytical strategy. In addition to the interviews, this phase includes a small sample for quantitative analysis. Adjustments were made to the instrument based on results of the first phase. Then this chapter moves on to the method of conducting the second phase, which focuses on the procedures of conducting the main study and analytical methods. The last section of this chapter sets out the ethical considerations.

3.1 The Research Design

The methodology adopted in this study addresses the research purposes presented in 1.4. Briefly to flash back, the purposes of this study are threefold: 1) to investigate patterns of instructional leadership performances of Chinese principals, and the potential perceptual gaps between principals' self-rating and teachers' evaluations on principal instructional leadership; 2) to examine the effect of power distance on the perceptual gap; and 3) to test whether the functions enacted by middle instructional leaders affect principal-teachers' rating disparity. Because the nature of the research purposes is to adapt an established instrument and test several specifically developed hypotheses, the employment of a quantitative approach is deemed appropriate (Creswell, 2014). Using a quantitative method to collect data and

conduct analyses was also following the strong tradition of using such a method in the area of instructional leadership (Hallinger, 2010; Hallinger, Wang & Chen, 2013).

The research design adopted in this study consists of two phases: the first is instrument preparation and validation, and the second is hypotheses testing. Procedures of each phase are unpacked in the following paragraphs.

As illustrated in figure 4, the first phase consists of the pilot tests which contain two steps. The first step was to verify Hallinger's and Li's model of instructional leadership via pilot interviews with school principals. The interviews were semi-structured and semi-formal and most lasted for half an hour with each school principal. Using data collected from the interviews, with the purpose of refining the research instrument, especially the expressions of translation, as a result, several adjustments were made. Based on findings of the first step, the second step was to distribute the refined surveys to those schools which accepted the interview invitations. However, unlike the first step, which only included principals, the second step of the pilot test surveyed three levels of school personnel, principals, school middle leaders, and classroom teachers. The main purpose of this step was to determine whether the survey is both reliable and valid through confirmatory factor analysis, and Cronbach's alpha. Based on the results of this step, final modifications were made to the survey.

After concluding the first phase, the research instrument proved to be both reliable and valid, and ready to be distributed to conduct the main study. The second phase consists of the main study which contains five steps. The first step of the main study was to distribute the final

revised survey to the targeted research subjects, who are school principals, middle leaders, and teachers. They were given different sets of surveys but which had identical information. Middle instructional leaders conducted self-assessment on their own practices of instructional leadership, principals were invited to do self-rating on their own instructional leadership practice, and teachers were instructed to evaluate principals' performance on instructional leadership. The second step was data analysis. Based on data collected from the first step in phase two, reliability and validity were carried out by CFA, predictive validity, and Crobach's alpha. In addition, descriptive analyses were implemented to reflect the characteristics of the participants. Steps three to five used different statistical tests to confirm the hypothetical relationships assumed in the hypotheses.

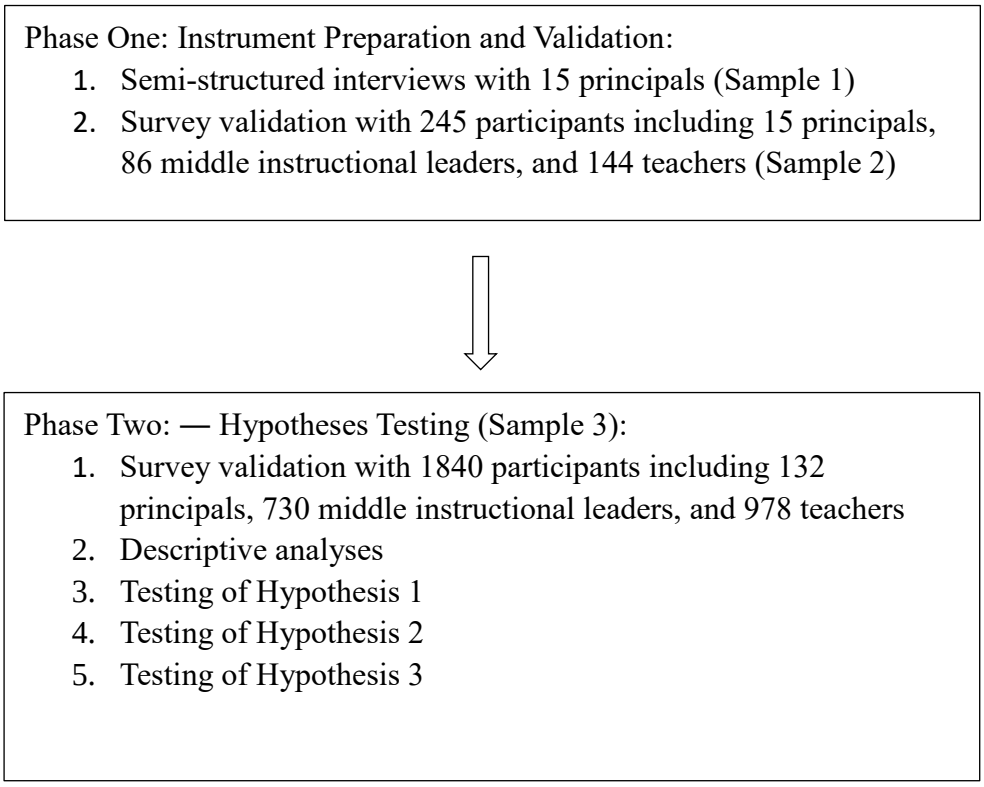

Figure 4. Procedures in Conducting the Research Design

3.2 Phase One: Instrument Preparation and Validation

The purpose of phase one in terms of research design was to prepare the survey ready for distribution. It contained two steps: the first one is qualitative interviews with principals and the second one is quantitative approaches that collect principals, middle instructional leaders, and teachers' perception via PIMRS. This procedure is a must because PIMRS used in this study was not originally developed in China. Although it has been internationally used over 30 years, the fact that the instrument was developed a long time ago may undermine its construct validity. In addition, the validation process is vital because determining an adequate measurement is a great challenge and it is crucial that measures on the survey are able to represent the abstract construct (Hinkin, 1995, 1998). Therefore, this study needed to prepare PIMRS for the Chinese educational context. In order to achieve this purpose, the first phase of the research design functioned as a validation test. Modifications to the instrument are possible.

3.2.1 PIMRS Translation

The purpose of this process was to transform the original instrument, which is the source instrument, to the one in the proposed context, which is the target instrument. The focus of the translation should be cultural and conceptual instead of strictly literal or linguistically similar (WHO, 2017). However, the differences between English and Mandarin Chinese bring problems to the process of instrument translation (Wang, Lee & Fetzer, 2006), so a method that ensures the cultural and conceptual essence of the original instrument can travel to the target one should be adopted. This study adopted most of the procedures recommended

by the World Health Organization (WHO) on instrument translation.

Why use standards of WHO? The issue of translation is urgent and imperative in the health industry because of the global threat of diseases spreading. Latest medical findings have to be distributed worldwide fast and accurately given that English is the dominant language in the academic world, many English written medical publications lead developments. These need to be translated to other languages. In order to achieve the highest level of accuracy, WHO published recommendations for conducting instrument translation. Consequently this study chooses to follow the recommended steps by the WHO in order to translate PIMRS from English to Mandarin Chinese.

The method of instrument translation introduced by the WHO has four steps, namely forward translation, expert panel back-translation, pre-testing and cognitive interviewing, and final version. For this thesis, I divided the second step into two: back-translation and expert panel review. Pre-testing and cognitive interviewing had already been performed in the pilot tests. Based on data analysis, final decisions were made to the instrument. The procedure of instrument translation carried out is shown in Figure 5.

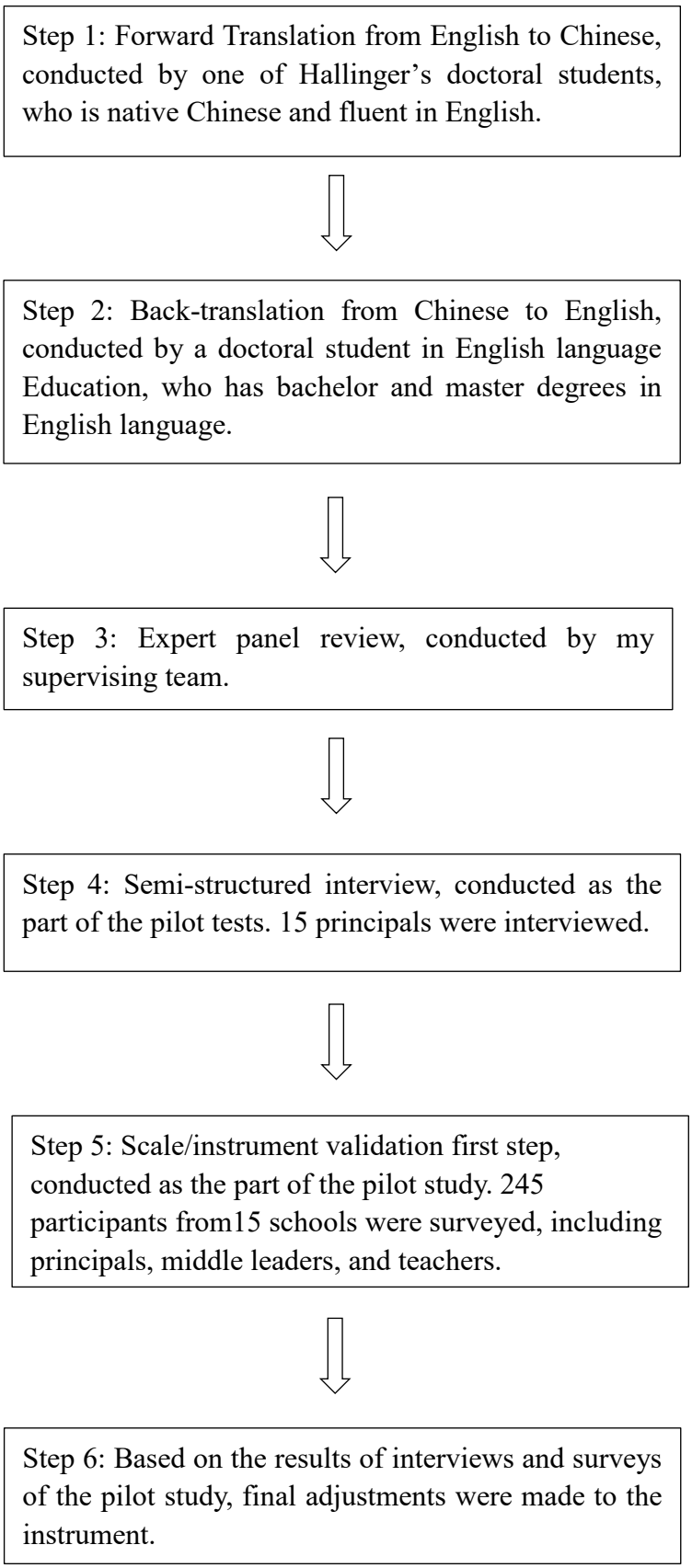

Figure 5. Procedures of PIMRS Translation from English to Chinese

The first step was the forward translation. It is a process whereby the original English instrument is translated to Mandarin Chinese. This was done by one of the Hallinger's doctoral students, who is not only fluent in both Chinese and English, and more importantly, studies instructional leadership as her research focus. As the translator, she was instructed that the Chinese translation should emphasize the conceptual meanings rather than literal translations.

The second step was the back-translation. It is a process that translates the instrument from the target instrument back to the original language. It is the most widely used method for conceptual equivalence between the source and target instrument (Yu, Lee, & Woo, 2004). According to the guideline by the WHO (2017) on back translation, a second and independent translator, who preferably speaks English as mother tongue and has no knowledge of the instrument, is the best choice to translate the work of the first translator back to English. However, the ideal person was not found. Instead, a Chinese doctoral student majored in language education with extensive overseas study and work experience agreed to conduct the back translation. This second translator had no relevant knowledge on school leadership and was not acquainted with the first translator. Back translation is often adopted to transform the English version of PIMRS into other languages, such as Spanish (Fromm, Hallinger, Volante & Wang, 2016) or Turkish (Bellibas, Bulut, Hallinger & Wang, 2016).

After the two translators had done their work, the results of forward and back translations were presented to the researcher's supervising team. The purpose of this step was to resolve inadequate language expressions and conceptual discrepancies. The completed Chinese version of PIMRS was produced as the result of this step. Before presenting it to actual practice, additional adaptations were made, which is discussed in the next section.

3.2.2 First Step of Phase One: Semi-structured interview

The purpose of conducting semi-structured interviews with principals is to further determine the conceptual framework of PIMRS and item readability. In total, 15 principals participated the semi-structured interviews. It is worth noting that repetitive themes emerged starting from the third interviewee, and no more new themes emerged after coding ten cases. Therefore, it is confident that a sample of 15 principals was enough to satisfy the saturation principle. Based on principals' feedbacks, they generally acknowledged PIMRS as a comprehensive framework for instructional leadership and were able to relate most of their instructional leadership practice within the theoretical construct. Several changes on wording and sentence structures were made to the PIMRS. Briefly, through content analysis of the interview, the conceptual framework of PIMRS was confirmed by Chinese principals with several minor adjustments on language expression in terms of translations. In addition to the purpose of instrument validation, one additional item which relates to empowering middle leaders was added to the instruments, and the types of middle instructional leaders were confirmed.

3.2.2.1 Participants

All research samples of the pilot study, including interviewees and survey participants, are from Henan, a central province of China. Sampling in this province of China is due to availability and convenience; however, it is meaningful for research and has practical value. As discussed before, Henan is one of the first batches of experimental cities and provinces for the 2001 curriculum reform, a strong economy entity, raking the fifth of China while low average economic income, and responsible for large numbers of the student. Detailed descriptions and numbers were presented in the section 1.2.3 of chapter 1. Based on above concerns, situations in Henan can reflect China to a large extent. Since this province of China is relatively unfamiliar to the literature, some brief background information is provided in the

following paragraph.

In opposite to being overlooked in the contemporary age, Henan is the cradle of Chinese civilization in terms of the political, economic and cultural center, functioning as the capital of China for 20 dynasties in history (Office of Henan Province Chronicles, 2011). Geographically, the province locates in the middle part of China, along the middle reaches of the Yellow River. Culturally, its root to Chinese culture can still be found in names of Chinese people today. 171 out of 300 most seen Chinese surnames are originated from Henan, and tens of thousands of oversea Chinese come back to Henan to seeking ancestry roots (Office of Henan Province Chronicles, 2011). Moreover, the historical glory of Henan is internationally acknowledged. For example, United Nations Educational, Scientific and Cultural Organization (UNESCO, 2017) have included three cultural heritages within Henan border on the world heritage list. A place like Henan with rich cultural legacy and robust economic vitality should not be overlooked in educational academic studies.

Interviewees of the first phase were from the capital city of Henan. The purpose of sampling is to recruit interview participants. I went to the local district educational bureau for support. The vice-director of the educational bureau was willing to help not only because of my social connections, but more importantly; she was once a teacher and wanted to make a contribution to the academic community. Although the district was chosen due to convenience, the school selections were random. There are 32 public primary and middle schools in the district, and I randomly picked 16 of them, which is 50% of the entire school numbers. The vice-director gave me each principal's contacts, which was the last involvement of the educational bureau. I was allowed to tell each principal where I obtained their contact information in order to avoid the situation that I was a fraudster since telecommunication fraud is very common in China. Each principal was reached by text messages, through which appointments for

interviews were made. 15 out of 16 school principals accepted my invitation. In total, 15 school principals participated in the interviews and in surveys later.

3.2.2.2 Data Collection Procedures

Fifteen semi-structured and semi-formal interviews were conducted with each principal in terms of their perception and their behaviors of principal leadership, representing 15 schools. I made appointments with each principal and visited each school for the interviews. Guided by the conceptual framework of PIMRS and the 10 added item questions, the purpose of the interview was to validate the instrument in terms of rational and language expressions, which mainly focused on the appropriateness and feasibility of the survey. Each interview session lasted about 40 minutes in each principal's office. Every principal voluntarily offered a brief introduction to his or her school, taking about 10 to 15 minutes. The actual interview in terms of question and answer was about 25 to 30 minutes for all 15 interviewees. In order to focus on my research purpose, the survey of PIMRS was presented to each principal for review. After they examined the survey based on their knowledge and past experience, I began my questions. All principals clearly expressed their hope that I better not record the interview otherwise they would have to answer my question in an "official way". Since the duration of each interview was short, I was able to record the key points in hand writing.

3.2.2.3 Analytical Strategy: Content Analysis

There are many ways to analyze qualitative data (Elo & Kyngas, 2008). In the case of this study in terms of the purpose of the interview, the analytical strategy of content analysis was adopted because it allows the researcher to extract qualitative content in terms of categories. According to Burns and Grove's (2005) suggestion, deductive content analysis should be used if the purpose is to test prior theories or models moving from a general to a specific context. In this respect, earlier knowledge was the target for the test by content. In order to

perform deductive content analysis, a categorization of targeted concepts or theories can be established to guide the analyzing process (Kyngas & Vanhanen 1999). In this case, the conceptual framework of PIMRS (see table 1 in section 2.3.2) serviced this function, which was examined by the interview data. Due to the sensitivity about audio recording during interviews, key points could only be documented by hand writing; these were treated as the content for analysis. Because the duration of each interview was short, principals' answers were very straightforward, so the technique of coding was not used. Analysis was conducted based on individual cases. Briefly, all the recorded key points from 15 interviewees found their position on the conceptual framework of PIMRS.

3.2.3 Second Step of Phase One: Instrument Validation

The purpose of the second step of phase one was to examine the reliability and validity of the revised PIMRS. The same 15 principals and their schools contributed to this sample. In total, 245 participants consisting of 15 principals, 86 middle instructional leaders, and 144 teachers were surveyed. Statistical tests, such as Cronbach's alpha reliability tests and confirmatory factor analysis were performed to determine the issues of reliability and validity. Final modifications were made to the instrument before progress to the second phase of research.

3.2.3.1 Participants

Survey participants were recruited from Henan province. In order to avoid repeating the same information, detailed descriptions of the research site can be referred in section 1.2.3 and section 3.2.2.1. The targeted sample is three levels from the school hierarchy, respectively, principals, middle instructional leaders, and teachers. Potential survey participants are from the interviewees' schools: After interviews with the principals, I asked each of them whether I could come back to collect their perceptions via the modified survey. All 15 principals agreed

and I went to fifteen school sites in person again to distribute the modified questionnaires. Although this sample is chosen due to convenience, middle instructional leaders and teachers were randomly selected based on their time availability and willingness. In total, 15 principals, 86 middle leaders, and 144 teachers from 15 schools were surveyed and the data were analyzed. The final version of surveys for the main study was based on results of these 245 participants.

3.2.3.2 Data Collection Procedures

The data were collected personally by visiting each 15 school again and I set up appointment again with each principal to distribute the surveys. All participants from each school in terms of middle instructional leaders and teachers were invited. The following descriptions are almost the case for all 15 schools. Shortly before I arrived, qualified participants had been gathered in a meet room. Explanations of the purpose of my study and debriefing presentations were given to each school. Before distributing the surveys, I asked all non-survey participants to leave the room, including myself. Principals were asked to fill out their surveys in another room, most of the cases, their offices. Standing by the entrance of the room, I directly collected the data when participants completed the survey and left the room. This was the data collection procedure for all 15 schools.

3.2.3.3 Instrument

The instrument adopted in this study was the Principal Instructional Management Rating Scale (PIMRS), which has been widely used in researching school leadership and relevant factors over the past 30 years (Hallinger, 2011; Hallinger, 2008; Lee, Hallinger, Walker, 2012; Neumerski, 2012) in more than 200 studies (Hallinger, 2010; Halling & Wang, 2015) from different countries across nations and cultures. The scale has been consistently proved to be

both reliable and valid (Hallinger, Wang & Chen, 2013). Each item represents a principals' behavior associated with an exact leadership function. The frequency of such behavior is measured on a 5 point Likert-type scale from almost never to almost always. It has two paired versions: principal version (50 items) and teacher version (50 items for original and 22 items for short version). Please refer to 2.3.2 and 2.3.3 for the detailed description of the instruments.

This study adopted the Chinese adaptive version of PIMRS, since social norms and cultural impact may shape principals' instructional leadership practice in different countries (Bellibas, Bulut, Hallinger, & Wang, 2016). By just adopting the western scale, the validity may be threatened. In order to better capture Chinese characteristics of instructional leadership, ten new items in association with Chinese school uniqueness were added to PIMRS, based on Li's work (2015) and pilot interviews. Three survey instruments were distributed to principals, middle instructional leaders, and teachers. Principals were given PIMRS of 50 items, with 10 extra items of Chinese school characteristics. Mid-level instructional leaders were asked to complete MIMRS, including 28 items which based on the teacher short form and additional 10 items of Chinese school uniqueness, though four items had to be deleted because they measured instructional leadership behaviors that can only be performed by principals. MIMRS measured to what extent they take up instructional functions on behalf of their principals in order to enhance teachers' classroom practice. Teachers were invited to put down their opinions of their principals on PIMRS teacher short version (32 items, including 10 additional items of Chinese characteristics). Please refer to 2.3.3 for more detailed information.

3.2.3.4 Analytical strategy

The purpose of the first phase was to determine the reliability and validity of the instrument.

The analytical strategy used was statistical, specifically, through Crobach's alpha reliability assessment in SPSS (Version 21); and confirmatory factor analysis in Mplus (Version 7). Final modifications were to be made to the survey based on the results of the aforementioned tests. The detailed results of this step are presented in chapter four, results of instrument validation. The purpose of validation analysis is to further find out which one better fits and reflects Chinese educational context, PIMRS alone or PIMRS plus 10 additional questions (Li's qualitative findings). This phase indicates which instruments should be used for the next step of analysis. The results can lead to the conclusion that the research instrument is proved to be both reliable and valid. Consequently, the revised PIMRS was deemed ready to be distributed to conduct the second phase of the study. The following section provides descriptions of the research method of the second phase.

3.3 Second Phase: Hypotheses Testing

The purpose of the second phase is to answer the research questions and test the proposed hypotheses. The finalized survey of PIMRS was distributed to the research samples in this phase. It is also the main component of this research. The second phase of research was conducted in Luoyang city, Henan province, which is the same province as the sample in phase 1. Generally, the method used in the second phase was similar to the second step of phase one: the cross-sectional design was implemented to dissect the perception discrepancy of Chinese principals' instructional leadership with the purpose of assessing whether power distance and the instructional leadership of middle leaders impact the perception disparity between principals and teachers. Data were collected from three levels of school personnel, namely principals, middle instructional leaders, and teachers of the compulsory schooling level at both primary and junior secondary schools. Confirmatory factor analysis and Cronbach's alpha were once again performed to verify whether the instrument was both reliable and valid. Next, paired sample t-tests and Pearson correlations were conducted to

answer the hypotheses.

Having establishing the two phases research method as the methodological framework to inquire into the proposed research question and hypotheses, the next step is to describe the particulars of each step of the second phase in detail.

3.3.1 Participants

This study successfully recruited a total of 1,840 participants of 132 schools from a central province in China to fill out the surveys. Detailed descriptions of the research location can be referred in section 1.2.3 and section 3.2.2.1. Being the second largest city in Henan province, Luoyang local educational bureaus offered indispensable assistance for the researcher to approach targeted research samples. Specifically, in total, 156 bundles of envelopes were received, representing a response rate of 78%. However, 24 schools had to be removed from data analysis because of several problems: missing one party (either surveys of principal or teachers are missing), more than 10% missing data, and repeating answers. Consequently, 132 schools remained as qualified for further data analyses. These contained 132 principals, 730 middle instructional leaders, and 978 teachers. On average, each principal was corresponding with about 7.4 teachers.

All quantitative study has to balance the requirement between sample size and feasibility. Fraenkel, Wallace and Hyun (1993) suggest, “A sample of at least 50 is deemed necessary to establish the existence of a relationship” (p. 109). Their statement was supported by Hox and Maas (2001), who proposed a group of samples (nested schools) should equal or greater than 50, and the number of outcome participants (teachers) should be equal or be greater than 5. Therefore, the sample size of participants should be no smaller than fifty schools and 250 teachers. Data of schools were treated as the unit of analysis. Reponses of principals, middle leaders and teachers were matched through codes identifiable by the researcher only.

3.3.2 Data Collection Procedures

There are 15 districts under the direct management of Luoyang. In total, the city is charge of 1,801 compulsory schools which includes 1,446 primary schools and 355 junior middle schools. The sample of this study has recruited 132 schools, representing about 7.4% of the whole school population in Luoyang city. The average number of the primary schools for the 15 districts is 96.4; while for junior secondary schools, the average number is 23.67.The variances of school numbers among districts are quite large. Among the 15 districts, the one with the largest quantity has 297 primary schools while the one with the smallest has only 9 primary schools. A similarly situation appear on the number of junior middle schools. The district with the largest quantity has 53 junior middle schools while the one with the smallest has only 3. At the beginning of every year, all 15 district school representatives, usually principals or vice-principals gather at the Luoyang city educational bureau for annual meetings. With permission to attend such meetings, I was provided opportunities to approach school delegates to promote the current research. I explained to school representatives that principals and teachers were invited to participate in the survey study. Questionnaires for each principal and for teachers in the same school were put in a bundle in envelopes to which an invitation letter was stickered as the cover, briefly explaining the research purpose. 200 envelopes containing these bundles were prepared and distributed to school representatives who agreed to participate. All sealed envelopes were directly mailed back to the researcher using pre-addressed, receiver paid envelopes. Although sampling in Luoyang was due to convenience, school selections and principals and teachers' participation was random and based on their free will.

3.3.3 Instruments

The instruments of PIMRS sets are the same as the pilot study. Only minor word expressions

were adjusted to be more accurate. The Chinese PIMRS survey instrument consisted of 32 items to assess principals' and teachers' perceptions of principal instructional leadership behaviors. I examined the set of 32 survey items from the principal survey that matched the teacher short form of the PIMRS. The short version was proved as reliable and valid as the full version (Hallinger & Wang, 2015). The only difference worth mentioning is that the full version can be calculated at three levels, overall, dimensional, and functional, while data collected from the teacher short form are not able to perform tests on functional levels.

Power Distance of principals and teachers was measured by a six-item scale developed by Dorfman and Howell (1988) on a 5-point Likert scale. Factors related to principals are usually treated as school level factors, a procedure more often adopted in building relationships with other variables. Compared with that, influences of teachers are less tested. In order to increase our understanding of teachers' level factors, this paper includes PD rated by teachers. Moreover, since the research purpose of this study is to test the perceptual gap between principals and teachers, it was reasonable to include PD from both parties in the comparisons. The work of Dorfman and Howell (1988) has been applied to many studies in the Chinese context by both Chinese and western scholars, producing reliable and valid results (Farh, Hackett & Liang, 2007).

3.3.4 Analytical Strategy

The following data analysis and results presentations are arranged into four sections, namely instrument validation, descriptive analysis including cross tab, and paired sample t-test, and correlation analysis. First, as a recommended standard procedure, Hallinger and his colleagues suggested all researchers who apply PIMRS should perform validation analysis although PIMRS has been proved to be both reliable and valid (Hallinger, Wang & Chen, 2013). Reliability assessment was tested by Cronbach' α in SPSS (Version 21); construct

validity was conducted by Confirmatory Factor Analysis in Mplus (Version 7), and predictive validity by SPSS (Version 21).

Based on instrument validation tests, this study then tested the hypotheses. Descriptive analysis was performed to report patterns and characteristics of Chinese principal instructional leadership practice. Cross tab analyses were adopted in order to determine general patterns of Chinese principals' instructional leadership practice when compared with their personal traits, such as age and gender. The results of cross tab analyses will contribute to the literature with knowledge of how Chinese principals perform instructional leadership. Next, the first hypothesis in terms of examining the perception discrepancy of principals and teachers was examined by data analysis. Scores of principals' self-rating and teachers' evaluation were compared to see whether a perceptual gap exists or not. The second hypothesis was intended to discover whether power distance moderates the perception disparity between principals and teachers on principal instructional leadership practice.

The last analysis was correlation analysis with a focus on testing the third hypothesis. As reviewed and discussed in chapter 2, school middle leaders have been theoretically assumed to function between principals and teachers in terms of extending and enhancing the influence of principal instructional leadership in situations when principals are unable to fulfill all functions themselves. Whereas, considering more instructional leadership functions are distributed to middle leaders, principals may not have to perform all instructional leadership responsibilities personally. From these arguments, the more middle leaders perform instructional leadership, the less principals may perform, and the higher possibilities that teachers may observe their middle leaders' instructional leadership practices. Several correlation tests were performed to test the hypothesized relationships. The tests were conducted at dimensional levels and an overall level. In addition, considering that cultural

factors may influence the relationship, two partial correlations were performed separately with controlled principals' and teachers' PD, in order to examine whether it plays a role in the relationship between middle instructional leaders' behaviors and perceptual differences of principal instructional leadership held by principals and teachers.

3.4 Ethical Considerations

In addition to the procedures of collecting data, this study also needed to pay attention to research ethics, given the fact that the subjects involved in this research are human beings. The first issue to be concerned with is confidentiality. Personal information was not collected and data gathered from the survey will only be used for academic purposes. I explained clearly that the study was designed to assist personal development only and it was not related to their official performance appraisals. Such information was added to the information sheets given to each participant. Moreover, all completed surveys were mailed directly to me via pre-addressed, receiver paid mail. This assures that I am the only person to access the data.

The second ethical consideration is in regard to the free will of participation. Due to the need for a large amount of samples and limited time, the researcher went to the local education bureau to seek help and permission to distribute the questionnaires in their meetings. The method proved to be effective and efficient. However, it may have left an impression to potential participants that they must participate since they received an invitation from the government. Again, I explained and emphasized to principals that their participation was to be based on their own willingness. This also applied to teachers. Such information was included in the invitation letter which was attached to the survey envelopes.

Third, no monetary compensation was provided to incentivize potential participants. Instead, they were informed that their participation would not only support my personal development

but more importantly, contribute to the improvement of theoretical understanding on instructional leadership. In the circumstances, it is highly unlikely that research participants would be harmed. Participation was anonymous, and once completed, surveys were emailed directly to me. Moreover, no report has been found that filling out PIMRS and PD scales would harm participants.

Chapter 4: Results of Data Analysis: Instrument Validation

This chapter mainly presents the data analysis and results of the PIMRS instrument preparation and validation, which are the first phase of the result section. As a recommended standard procedure, Hallinger and his colleagues suggested all researchers who apply PIMRS should perform validation analysis even though PIMRS has been proved to be both reliable and valid (Hallinger, Wang & Chen, 2013). In the first phase, fifteen pilot interviews were conducted for instrument validation purposes. Based on the results of interview data, the instrument was further examined by quantitative methods. Specifically, reliability assessment was tested by Cronbach's alpha by SPSS (Version 21); construct validity was conducted by Confirmatory Factor Analysis in Mplus (Version 7). The purpose of scale validation is to find out which measurement fits better and which represents Chinese educational context best, PIMRS alone or revised PIMRS with 10 additional items (from Li's qualitative findings). This step is decisive to determine which instruments to use for data collection in the second phase.

4.1 Semi-structured Interview

4.1.1 Basic Information of Interviewees

Since the Chinese version of modified PIMRS in this study is freshly translated, it is essential for it to undergo a pilot test before distribution to the large amount of schools in order to collect data. To achieve this goal, semi-structured interviews were adopted for the first step of the pilot test. Detailed descriptions of the interviews were presented in chapter 3. This section mainly focuses on the results of the interviews. In total, 15 principals accepted my interview invitations. They varied in age and worked in schools of different sizes, however, all of them shared one common characteristic: they all grew to become principals after having been teachers with extensive teaching experience (see table 5). In fact, having rich experience as a

teacher is a national requirement of becoming a principal. Moreover, more than half of the interviewees (10) reported more than 16 years of teaching experience. Although they all had abundant experience as teachers, six of them were actually novice principals, with only 2-4 years of experience as principals. The results further indicate that being a mature teacher is a strong prerequisite for principal selection. Additionally, the number of female principals was far more than the number of male principals.

Table 5
Principals' basic information

No.	School size	Sex	Age	Years of being principal	Years of Teaching experience
1	>2000	Female	46-55	5-9	>16
2	>2000	Female	46-55	10-15	10-15
3	1001-2000	Female	46-55	2-4	>16
4	1001-2000	Female	46-55	5-9	>16
5	501-1000	Female	46-55	2-4	>16
6	1001-2000	Female	36-45	5-9	5-9
7	>2000	Female	36-45	10-15	>16
8	1001-2000	Female	46-55	10-15	>16
9	1001-2000	Male	36-45	2-4	10-15
10	1001-2000	Female	36-45	2-4	>16
11	1001-2000	Male	46-55	10-15	10-15
12	>2000	Male	36-45	2-4	>16
13	>2000	Male	46-55	10-15	5-9
14	1001-2000	Male	46-55	2-4	>16
15	1001-2000	Male	36-45	5-9	>16

4.1.2 Interview Data Analysis

The analytical strategy adopted to examine the interview data was deductive content analysis. Detailed descriptions of this method were presented in the last chapter, 3.2.2.3. The conceptual framework of PIMRS in terms of instructional leadership guided the categorization process in the analysis. In regards to the translation and readability of the instrument, all the interviewees gave me valuable insights and critiques of some items. In addition to reviewing the survey, they also answered my questions regarding their

instructional leadership practice. One interesting phenomenon was that all the interviewees gave brief introductions of the status quo of their school and their philosophy of education and school leadership. All school principals agreed that leading instruction and student learning is one of their core responsibilities in their concept of education.

The following quotations are presented to support the validation of the dimension of defining school missions within PIMRS. To begin with, one principal described the school mission as 'happy learning and happy life'. Under this educational philosophy, the principal (school code 4507) told me that "we actually re-define our school mission every year under this idea because we want our school to be special." Moreover, all 15 principals put forward a similar idea that the school mission should focus on student learning. Under such educational philosophy, their leadership practice naturally focused on teaching and learning. For example, the principal (school code 4510) responsible for a primary school which nurtured Liu Yang, the first female astronaut of China, said "we hope our student can have multiple learning opportunities to become what they want to be in the future, and that requires our teachers to change their instruction to meet such needs. Such belief and practice will help us to cultivate more Liu Yang". The two examples provide empirical evidence that Chinese principals engage in school mission building. Therefore, the dimension of defining the school mission, which is the first dimension of the PIMRS was validated. The first dimension and its respective measurement items could remain for the next stage of instrument validation.

Interview data also validated items from PIMRS and Li's framework. For example, the same quotation, "we actually re-define …to be special" from the last paragraph supported the item 'develop school uniqueness and plan' of Li's (2015) framework, and the item 'develop a focused set of annual school-wide goals' was confirmed from the original framework of PIMRS.

The second dimension of Hallinger's instructional leadership model concerns managing the instructional program. All principals claimed that they were coordinators in all the teaching and learning activities within their schools. One principal (school code 4503) said "I must emphasize our school distinguishing feature consistently during meetings to make teachers understand why we need to do this. For example, the football curriculum is our speciality. But we have only one professional coach, we definitely need other teachers to help. Therefore, I need to have all the teachers understand why they need to help out even though they are Chinese teachers, English teachers, or Math teachers."

Furthermore, principals took on the task of monitoring instructional outcomes. This was partially evidenced by their office settings: there were large piles of students work with teachers' comments on almost every principal's desk and bookshelves. When asked, they told me that they were students' growth books, which were filled in by three parties, students, parents, and teachers, and they personally examined these books at the end of each semester. One principal (school code 4503) said "I may only be able to review a small number of these works but it is an effective way to monitor whether teachers and students are working towards our school goals because they do not know which one I am going to see so they have to prepare well". The two quotations provide evidence that principals were making efforts in managing the instructional programs in terms of the second dimension of PIMRS. As a result, the dimension and measurement items within this dimension can be kept for the next stage of instrument validation.

In addition to confirmation of the dimension, the above presented quotations also provide examples of item validation. For instance, the item from the original PIMRS 'using tests and other performance measures to assess progress toward school goals' was validated. The second quotation "I may only… have to prepare well" provides evidence that principals adopt

evaluations to assess teaching and learning outcomes. The first quotation “I must emphasize…English teacher, or Math teachers” clearly supports the item ‘develop school-based curriculum around school uniqueness’ as in Li’s (2015) framework.

The third dimension of PIMRS concerns developing the school learning climate program. All principals told me that they focused on teachers’ growth and self-improvement through learning. One young principal (school code 4515) told me that “the society is now developing so fast that it is impossible to keep up if you do not study. So I require all teachers in my school must spare certain time to study and research together. I set every Friday afternoon as the scheduled time for all teachers to share their ideas and stories in teaching. I always go first to speak out because you cannot just demand teachers to do and you do not do, or teachers will consider learning as a burden.”

Furthermore, in relation to schools’ situation, another principal (school code 4511) considered that teacher learning should be centered on students’ learning needs. She said “our school is located close to the largest clothes wholesale market and most of our students’ parents are making a living in the market in various forms of small businesses. In order to survive in the city, these parents have to work more but have less time to take care of their children’s education. This family background makes most of our students have learning problems and our school has to fight for maintaining students’ attendance rate. If we want to be responsible for our students, our teachers must learn to work with these children and their families. And this requirement pushes our teachers for different teaching methods.” Based on these two quotations, it is salient that principals value the school learning climate. Therefore, the third dimension and its measurement should be kept for further analysis in the next stage of the study.

Moreover, two items can also find support from the above quotations. The quotation “our

school is …different teaching methods" confirms the item from Li's (2015) framework 'promote classroom teaching reform through multi-methods' because this principal pushed teachers to find different teaching methods to meet students' needs. Moreover, the quotation "the society is now … learning as a burden" further confirms the item 'set aside time at faculty meetings for teachers to share ideas or information' from the original framework of PIMRS.

The fourth dimension belongs to the Chinese PIMRS adapted version. It was added based on the findings of Li's work (2015). It focuses on working for external support and resources. As a result, the dimension was named 'seeking support for instruction within and from outside of schools'. The ideas and practice of getting external help consistently emerged from the interview data. For example, the principal (school code 4511) of the school located near the clothes wholesale market also told me that "we often sit together to promote successful experience, discuss possible solutions, and even invite external resources to help us understand our students. Because of my indefatigable efforts working on persuading the director of my district educational bureau, my school got extra money to build a big tree house for students and our students love it." This example is evidence that Chinese principals seek support externally. It not only validates the fourth dimension, it further supports one item: 'maintain policy connection with district supervisors'. Therefore, this dimension and its items should be adopted for further analysis.

Moreover, some individual items were identified from the interview data analysis. The interviewees often expressed the idea that their schools are too large to be managed only by one principal. As principals, they indeed need helpers. Middle leaders are often mentioned as principals' instructional helpers. One principal (school code 4506) said "I must depend on my middle level teachers to carry out what I have planned for school. They are the front line

managers and they know teachers and students better." Another quotation from a principal (school code 4509) relates to experience inheritance: "shortly before I became the principal, my predecessor passed her wisdom and experience to me that I cannot and should not do everything on my own. Instead, I need to have them (middle leaders) to do on behalf of me and give them authority and trust". Based on these interview data, item 27 which relates to middle leaders was added to the instrument within the fourth dimension. The item is described as 'empower middle leaders with a focus on leadership team development'.

In addition to instructional leadership performed by principals, principals consider "shuji" (party branch secretary) to be one important role of the school leadership team. In the interview with one principal, she told many stories and presented pictures of activities that "shuji" organized for teachers hoping to move the school climate to the direction the principal intended. According to her, "Shuji" is a typical position, but is likely unique to Chinese schools, someone who is responsible to assist the school management and climate building. While the principal is absent, "shuji" is the one to manage all of the school issues as the acting principal (school code 4502). As a result, people who are in the position of "shuji" are heavily relied on for instructional issues. Based on this discovery, besides the instructional vice principal, director of teaching and discipline, director of research, grade leader, subject leader, the researcher added a choice 'other instructional middle leaders' for "shuji", and other middle leaders who are not mentioned in the five positions listed above drawn from the chapter of literature review.

To conclude, the purpose of the pilot interview is to further examine the readability of the translation of PIMRS and further validate the construct and corresponding items. At the level of dimension, all three dimensions from the original PIMRS and the fourth one from Li's (2015) conceptual framework were confirmed. Moreover, interview data were found to

support measuring items and a few examples were provided. Therefore, through the process of interview and data analysis, the instrument of revised PIMRS is ready to be tested in the next stage of validation by the quantitative method.

4.2 Pilot Survey Tests

4.2.1 Basic Information of Survey Participants

Among the 245 participants, principals' information has already been presented in table 5 of this chapter. In addition to principals, 86 middle instructional leaders returned the surveys back to me (see table 6). Their job position varied among the six categories. The largest number of middle leaders was instructional directors and the smallest number went to subject leaders, research directors and other middle leaders, the latter mostly filled by the party branch secretary. The small number of subject leaders was probably because all 15 schools are primary level with only a few subjects. Moreover, each school usually has one party branch secretary, and one research director. There were far more female middle leaders than males. This result is consistent with the gender distribution of principals' data. Most surveyed middle leaders have bachelor degrees, and work in large schools. In general, compared to the fact that many middle leaders have rich teaching experience, their experience as middle leaders is shorter.

Table 6

Demographic Information for the Participating Middle Instructional Leaders (N=86)

School Level	Primary School 15					
Position Type	Instructional Assistant Principal 12 (14%)	Instructional Director 29 (33.7%)	Research Director 9 (10.5%)	Grade Leaders 18 (20.9%)	Subject Leaders 9 (10.5%)	Other Middle Leaders 9 (10.5%)
Gender	Male Middle Instructional Leaders 24 (27.9%)			Female Middle Instructional Leaders 62 (72.1%)		
School size	501-1000 4(4.7)		1001-2000 53(61.6)		>2000 29(33.7)	

Education Background	Associate degree or below 17 (19.8%)			Bachelor degree 69 (80.2%)	
Years of being middle instructional leaders	1 year 12 (14%)	2-4 years 27 (31.4%)	5-9 years 26 (30.2%)	10-15 years 14 (16.3%)	>16 years 7 (8.1%)
Years of being teachers	1 year 5 (5.8%)	2-4 years 15 (17.4%)	5-9 years 10 (11.6%)	10-15 years 55(64%)	>16 years 1 (1.2%)

There were 144 teachers who participated in the pilot study and their basic information is presented in table 7. Again, there were far more female teachers than male teachers in the sample. Most teachers were fairly young, over 80% of them either young or middle-aged. 76.4% of the surveyed teachers had bachelor degrees. Although teachers from this data sample were relatively young in age, the years of their teaching experience was the opposite. Over half of them had more than 10 years of experience being teachers, and another nearly 20% had 5-9 years' experience. Less than 30% of teachers could be categorized as immature teachers.

Table 7

Demographic Information for the Participating Teacher (N=144)

School Level	Primary School 15				
Gender	Male Teachers 27 (18.8%)			Female Teachers 117 (81.3%)	
Age	<35 years old 90 (62.5%)	36-45 years old 421 (29.2%)		46-55 years old 12 (8.3%)	
Education Background	Associate degree or below 34 (23.6%)			Bachelor degree 110 (76.4%)	
Years of being teachers	1 year 9 (6.3%)	2-4 years 31 (21.5%)	5-9 years 29 (20.1%)	10-15 years 23 (16%)	>16 years 52 (36.1%)

4.2.2 Results of Reliability Tests

As suggested in the technique book of PIMRS (Hallinger & Wang, 2015), a reliability and

validity check was conducted before performing further analysis. The value of conducting the pilot tests is to determine the measurement quality of PIMRS in a particular study. Therefore, a Cronbach's alpha reliability was used to test the reliability of the Chinese version of PIMRS (See table 8). Then, confirmatory factor analyses were implemented to assess the construct validity of the PIMRS instrument (See table 9). The results of the pilot test are presented in the following paragraphs.

Table 8

Pilot Study Reliability: Cronbach's a reliability results (N=245)

Cronbach's a	PIMRS60	PIMRS32	D1	D2	D3	D4	PIMRS22
Principal (n=15)	.883	.845	-.179	.485	.866	.737	.805
Teacher (n=144)		.955	.857	.770	.923	.915	.927
		MIMRS28	D1	D2	D3	D4	
Mid-instructional-leaders (n=86)		.931	.780	.742	.878	.807	

Note: PIMRS=Principal and teachers' rated on principal instructional leadership; PIMRS60=Principal self-rating on instructional leadership with in total 60 items from the original version 50 items and additional Li's 10 items; PIMRS32=Principals and teachers' rating on principal instructional leadership (32 items); PIMRS22= Principal and teachers' rating on principal instructional leadership (22 items); MIMRS28=Mid-instructional-leader rated their own instructional leadership (28 items).

The Cronbach's coefficient alpha reliability results of the principals' version were not applicable this time since the sample size was too small with only 15 participants. The results of each dimension from the teachers' version ranged from .770 to .955. The original 22 items were .927 which was lower than 32 items with .955. The value of .955 indicates the reliability of the whole scale has high internal consistency. For middle instructional leaders, the lowest one was .742 which was acceptable (Nunnally, 1978). The alpha value of the whole scale was .931 which suggested a good fit of the scale.

4.2.3 Results of Confirmatory Factor Analysis

Continuing the Cronbach's alpha reliability tests, confirmatory factor analyses were next performed by Mplus Version 7 (Muthen & Muthen, 2010) since this set of instruments was adapted based on Hallinger's and Li's conceptual framework (see table 8). Widely referred indexes of evaluating model fit are included, such as the root mean square error of approximation (RMSEA) and comparative fit index (CFI). The latter is a popular index for deciding whether a model is good fit or not. It is insensitive to the sample size, so a good fit will not be the result of a large sample. The general cutoff point for a reasonable fit model is .90; greater than .95 indicates good fit (Browne & Cudeck, 1993; Hu & Bentler, 1999). For its part, RMSEA distinguishes itself from other fit indexes as another popular reported indicator for good model fit (Browne & Cudeck, 1993; Sugawara & MacCallum, 1993; Browne & Arminger, 1995; Steiger, 1990; Wang & Wang, 2012). A reasonable cutoff point is .80 for RMSEA (Wang & Wang, 2012), and the less the better. Specifically, CFI greater than 0.90 on three levels is considered a reasonable fit; and this was greater than 0.95 on the teacher level (32 items), indicating a good model fit (Browne & Cudeck, 1993; Hu & Bentler, 1999). In addition, RMSEA is less than .08 which suggests a reasonable model fit (Browne & Cudeck, 1993; Schreiber et al, 2006). In the current data set, RMSEA of the middle instructional leaders and teachers was 0.095 and 0.073, which indicates a reasonable model fit, although the RMSEA estimate for middle leaders' data was 0.095 which is close to the cutoff point. Small sample size may be the reason to explain this. Moreover, many researchers such as Steiger (1990) suggested less than 0.1 is a mediocre fit (Browne & Cudeck, 1993; MacCallum, Browne & Sugawara, 1996; Byrne, 1998) and is acceptable. The above reported results were from the CFA of 32 items, which includes three dimensions of the original PIMRS and one dimension established from Li's construct. A CFA test was also performed on the original construct of PIMRS, which is 22 items. The results (see table 10)

did not satisfy the requirements of a good model fit. For example, the RMSEA value of teachers' was .110. Compared to 22 items of the three dimensions model, the 32 items of the four dimensions of PIMRS have a better model fit and construct validity according to the pilot study. As a result, the survey of 32 items will be distributed in the main study.

Table 9

Pilot test of CFA results for 15 primary schools (N=245)

	Chi-square	DF	P value	RMSEA	CFI	TLI
Principals (n=15)	Sample size too small to compute CFA					
Teachers (n=144)						
32 items	800.001	455	0.0000	0.073	0.970	0.967
32 items-y8	758.739	427	0.0000	0.073	0.971	0.968
22 items	560.636	204	0.0000	0.110	0.935	0.926
Middle leaders (n=86)						
28 items	609.044	344	0.0000	0.095	0.928	0.921
28 items-y7	511.368	318	0.0000	0.084	0.947	0.941

Note: 1) Estimate= WLSMV. 2) 28 items of middle leaders is self-rating instructional leadership behaviors. 3) CFI, comparative fit index; RMSEA, root mean square error of approximation.

Table 10

PIMRS Chinese Version Teacher 32 items factor loadings

Items	Factor Loading	P value
D1: Defining the School Vision		
1. Develop a focused set of annual school-wide goals	.86	0.00
2. Use data on student performance when developing the school's academic goals	.62	0.00
3. Develop goals that are easily understood and used by teachers in the school	.79	0.00
4. Develop school uniqueness and plan	.82	0.00
5. Communicate the school's mission effectively to members of the school community	.89	0.00
6. Refer to the school's academic goals when making curricular decisions with teachers	.88	0.00
D2:Managing the Instructional Program		
7. Ensure that the classroom priorities of teachers are consistent with the goals and direction of the school	.79	0.00
8. Review student work products when evaluating classroom instruction	.13	0.11
9. Make clear who is responsible for coordinating the curriculum across grade levels	.65	0.00
10.Draw upon the results of school-wide testing when making curricular decisions	.38	0.00
11. Participate actively in the review of curricular materials	.82	0.00
12.Develop school-based curriculum around school uniqueness	.83	0.00
13. Meet individually with teachers to discuss student progress	.82	0.00
14. Use tests and other performance measure to assess progress toward school goals	.22	0.00
D3: Developing a positive school learning climate		
15. Encourage teachers to use instructional time for teaching and practicing new skills and concepts	.77	0.00
16. Take time to talk informally with students and teachers during recess and breaks	.82	0.00
17. Attend/participate in extra- and co-curricular activities	.86	0.00
18. Compliment teachers privately for their efforts or performance	.67	0.00
19. Acknowledge teachers' exceptional performance by writing memos for their personnel files	.81	0.00
20. Create professional growth opportunities for teachers as a reward for special contributions to the school	.60	0.00
21. Lead or attend teacher in-service activities concerned with instruction	.88	0.00
22. Set aside time at faculty meetings for teachers to share ideas or information from in-service activities	.88	0.00
23. Promote regular school-based research activities	.89	0.00
24. Promote classroom teaching reform through multi-methods (e.g., invite teaching experts to come	.76	0.00

Items	Factor Loading	P value
for lectures)		
25. Recognize superior student achievement or improvement by seeing in the office the students with their work	.70	0.00
26. Contact parents to communicate improved or exemplary student performance or contributions	.79	0.00
D4: Seeking support for instruction within and from outside of schools		
27. Empower middle leaders with a focus on leadership team development	.99	0.00
28. Promote staff relationship	.95	0.00
29. Build partnership with other schools to promote teaching development	.87	0.00
30. Be actively involved in district activities and regularly report school work	.92	0.00
31. Maintain policy connection with district supervisors	.92	0.00
32. Increase parental involvement and community support on teaching activities	.76	0.00

The pilot tests provided evidence that the Chinese version of the teacher form of PIMRS (32 items) has reasonable reliability and validity (see table 8). The principal sample was only fifteen, which was too small for performing factor analysis. This will be examined in the main study. Specifically, the results shows that the 32-item construct is better than the 22-item construct in the pilot test, according to the comparison of model fit indexes such as RMSEA and CFI (See tables 7). In addition, it also indicates that the standardized estimate of item 8 in the teacher version 32 items construct has a very low factor loading, 0.125 (P>.05) which specifies that it may not measure within the dimension 'managing the instructional programs' and better be removed. Although items 10 and 14 also had low factor loadings of .38 and .22, they are both significant in P value (P<.05), which indicates an item may be removed if it does not have a strong theoretical foundation. Considering all three items were from Hallingers' original PIMRS framework, I double checked their item descriptions. Item 8 'review student work products when evaluating classroom instruction' describes a conflicting practice in the Chinese educational context since the Chinese MoE has been promoting

quality-oriented education after the educational reform of the new curriculum (MoE, 2001). Moreover, interview data from the pilot study with 15 principals all lead to the conclusion that the concept of quality education has been deeply rooted in schools. The data also showed that student academic achievement is not accounted for in teachers' classroom assessment or included in the formal teacher evaluation. So it was decided to remove item 8 from all three instruments including principal, middle leaders (Item 7), and teacher version in the next stage of this study. In addition, item 10 'Draw upon the results of school-wide testing when making curricular decisions' and item 14 'Use tests and other performance measure to assess progress toward school goals' which were supported by the Chinese context through the pilot interviews were in doubt. Both items were retained temporarily for several reasons: on the one hand, they are from the original PIMRS framework with strong theoretical bases, and are further validated in the Chinese context. On the other hand, the sample size is rather small in the pilot study, so these two items were allowed to go through the validation process again in the main study. If they present unsatisfactory low factor loading again, they will be left out from the data analysis of hypotheses.

As mentioned before, item 7 in MIMRS (same as item 8 in the PIMRS teacher version) was deleted correspondingly (see table 11). After deleting item 7, the RMSEA and CFI of the whole model were better than the previous model at .084, and .947. However, item 12 (same as item 14 in the PIMRS teacher version) indicated a low factor loading but significant again. Based on the same reason as in the last paragraph, this item was retained temporarily.

Table 11

Middle instructional Leaders' instructional leadership（MIMRS）27 items factor loadings

Items	Factor Loading	P value
D1: Defining the School Vision		
1. Develop a focused set of annual school-wide goals	.82	0.00
2. Use data on student performance when developing the school's academic goals	.50	0.00
3. Develop school uniqueness and plan	.94	0.00
4. Communicate the school's mission effectively to members of the school community	.86	0.00
5. Refer to the school's academic goals when making curricular decisions with teachers	.84	0.00
D2:Managing the Instructional Program		
6. Ensure that the classroom priorities of teachers are consistent with the goals and direction of the school	.61	0.00
8: Coordination of various teaching activities	.75	0.00
9. Participate actively in the review of curricular materials	.78	0.00
10.Develop school-based curriculum around school uniqueness	.90	0.00
11. Meet individually with teachers to discuss student progress	.55	0.00
12. Use tests and other performance measure to assess progress toward school goals	.25	0.00
D3: Developing a positive school learning climate		
13. Encourage teachers to use instructional time for teaching and practicing new skills and concepts	.82	0.00
14. Take time to talk informally with students and teachers during recess and breaks	.65	0.00
15. Attend/participate in extra- and co-curricular activities	.71	0.00
16. Compliment teachers privately for their efforts or performance	.58	0.00
17. Acknowledge teachers' exceptional performance by writing memos for their personnel files	.55	0.00
18. Create professional growth opportunities for teachers as a reward for special contributions to the school	.67	0.00
19. Lead or attend teacher in-service activities concerned with instruction	.91	0.00
20. Set aside time at faculty meetings for teachers to share ideas or information from in-service activities	.86	0.00
21. Promote regular school-based research activities	.78	0.00
22. Promote classroom teaching reform through multi-methods (e.g., invite teaching experts to come for lectures)	.76	0.00
23. Recognize superior student achievement or improvement by seeing in the office the students with their work	.62	0.00
24. Contact parents to communicate improved or exemplary student performance or contributions	.49	0.00

Items	Factor Loading	P value
D4: Seeking support for instruction within and from outside of schools		
25. Your principal authorizes you to be independently responsible for some instructional programs	.73	0.00
26. Promote staff relationship	.77	0.00
27. Build partnership with other schools to promote teaching development	.75	0.00
28. Increase parental involvement and community support on teaching activities	.84	0.00

Chapter 5: Results of Data Analysis: Research Questions and Hypotheses Testing

This chapter is the second phase of the results section, which aims at presenting findings in regard to the research question and three related hypotheses, investigating the patterns of Chinese principal instructional leadership, the perceptual differences between principal and teachers on PIL, and the cultural and organizational impact on these perceptual differences. Validation tests such as reliability, CFA, and predictive validity were processed as standard procedures. Data collected from PIMRS and MIMRS were examined by a series of cross tabs, paired t-tests, and correlation analyses. The first and second hypotheses are partially supported, and the third hypothesis is fully supported.

5.1 Participants' Profile

There were 132 schools in total who participated in this phase of the study: 76 primary schools and 56 secondary schools (see table 12). The valid percent is 57.6 versus 42.4. The number of teachers at each school ranges from 26 to 307, and more than half of the schools have 50 or more teachers. As for the school size, 21 schools have fewer than 500 students, and the valid percent is 15.9. There are 53 schools with 40.2 valid percent that have 501–1000 students; 41 schools with a valid percent of 31.1 have 1001–2000 students; and 17 schools with the valid percent 12.9 have more than 2000 students. There are 95 male principals and 37 female principals from 132 schools, making the valid percent 72 versus 28.

The largest age group of principals contains 58 people who are aged from 46 to 55, accounting for 43.9 percent. Nine principals who make up 6.8 percent of the sample are younger than 35 years old, while 43 principals representing 32.6% are aged from 36 to 45 years old. About 22 principals, or 16.7 percent of the sample, are older than 55. Ninety-five principals (72%) hold a bachelor's degree, 32 (24.2) have associate degrees or below, and

only 5 principals (3.8%) possess a master's degree or above. Out of 132 principals, 62 have served as principal in their current schools for 2 to 4 years, and 33 principals have held the position for 5 to 9 years; 14.3% (19) of the 132 principals have been working in their current school for more than 10 years. New to their current school are 13.6% of the principals, with only 1 year of experience. Accounting for 76.5% of the total, 101 principals have more than 5 years of principalship experience, and 8 principals are new to the position. Representing 78.8% of the total participants, 104 principals have more than 10 years of teaching experience. No principal stepped into this position without any teaching experience. The most inexperienced group in this study has 2–4 years of experience, which includes 11 principals in this sample. The sample matches the pattern of a large population because Chinese principals are usually elected or selected from teachers with outstanding professional expertise. See table 12 for detailed results.

Table 12

Demographic Information for the Participating Schools and Principals (N=132)

School Level	Primary School 76 (57.6%)			Secondary School 56 (42.4%)	
School Size	< 500 students 21 (15.9%)	501-1000 students 53 (40.2%)		1001-2000 students 41 (31.1%)	>2000 students 17 (12.9%)
Gender	Male Principals 95 (72%)			Female Principals 37 (28%)	
Age	<35 years old 9 (6.8%)	36-45 years old 43 (32.6%)		46-55 years old 58 (43.9%)	>55 years old 22 (16.7%)
Education Background	Associate degree or below 32 (24.2%)		Bachelor degree 95 (72%)	Master degree or above 5 (3.8%)	
Years of being principalship for this school	1 year 18 (13.6%)	2-4 years 62 (47%)	5-9 years 33 (25%)	10-15 years 13 (9.8%)	>16 years 6 (4.5%)
Years of being principalship	1 year 8 (6.1%)	2-4 years 23 (17.4%)	5-9 years 31 (23.5%)	10-15 years 35 (26.5%)	>16 years 35 (26.5%)

Years of being teachers	1 year 0%	2-4 years 11 (8.3%)	5-9 years 17 (12.9%)	10-15 years 36 (27.3%)	>16 years 68 (51.5%)

There were 730 middle instructional leaders who participated in this study. From primary schools, there were 418 participants, and 312 from 56 secondary schools. On average, each school had 6 participants. When looking at the 730 middle instructional leaders, one can see that 99 are instructional assistant principals (13.6%), 145 are instructional directors (19.9%), 61 are research directors (8.4%), 177 are grade leaders (24.2%), 137 are subject leaders (18.8%), and 111 are other middle leaders (such as the party branch secretary, or *shuji*) and sub-research project leaders (15.1%). More females are middle instructional leaders than males. There are 425 females constituting 58.2% of the group, versus 305 males, who represent 41.8%. Comprising 70.3% of the total of 730 middle leaders, 513 possess a bachelor's degree; 198 of them (27.1%) have an associate degree or below. Only 19 (2.6%) of them completed a master's degree or above. Representing 37.4% of the total 730 samples, 273 middle instructional leaders have 2–4 years of middle leadership experience; 141 (19.3%) middle leaders are new to their position, and 164, or 22.4% of total participants, have more than 10 years of leadership experience. In terms of teaching, 82% of middle leaders have more than 10 years of experience. See table 13 for detailed results.

Table 13

Demographic Information for the Participating Middle Instructional Leaders (N=730)

School Level	Primary School 418 (57.3)			Secondary School 312 (42.7)		
Position Type	Instructional Assistant Principal 99 (13.6%)	Instructional Director 145 (19.9%)	Research Director 61 (8.4%)	Grade Leaders 177 (24.2%)	Subject Leaders 137 (18.8%)	Other Middle Leaders 111 (15.1%)
Gender	Male Middle Instructional Leaders 305 (41.8%)			Female Middle Instructional Leaders 425 (58.2%)		
Age	<35 years old 174 (23.8%)	36-45 years old 367 (50.3%)		46-55 years old 151 (20.7%)	>55 years old 38 (5.2%)	

Education Background	Associate degree or below 198 (27.1%)		Bachelor degree 513 (70.3%)		Master degree or above 19 (2.6%)
Years of being middle instructional leaders	1 year 141 (19.3%)	2-4 years 273 (37.4%)	5-9 years 152 (20.8%)	10-15 years 104 (14.2%)	>16 years 60 (8.2%)
Years of being teachers	1 year 7 (1%)	2-4 years 46 (6.3%)	5-9 years 78 (10.7%)	10-15 years 141 (19.3%)	>16 years 458 (62.7%)

There are 978 teachers who participated in this study. That number comprises 556 teachers from 76 primary schools and 422 teachers from 56 secondary schools. The average number of participants is 7.4 for each school. There are four times more female teachers than their male peers: 782 of the teachers are female (80%), and 196 are male (20%). In terms of age, 473 teachers (48.4%) are younger than 35, while 17 (1.7%) are older than 55. The number in the age group of 36–45 years is 364 (37.2%), which is more than the age group of 46–55 years, accounting for 124 (12.7%). Representing 68.7% of the total sample (978), 672 teachers possess a bachelor's degree; 287 (29.3%) have associate degrees or below. Only 19 (1.9%) of them have a master's degree or above. In terms of experience, 41.7% of teachers (408) have more than 16 years of teaching experience, and 580 teachers have more than 10 years of teaching experience, which makes up 59.3 percent of the total teacher participants. Eighty-eight are new teachers, while 153 have been teaching for 2–4 years and 157 for 5–9 years. See table 14 for detailed results.

Table 14

Demographic Information for the Participating Teachers (N=978)

School Level	Primary School 556 (56.9)			Secondary School 422 (43.1)
Gender	Male Teachers 196 (20%)			Female Teachers 782 (80%)
Age	<35 years old 473 (48.4%)	36-45 years old 364 (37.2%)	46-55 years old 124 (12.7%)	>55 years old 17 (1.7%)
Education Background	Associate degree or below	Bachelor degree 672 (68.7%)		Master degree or above 19 (1.9%)

	287 (29.3%)				
Years of being teachers	1 year 88 (9%)	2-4 years 153 (15.6%)	5-9 years 157 (16.1%)	10-15 years 172 (17.6%)	>16 years 408 (41.7%)

5.1.1 Results of Cross-Tab Analysis

5.1.1.1 Principal Data Cross-Tab Results

When principal instructional leadership practice was compared with school size, it was found that the larger the school size, the greater the principal leadership, especially at the overall level. Figure 6 shows an obvious stepped increase. In addition, it seems that in the schools with more than 2,000 students, principal instructional leadership emphasizes and values the dimension of defining the school vision more than smaller schools.

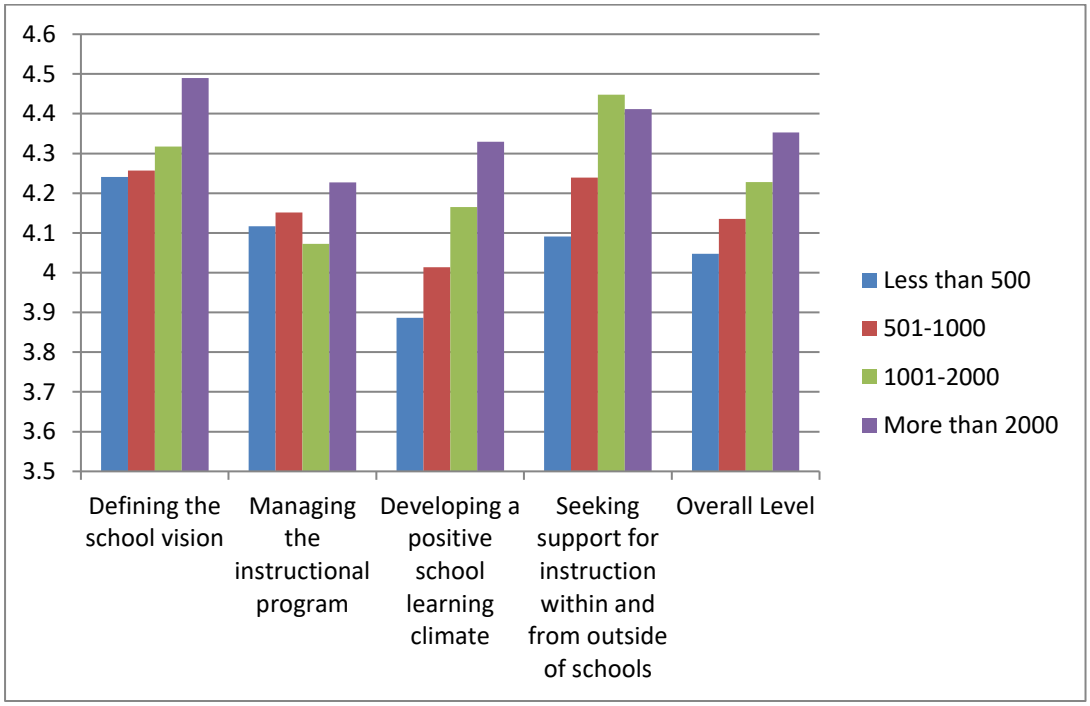

Figure 6. Cross-Tab Results of School Size and Principal Instructional Leadership

When principal instructional leadership practice is compared at the school level, the results as illustrated in Figure 7 demonstrate that there are slight differences between elementary schools and secondary schools. Moreover, the dimensions of managing the instructional program and developing a positive school climate display lower scores than other dimensions. Overall, there is no clear pattern in this comparison.

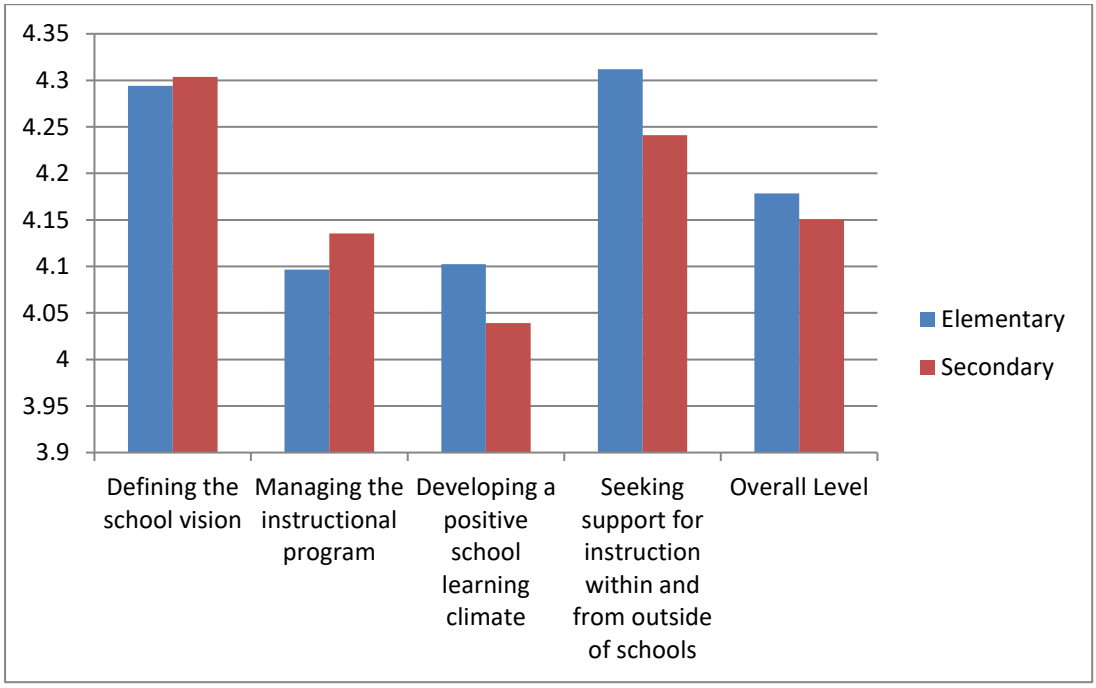

Figure 7. Cross-Tab Results of School Level and Principal Instructional Leadership

Comparing principal instructional leadership and gender, as illustrated in figure 8, it is found that female principals tend to rate their instructional leadership higher at both overall and dimensional levels. This may indicate that female principals are engaging more actively in the instructional managing process. Moreover, female principals are much more active than male principals in the dimension of seeking support for instruction within and from outside of schools.

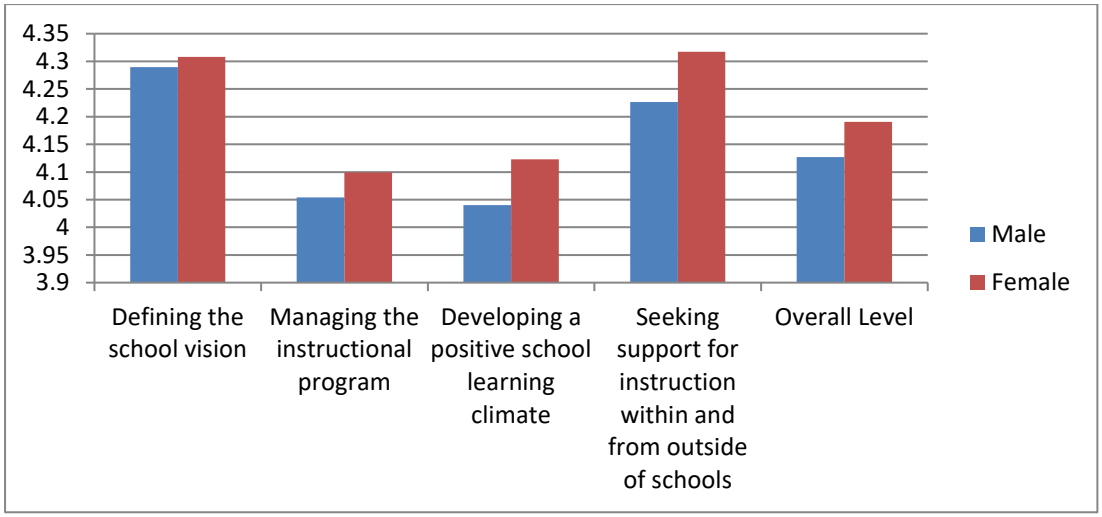

Figure 8. Cross-Tab Results of Gender and Principal Instructional Leadership

If principal instructional leadership is compared with age, as shown in figure 9, it is apparent that young principals rate themselves much more highly than the older ones. Along with the increase of age, the level of principal instructional leadership declines. The oldest age group, of those over 55, reports the lowest scores in performing instructional leadership. This may indicate strong self-confidence in the younger principals, and they may be more dedicated to leadership behaviors. In the other hand, the scores may reflect the modesty of the experienced principals.

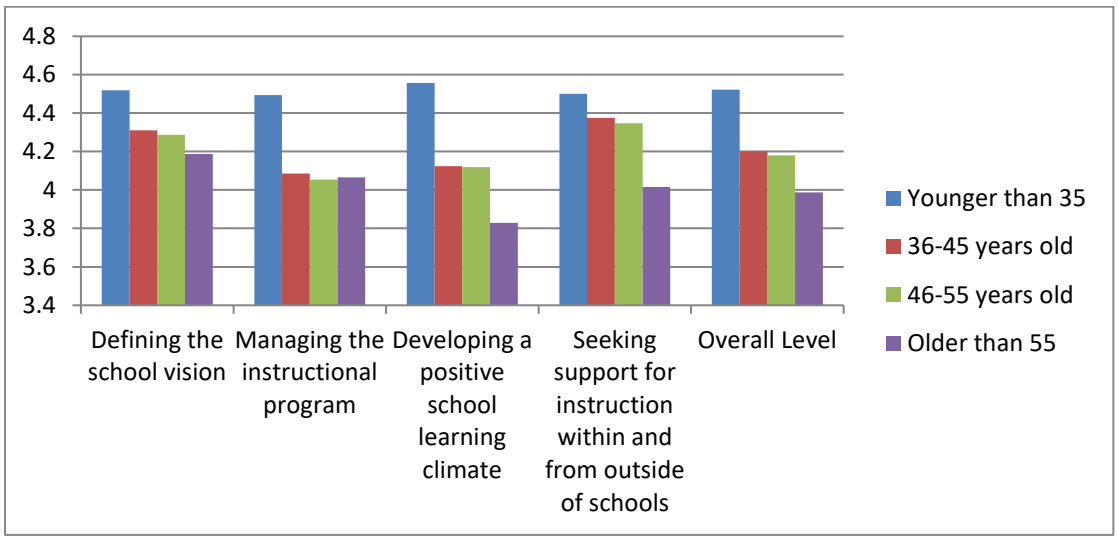

Figure 9. Cross-Tab Results of Age and Principal Instructional Leadership

According to the results presented in Figure 10, newly appointed principals with 1 year of experience in the current school, and the principals with 5–9 years of experience who rate lower than other age groups. New principals may be acquainting themselves with everything and formulating the new rules, so it is understandable that they have lower leadership performance. However, principals with 5–9 years of experience in the current school may encounter job burnout and experience career stagnation of their principalship.

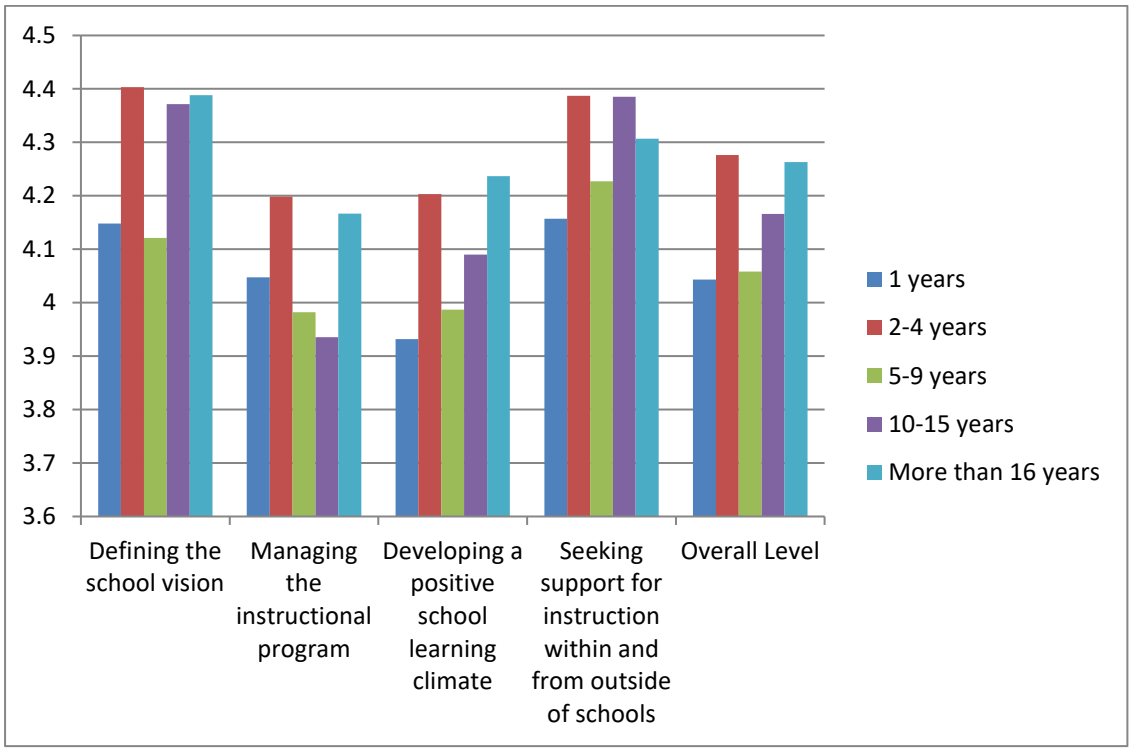

Figure 10. Cross-Tab Results of Principalship in Current School and Principal Instructional Leadership

Comparing principal instructional leadership practice with the total time as principal, no obvious pattern emerges. Figure 11 illustrates that principals have the highest rating of instructional leadership during the second to fourth years of their career as principal. The principals in the sample area were evaluated every four years. According to the 132 principal data of this study, about 40% of the principals stay in their current schools for more than 5 years. They rate the highest during their 2-4 years being principals may due to it is the most

energetic and creative period, also may because of their incoming evaluation after the 4th year.

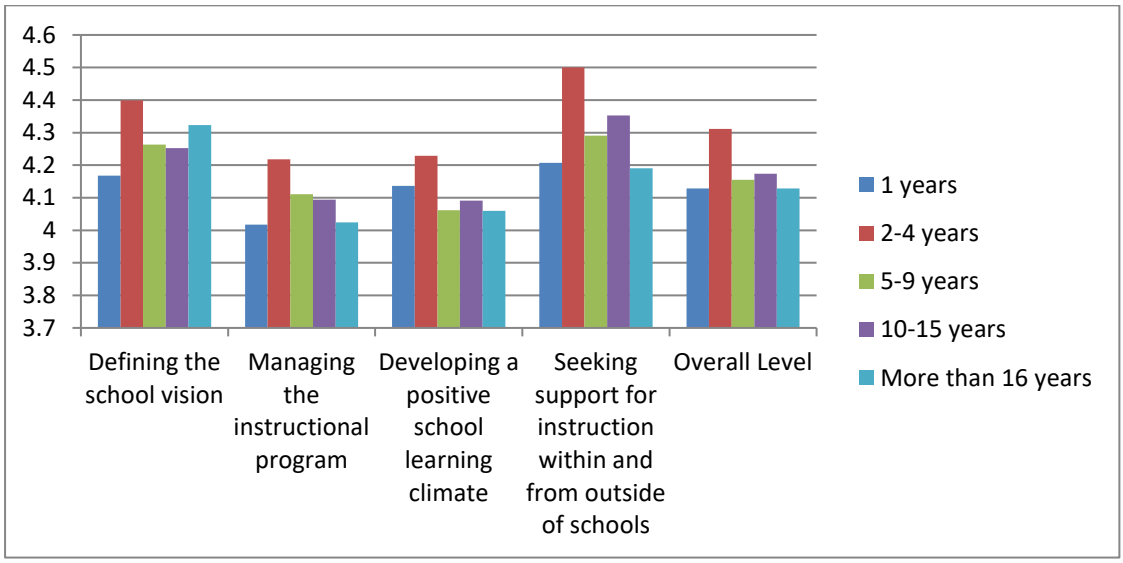

Figure 11. Cross-Tab Results of Total Principalship and Principal Instructional Leadership

Figure 12 shows the comparison between principal instructional leadership practice and teaching experience. In accordance with current Chinese education policy, principals must have teaching experience before jumping into a principal position, so the figure shows that at least 2–4 years of teaching experience for every principal. However, it also depicts slight differences in instructional leadership among the principals, who have diverse teaching experience. Therefore, principals' teaching experience, no matter how extensive, does not greatly affect their instructional leadership performance.

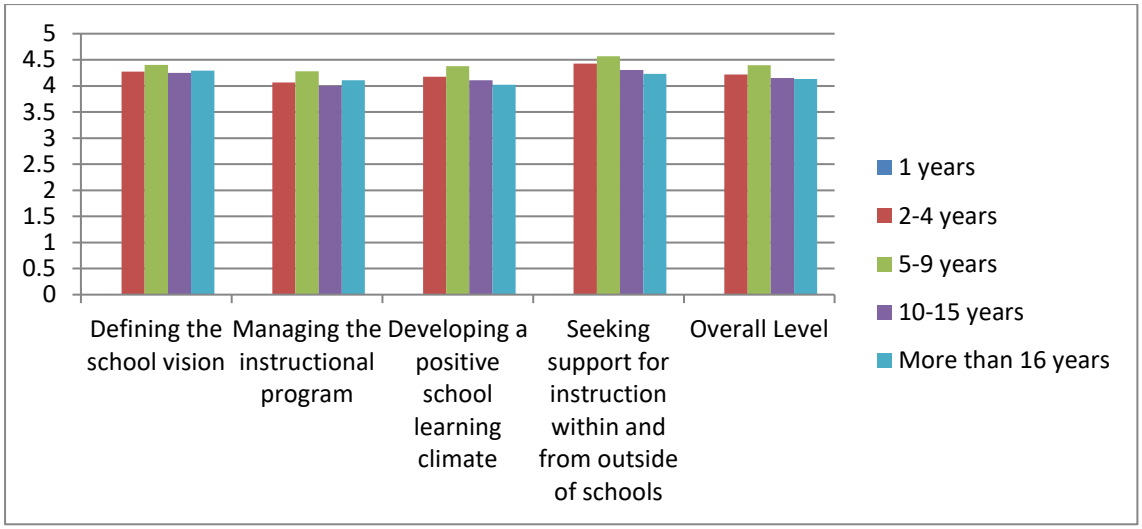

Figure 12. Cross-Tab Results of Teaching Experience and Principal Instructional Leadership

5.1.1.2 Middle Instructional Leaders' Data Cross-Tab Results

As shown in figure 13, comparing middle leaders' instructional leadership performance with gender, the results provide some interesting data. Both male and female middle leaders report lower scores on defining the school vision than on other dimensions. Both groups may think that principals are doing more on defining school vision and that they are just helping to distribute the vision for principals. Other than the first dimension, female instructional leaders appear to take more action on the overall level and dimensions than male peers. The results are similar to the principals' situation.

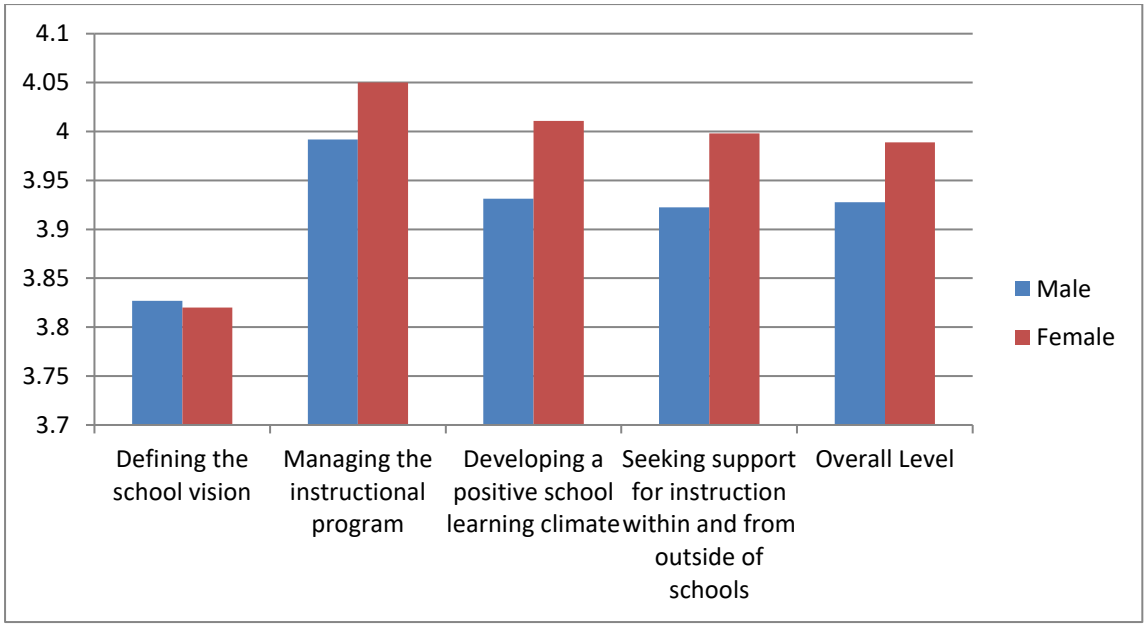

Figure 13. Cross-Tab Results of Gender and Middle Leaders' Instructional Leadership

When middle leaders' instructional leadership performance is compared with their age (see Figure 14), it is found that younger middle instructional leaders rate themselves higher on all levels. In the rising period of their career path, they may still have a strong desire to be leaders. However, leadership performance decreases year by year, probably because chances of becoming principal at this age are small and middle leaders may focus less on leadership as they prepare for retirement.

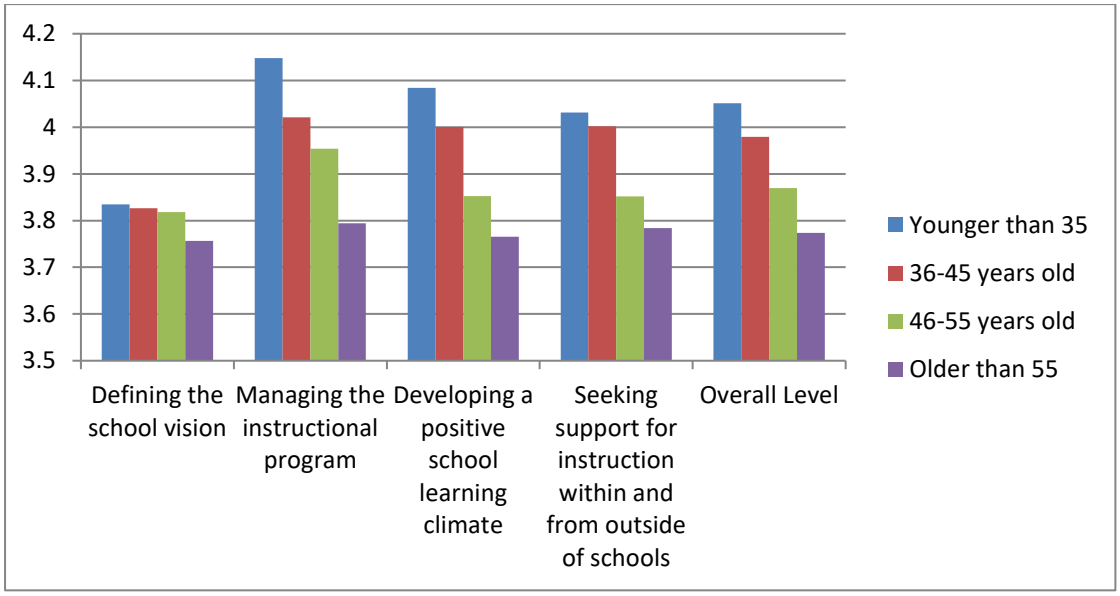

Figure 14. Cross-Tab Results of Age and Middle Leaders' Instructional Leadership

When middle leaders' instructional leadership practice is compared with their middle leadership experience, no clear pattern emerges from the data analysis, as shown in Figure 15. This reveals that middle instructional leaders who have 5–9 years of middle leadership experience rate themselves higher on most dimensions and overall levels.

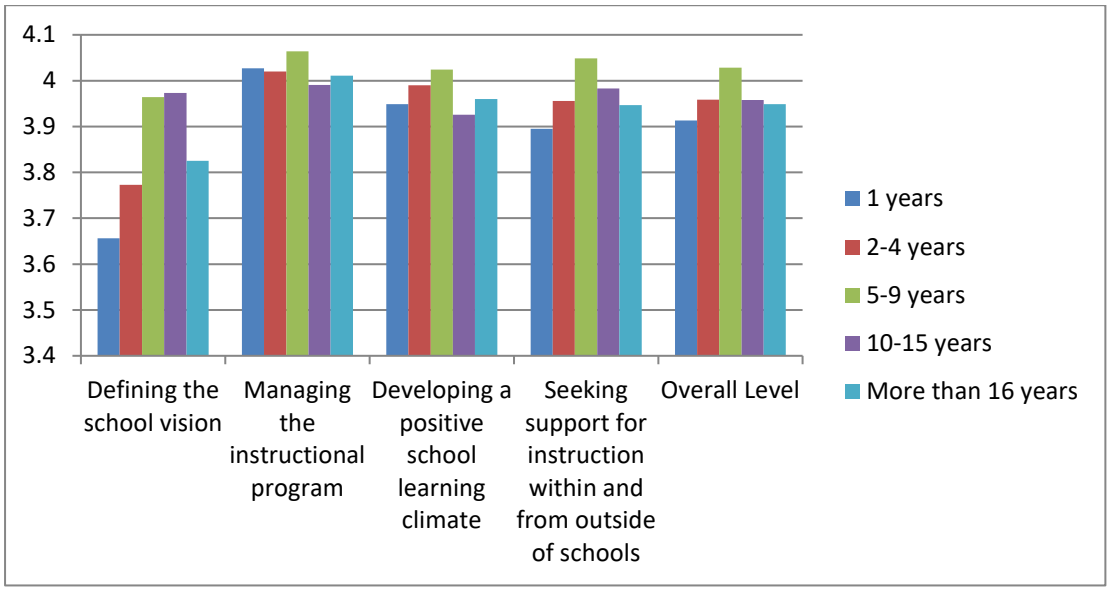

Figure 15. Cross-Tab Results of Years of Being Middle Leaders and Middle Leaders' Instructional Leadership

As can be seen in Figure 16, middle instructional leaders with 2–4 and 10–15 years of teaching experience in the position are rated higher than other groups. This may indicate two golden periods of growth as teachers. However, job burnout again shows in years 5–9, which is similar to the principals' rating. Probably after 5–9 years, some new or creative training is required.

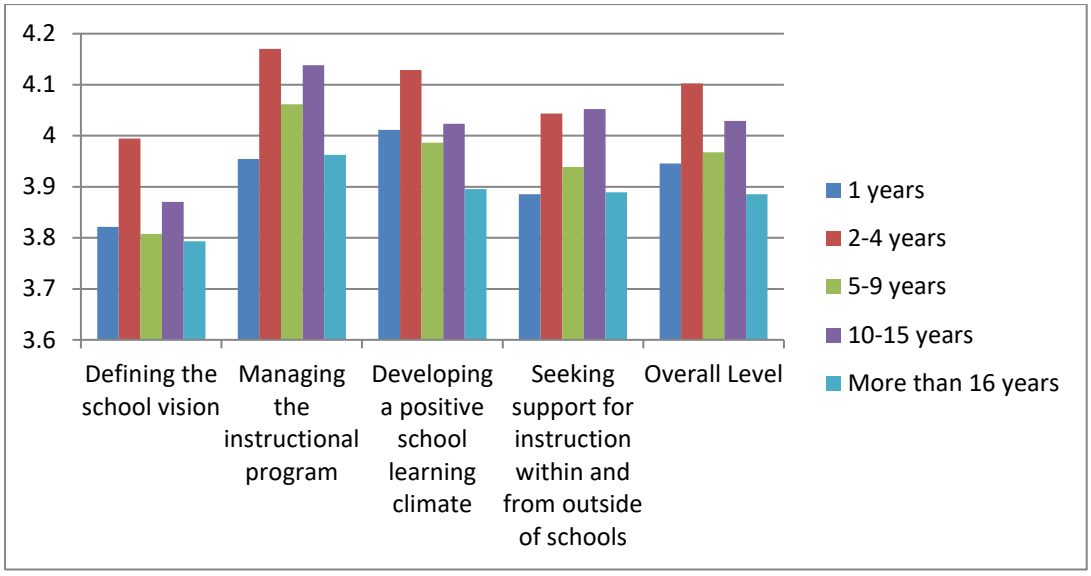

Figure 16. Cross-Tab Results of Years of Being Teachers and Middle Leaders' Instructional Leadership

5.1.1.3 Teachers' Data Cross-Tab Results

As shown in Figure 17, female teachers rated their principals higher than male teachers did in all levels except the dimension of seeking support for instruction within and from outside of school, for which the results are similar. However, the fact that most principals are male and most teachers are female may have an impact on the results due to gender effects.

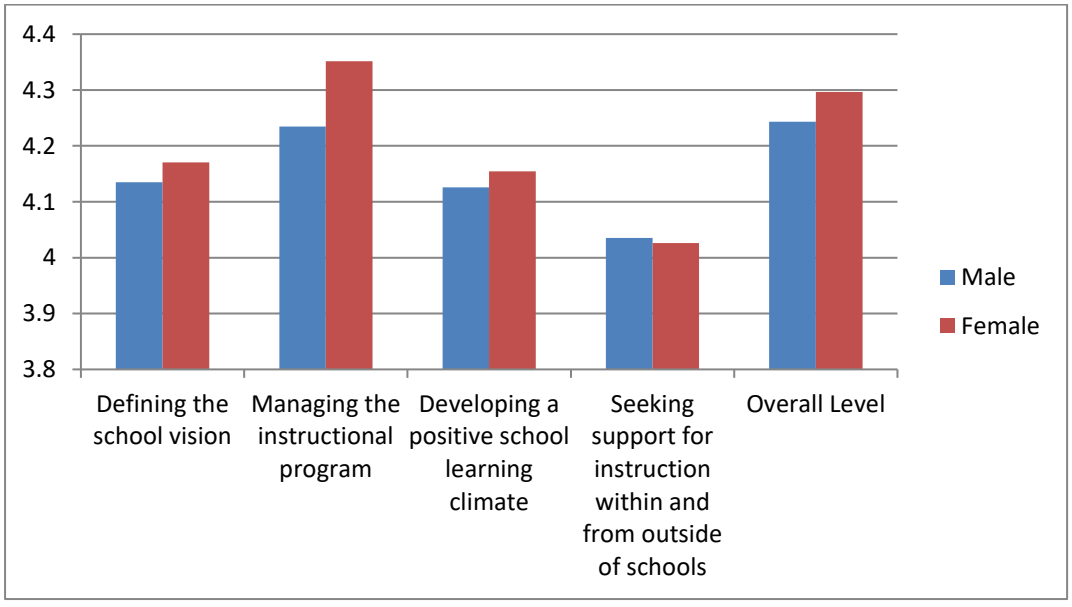

Figure 17. Cross-Tab Results of Gender and Teachers' Perceptions of Principal Instructional

Leadership

As shown in Figure 18, teachers who are older than 55 rated their principals lower than other age groups, while the youngest teachers gave the highest scores. This may reflect the respect and admiration that young teachers have for their principal, while older ones are almost retired and provide a more real evaluation.

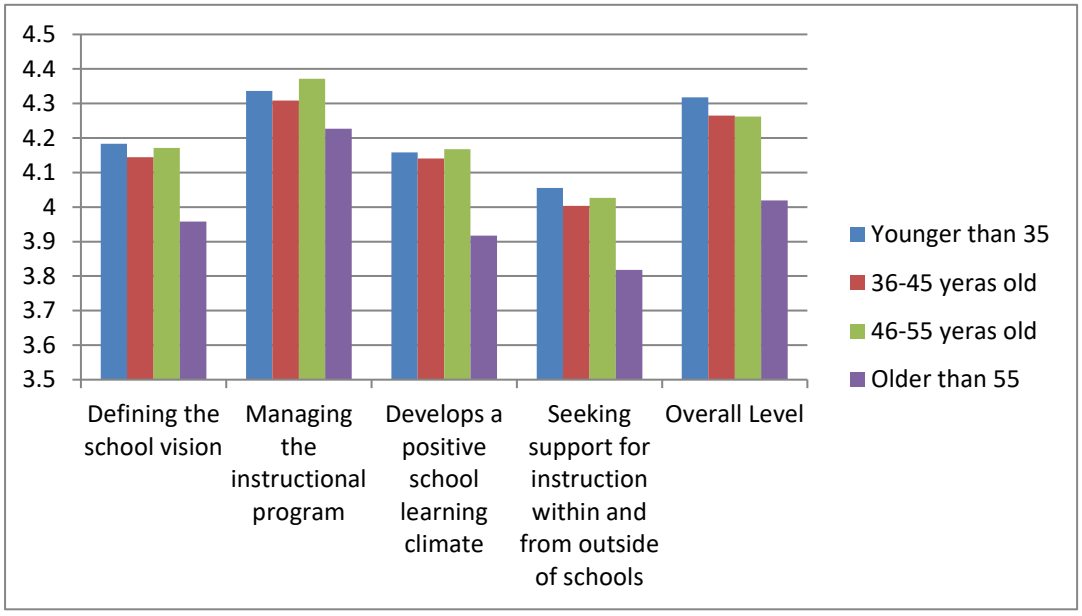

Figure 18. Cross-Tab Results of Age and Teachers' Perceptions of Principal Instructional Leadership

According to the results presented in Figure 19, the dimension of developing a positive school learning climate has clearly lower scores than other dimensions and the overall level. This may reflect the need for improvement of the school climate. In general, teachers who have less teaching experience rate their principals more highly.

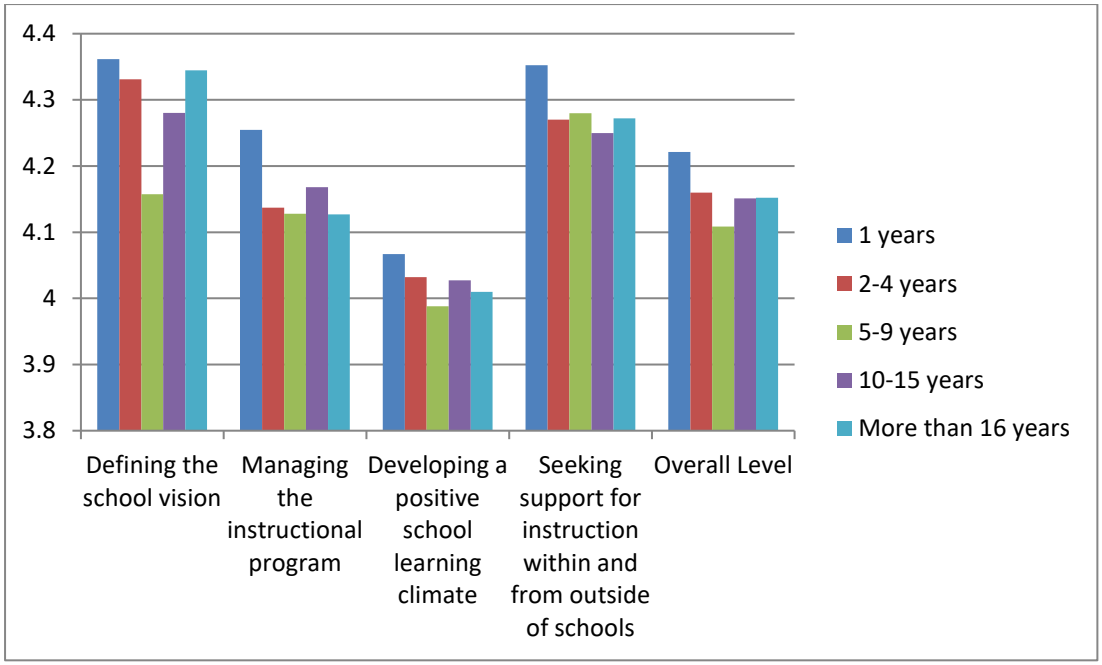

Figure 19. Cross-Tab Results of Teaching Experience and Teachers' Perceptions of Principal Instructional Leadership

5.2 Results of Instrument Validation: Second Phase

5.2.1 Reliability of Measures

Cronbach's alpha reliability test is a widely used method to determine the reliability level of instrument. This study adopts Cronbach's alpha scores to test whether the employed instrument is reliable or not. The overall level and the four dimensions of PIMRS and MIMRS were used to test three parties (principal, middle instructional leaders, and teachers). Based on the results of the pilot test, item 8 was not included in the survey of the main study. For the principal's own complete form (Chinese PIMRS 59 items), a Cronbach alpha reliability value is 0.947. The PIMRS short version was measured by 21 items and 31 items. Cronbach alpha was 0.900 and 0.931. The alpha coefficient for the measure of dimension 1 is 0.806; dimension 2 is 0.788, and dimension 3 and dimension 4 are 0.857 and 0.856 respectively (see Table 15). The lowest coefficient that appeared on dimension 2 of principals is 0.788 and is acceptable (Nunnally, 1978).

Table 15

Cronbach's a reliability results (N=1840)

Cronbach's a	PIMRS59	PIMRS31	D1	D2	D3	D4	PIMRS21
Principal (n=132)	.947	.931	.806	.788	.857	.856	.900
Teacher (n=978)		.952	.853	.777	.917	.904	.927
		MIMRS27	D1	D2	D3	D4	
Mid-instructional leaders (n=730)		.931	.763	.726	.895	.809	

Note: PIMRS=Principal and teachers' rated on principal instructional leadership; PIMRS59=Principal self-rating on instructional leadership with in total 59 items from the original version 49 items and additional Li's 10 items; PIMRS31=Principals and teachers' rating on principal instructional leadership (31 items); PIMRS21= Principal and teachers' rating on principal instructional leadership (21 items); MIMRS27=Mid-instructional-leader rated their own instructional leadership (27 items).

The teacher short version of PIMRS contains 31 items for the revised version and 21 items for the original version, and the Cronbach's alpha reliability value is 0.952 for the first one and 0.927 for the second one (see table 15). The alpha coefficient for the measure of dimension 1 is 0.853; dimension 2 is 0.777, dimension 3 is 0.917, and dimension 4 is 0.904. The lowest coefficient that appeared on dimension 2 of teachers is 0.777, which is acceptable (Nunnally, 1978).

Middle instructional leaders' own instructional leadership was measured by 27 items. The Cronbach alpha reliability value is 0.931. The alpha coefficient for the measure of dimension 1 is 0.763; dimension 2 is 0.726, and 0.895 and 0.809 for dimension 3 and dimension 4. The lowest coefficient which appeared on dimension 2 of middle leaders is 0.726 is acceptable (Nunnally, 1978).

5.2.2 Construct Validity Test: Confirmatory Factor Analysis Model Fit Report

A series of confirmatory factor analyses were performed by Mplus Version 7 (Muthen and Muthen, 2010) to examine the structure of the original version of PIMRS, and the revised version of PIMRS with 10 additional item questions by WLSMV estimator. The results show

that the 31-items construct is better than the 21-items construct from principals' and teachers' data in both pilot and main study, according to the comparison of model fit indexes such as RMSEA and CFI (see Table 9 and Table 16). CFI is greater than 0.90 on three levels as a reasonable fit, and it is greater than 0.95 on the middle instructional leader level, indicating a good model fit (Browne & Cudeck, 1993; Hu & Bentler, 1999). In addition, RMSEA is less than .08, which suggests a reasonable model fit (Browne & Cudeck, 1993; Schreiber et al, 2006). In the current study, RMSEA of the principals are 0.070, which indicated a reasonable model fit. RMSEA estimate for teacher and middle instructional leaders' data is 0.080 and 0.083 which is close to the cutoff point. Moreover, many researchers such as Steiger (1990) suggest that less than 0.1 is a mediocre fit (Browne & Cudeck, 1993; Byrne, 1998; MacCallum, Browne, and Sugawara, 1996) and acceptable.

Table 16
Main Study of CFA Results for 132 Primary and Secondary Schools

	Chi-square	**DF**	**P value**	**RMSEA**	**CFI**	**TLI**
Principals (n=132)						
31 items	704.863	428	0.0000	0.070	0.946	0.941
21 items	313.583	186	0.0000	0.072	0.949	0.942
Teachers (n=978)						
31 items;	3118.256	426	0.0000	0.080	0.936	0.930
21 items	1757.961	183	0.0000	0.094	0.933	0.923
Middle leaders (n=730)						
27 items	1886.681	312	0.0000	0.083	0.950	0.944

Note: 1) Estimate= WLSMV. 2) 27 items of middle leaders is self-rating instructional leadership behaviors. 3) CFI, comparative fit index; RMSEA, root mean square error of approximation.

Below is the factor loading of the Chinese teacher version of PIMRS's 31 items. From table 17, it is found that all factor loadings of items are greater than 0.4; the lowest is 0.51. Therefore, all the items are retained in the main study, and the 31-item construct is preferred to conduct the further analyses because the model has better model fit.

Table 17

PIMRS Chinese Version Teacher 31 items factor loadings

Items	Factor Loading
D1: Defining the School Vision	
1. Develop a focused set of annual school-wide goals	.74
2. Use data on student performance when developing the school's academic goals	.69
3. Develop goals that are easily understood and used by teachers in the school	.80
4. Develop school uniqueness and plan	.83
5. Communicate the school's mission effectively to members of the school community	.86
6. Refer to the school's academic goals when making curricular decisions with teachers	.86
D2:Managing the Instructional Program	
7. Ensure that the classroom priorities of teachers are consistent with the goals and direction of the school	.67
9. Make clear who is responsible for coordinating the curriculum across grade levels	.66
10.Draw upon the results of school-wide testing when making curricular decisions	.51
11. Participate actively in the review of curricular materials	.74
12. Develop school-based curriculum around school uniqueness	.76
13. Meet individually with teachers to discuss student progress	.76
14. Use tests and other performance measure to assess progress toward school goals	.51
D3: Developing a positive school learning climate	
15. Encourage teachers to use instructional time for teaching and practicing new skills and concepts	.81
16. Take time to talk informally with students and teachers during recess and breaks	.81
17. Attend/participate in extra- and co-curricular activities	.75
18. Compliment teachers privately for their efforts or performance	.66
19. Acknowledge teachers' exceptional performance by writing memos for their personnel files	.80
20. Create professional growth opportunities for teachers as a reward for special contributions to the school	.76
21. Lead or attend teacher in-service activities concerned with instruction	.83
22. Set aside time at faculty meetings for teachers to share ideas or information from in-service activities	.81
23. Promote regular school-based research activities	.78
24. Promote classroom teaching reform through multi-methods (e.g., invite teaching experts to come for lectures)	.71

Items	Factor Loading
25. Recognize superior student achievement or improvement by seeing in the office the students with their work	.69
26. Contact parents to communicate improved or exemplary student performance or contributions	.74
D4: Seeking support for instruction within and from outside of schools	
27. Empower middle leaders with a focus on leadership team development	.88
28. Promote staff relationship	.90
29. Build partnership with other schools to promote teaching development	.88
30. Be actively involved in district activities and regularly report school work	.87
31. Maintain policy connection with district supervisors	.83
32. Increase parental involvement and community support on teaching activities	.82

5.2.3 Predictive and Criterion Validity

In addition to the construct validity, the criterion validity, which aims to examine whether the new instrument could have same predictive effects like the original one, is important to conduct as well. Instructional leadership's positive impact on teaching practice has been consistently confirmed. Consequently, the scores collected by PIMRS, which represent instructional leadership, should correlate to the level of performance of teaching practice. The original version of PIMRS (with 22 items) and the Chinese version of PIMRS (with 31 items) were assessed separately. Before conducting the linear regressions, two plots were performed. The results of the plots present a normal distribution of data. For the original version (see table 18), the predictive relationship is significant (F=402.211, P=.000***). The value of R^2 is .267, which means 26.7% of variance can be explained. The adjusted R^2 value is .266, which indicates about a 53% probability to predict teachers' classroom practice. Furthermore, the results of the Chinese version show the significant relationship between instructional leadership and teaching practice (F=505.139, P=.000***). The value of R^2 is .313, which can be explained by 31.3% of the variance. Approximately 63% probability of predicting teachers' classroom practice corresponds to the adjusted R^2 value of .313. From the results, it can be concluded that both versions of PIMRS are significant in predicting teaching practices, and the Chinese version can explain more variance.

Table 18
Predictive/criterion validity of Principal instructional leadership on teaching practice

PIMRS	R^2	Adjusted R^2	F	P
Original version 22 items	.267	.266	402.211	.000***
Chinese version 31 items	.313	.313	505.139	.000***

This chapter presents the results of instrument validation of the second phase. Based on these results, the revised version of PIMRS, which successfully combines the 31 items of the original PIMRS model with Li's approach, meets the requirements of being a good instrument in terms of reliability and validity. The item 10 and 14 from the original PIMRS construct had indicated low factor loading in the pilot study; however, it was found to be .51 in the main phase, satisfying the requirements of factor loading (>0.4 or significant). Although there may be discrepancies between theory and empirical practice, these two items were based on the original form and validated in the pilot interviews in the Chinese context; the factor loading was slightly lower but still satisfying in the main phase. Unless the items were contradictory with the new context, the original framework was preferred to be kept. Therefore, these items were retained in the Chinese adaptive version of PIMRS and adopted for further analyses.

5.3 Test of Hypothesis 1

The first hypothesis is that Chinese principals' self-report of instructional leadership is higher than teachers' perception of principal instructional leadership. The purpose of this study is to test the perceptual differences on an individual level, which is to pair the principal with each teacher in the same school. Since principals and teachers from the same school are matched as the paired data, the paired sample T-test was adopted to investigate the perceptual differences as nested data. The individual level pair was used because the number of teachers is nine times greater than that of principals, and the sample schools are relatively large in size.

If a school level pair was adopted, then teachers' scores from the same school would need to be averaged to one single score, which would lose a great number of variances at the individual level. This way would result in a non-existing dummy teacher who in fact could not represent the teachers from the whole school. Pairing principal and teachers at the individual level can better represent the situation in reality because the relationship of the principal with each teacher does exist. The results are presented in Table 19 and Figure 20. At the overall level, it appears that principals rated themselves (M=4.182) a little bit higher than teachers' perception (M=4.163), and no significant difference is found at total levels. A similar situation is found on the dimension of seeking support for instruction within and from outside of schools: Principals' self-rating (M=4.308) is higher than teachers' perception (M=4.286). No statistical difference is found on this dimension. Moreover, teachers overrate were found on two dimensions: principals' self-rating (M=4.303) is lower than teachers' perception (M=4.328) on the dimension of defining the school vision. The second dimension is the managing of the instructional program. The principals' self-rating (M=4.098) is lower than teachers' evaluations (M=4.149). Therefore, until this stage, at the overall level and three dimensional levels, principals' self-ratings were not significantly higher than teachers' perception. There are gaps between the two parties, which, however, are small. Based on this evidence, concerning the first hypothesis, the results are not supportive.

There are one more dimensions left for paired sample T-test analyses, and the comparison between the means of the two parties is significant. "Developing a positive school learning climate" is the third dimension within PIMRS. Through data analysis, it is clear that the principals' self-rating (M=4.108) is higher than the teachers' rating (M=4.028), and the difference is significant (p=.000). As a result, the first hypothesis is supported on this dimension.

In sum of the analysis for the first hypothesis, based on the evidence so far, it is unlikely to find patterns in the results. Generally, the perceptual difference between the principals' self-rating and the teachers' evaluation is small. On the dimensions of defining the school vision and managing the instructional program, the principals' scores on instructional leadership performance are lower than the teachers' evaluations. The rest presents the opposite results: Principals' self-ratings are higher than teachers' perception. To be more specific, this is the case at the overall level and the dimensions of developing a positive school learning climate and seeking support for instruction within and from outside of schools. Finally, the first hypothesis is only supported at the dimension of developing a positive school learning climate that principals' self-rating is significantly higher that teachers' evaluations. Based on these results, the first hypothesis is partially supported (see Table 19).

Table 19
T-test results of dimensions and overall scores between principals' self-rating and teachers' evaluations

Variables/ Dimensions	Mean/SD		T	SIG (one-tailed)	Hypothesis 1 supported or not
	Principals	Teachers			
D1:Defining the School Vision	4.303/.435	4.328/.552	-1.190	.883	*No*
D2:Managing the Instructional Program	4.098/.457	4.149/.527	-2.359	.991	*No*
D3: Developing a positive school learning climate	4.108/.449	4.028/.588	3.700	.000**	*Yes*
D4: Seeking support for instruction within and from outside of schools	4.308/.488	4.286/.587	.979	.164	*No*
Overall: principal Instructional leadership	4.182/.386	4.163/.497	1.013	.156	*No*

Note. ** = $p < 0.01$; *= $p < 0.05$; † = $p < 0.10$.

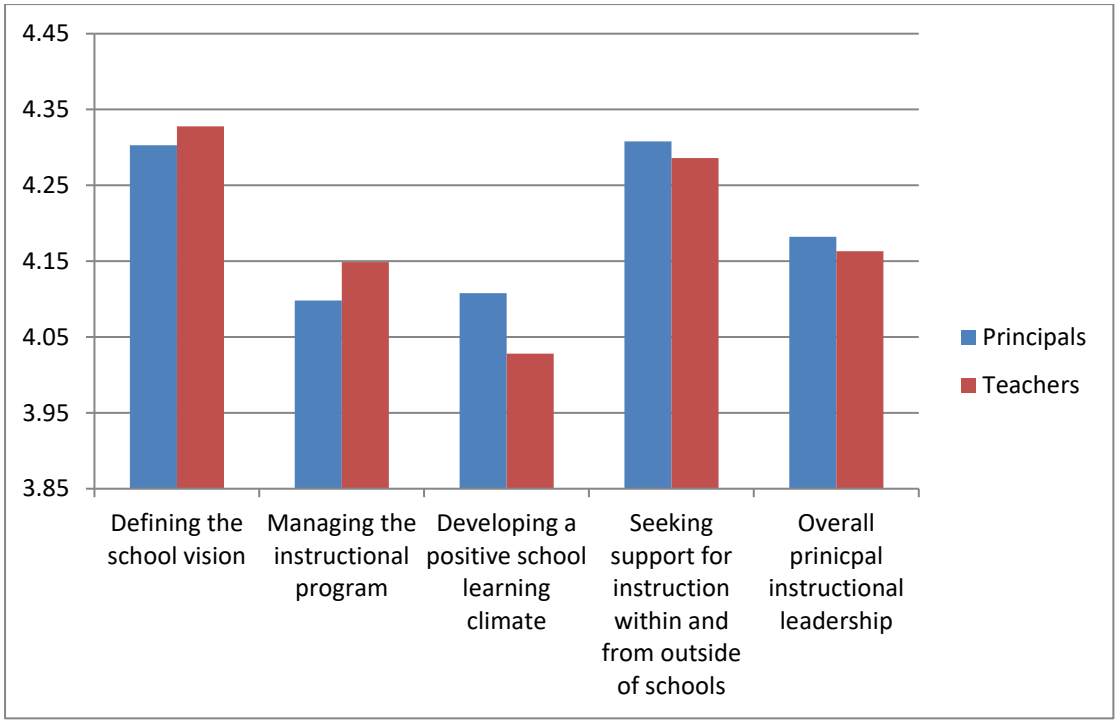

Figure 20. Comparison of Principals' Self-rating and Teachers' Perceptions of Principal Instructional Leadership

5.4 Test of Hypothesis 2

The second hypothesis is to test whether PD moderates the perceptual discrepancy of instructional leadership between principals and teachers, such that principals rate themselves higher than teachers do when PD orientation is low (H2a), whereas principals rate themselves lower than teachers do when PD orientation is high (H2b). The participants were categorized into four subgroups by a cross combination between PD (high and low) and roles (principal and teacher) by the mean scores of their self-reported PD. Accordingly; a paired t-test was performed to compare principals' and teachers' perceptions on principal instructional leadership when the PD of both parties is controlled. The principals' perception of PD (M=1.977) is significantly lower than the teachers' perception (M =2.315, P=.000).

The detailed results in the following paragraphs are summarized in Tables 20 and 21. When principals reported higher PD (M $\geqslant$ 1.977), teachers rated principals significantly higher

than the principals' self-rating on the dimension of defining school vision (teacher, M=4.317; principal, M=4.239; p=.009), the dimension of managing the instructional program (teacher, M=4.134; principal, M=3.983; p=.000), the dimension of seeking support for instruction within and from outside of schools (teacher, M=4.229; principal, M=4.227; p=.014), and the overall level (teacher, M=4.089; principal, M=4.026; p=.001). The only insignificant comparison between the means of the two parties when the principals' high PD is controlled is the dimension of developing a positive school learning climate (teacher, M=4.011; principal, M=4.045; p=.252). Based on these findings, the second hypothesis is largely supported when principals' PD is controlled as high.

When principals reported low PD (M < 1.977), they rated themselves significantly higher than teachers at the overall level and the three dimensional levels. In detail (see Table 20), on the dimension of managing the instructional program, the teachers' mean scores on evaluating the principals' instructional leadership performance is 4.169, while the mean of the principals' self-rating is 4.249 and the significant p value .008. The next one to show similar results is the dimension of developing a positive school learning climate (teacher, M=4.050; principal, M=4.190; p=.000). Moreover, the fourth dimension, seeking support for instruction within and from outside of schools, presents the following results: The teachers' mean on evaluating the principals' performance of instructional leadership is 4.269; the mean of the principals' self-rating is 4.415, and the significant p value is .000. Thus far, regarding three out of four dimensions it is found that the principals' self-ratings are higher than the teachers' evaluations, and the differences are significant. The only insignificant comparison between the mean of the two parties is found on the dimension of defining the school vision (teacher, M=4.343; principal, M=4.386; p=.168). Although no significant difference is found on this dimension, the principals' self-rating is still higher than the rating by the teachers. The last comparison in this group is the overall level. Here, the principals' self-rating is significantly

higher than the teachers' perceptions (teacher, M=4.176; principal, M=4.285; p=.000). Based on these results, the second hypothesis is largely supported within this group when principals' PD is low.

However, when PD reported by teachers was high (M ≥2.315), generally speaking, principals rated themselves higher than the teachers rated them, and the differences are found to be significant on the dimension of developing a positive school learning climate (teacher, M=4.010; principal, M=4.127; p=.000) and a the overall level (teacher, M=4.136; principal, M=4.199; p=.019). Moreover, on dimensions of defining the school vision and seeking support for instruction within and from outside of schools, although no significant differences are found, principals' self-rating is higher than that of teachers. The mean of the principals' self-rating is 4.320, while the mean of the teachers' evaluation is 4.281 on the dimension of defining the school vision. Moreover, the mean of the principals' self-rating is 4.304, while the mean of teachers' evaluation is 4.249 on the dimension of seeking support for instruction within and from outside of schools. On the dimension of managing the instructional program, the difference between the two parties is very small at .001, and the principals' self-rating is slightly lower than the teachers' evaluation. Based on these results, the second hypothesis in this group is rejected.

The last group categorized by power distance is low PD reported by teachers. In general, principals' self-rating is lower than teachers' evaluations. Particularly on the dimensions of defining the school vision and managing the instructional program, principals' self-rating is significantly lower than teachers' evaluations. The mean of principals and teachers on the dimension of defining the school vision is 4.287 and 4.371 respectively, and the p value is .005. The mean of principals and teachers on the dimension of managing the instructional program is 4.068 and 4.165 respectively, and the p value is .001. The rest dimensions,

including the overall level, are not found to have significant differences. To be more specific, on the dimension of seeking support for instruction within and from outside of schools (teacher, M=4.320; principal, M=4.312; p=.804) and at the overall level (teacher, M=4.188; principal, M=4.166; p=.390), the principals' self-rating is still lower than the teachers' perceptions. However, on the dimension of developing a positive school learning climate, the principals' self-rating is higher than the teachers' rating (teacher, M=4.045; principal, M=4.090; p=.119). This is not an isolated case but a regular pattern: All principals' self-rating on the dimension of developing a positive school learning climate is higher than the teachers' evaluations, no matter if power distances were reported by principals or teachers. This pattern aligns with the results of analyses from the first hypothesis. Based on what has been reported so far in this paragraph, the second hypothesis in this group is rejected.

To sum up, the second hypothesis is largely supported with PD reported by principals, but not with PD reported by teachers. Specifically, when principals reported high PD, their self-ratings on instructional leadership were significantly lower than teachers' ratings on the total level of instructional leadership and on the dimensions of defining school vision, managing instructional programs, and seeking support for instruction within and from outside of schools; when principals reported low PD, their self-ratings on instructional leadership were significantly higher than teachers' ratings on the overall and dimensional levels of managing the instructional program, developing a positive school learning climate, and seeking support for instruction within and from outside of schools.

Table 20

Paired t-test between principals and teachers' rating grouped by PD rated by principals

	Mean						Hypothesis 2
Variables	Principals	Teachers	*N*	*T*	DF	SIG	supported or not
High Power distance rated by principal							P<T
D1: Defining the School Vision	4.239	4.317	554	-2.629	553	.009**	*Yes*
D2: Managing the	3.983	4.134	554	-5.165	553	.000**	*Yes*

Instructional Program							
D3: Developing a positive school learning climate	4.045	4.011	554	1.146	553	.252	*No*
D4: Seeking support for instruction within and from outside of schools	4.227	4.299	554	-2.468	553	.014*	*Yes*
Overall: principal Instructional leadership	4.104	4.154	554	-1.967	553	.049*	*Yes*
Low Power distance rated by principal							P>T
D1: Defining the School Vision	4.386	4.343	424	1.382	423	.168	*No*
D2: Managing the Instructional Program	4.249	4.169	424	2.653	423	.008**	*Yes*
D3: Developing a positive school learning climate	4.190	4.050	424	4.509	423	.000**	*Yes*
D4: Seeking support for instruction within and from outside of schools	4.415	4.269	424	4.166	423	.000**	*Yes*
Overall: principal Instructional leadership	4.285	4.176	424	4.088	423	.000**	*Yes*

Note. ** = $p < 0.01$; *= $p < 0.05$; † = $p < 0.10$.

Table 21

Paired t-test between principals and teachers' rating grouped by PD rated by teachers

	Mean						Hypothesis 2
Variables	Principals	Teachers	*N*	*T*	DF	SIG	supported or not
High Power distance rated by teacher							P<T
D1: Defining the School Vision	4.320	4.281	468	1.227	467	.221	*No*
D2: Managing the Instructional Program	4.131	4.132	468	-.010	467	.992	*No*
D3: Developing a positive school learning climate	4.127	4.010	468	3.674	467	.000**	*No*
D4: Seeking support for instruction within and from outside of schools	4.304	4.249	468	1.673	467	.095	*No*
Overall: principal	4.199	4.136	468	2.347	467	.019*	*No*

Instructional leadership							
Low Power distance rated by teacher							P>T
D1: Defining the School Vision	4.287	4.371	510	-2.853	509	.005**	*No*
D2: Managing the Instructional Program	4.068	4.165	510	-3.260	509	.001**	*No*
D3: Developing a positive school learning climate	4.090	4.045	510	1.562	509	.119	*No*
D4: Seeking support for instruction within and from outside of schools	4.312	4.320	510	-.249	509	.804	*No*
Overall: principal Instructional leadership	4.166	4.188	510	-.861	509	.390	*No*

Note. ** = $p < 0.01$; *= $p < 0.05$; † = $p < 0.10$.

5.5 Test of Hypothesis 3

In order to test hypothesis 3, middle leaders' instructional leadership can positively impact on the perceptual differences between principals and teachers concerning principal instructional leadership, a series of Pearson Correlation tests was performed to determine whether the second hypothesis is accepted or rejected. Table 22 shows the results in detail. All analyses were conducted at three threshold levels, which are 01, 05, and .1 significance level. The value of scores collected from principals' self-rating minus scores collected from teachers' evaluations are the scores of the rating gap between the two parties (see Table 22). Then, Pearson Correlations were conducted between middle leaders' instructional leadership performance and the gap between principals and teachers.

The results of data analysis show positive and significant correlations between the instructional leadership performed by middle leaders and the perceptual gaps between principals and teachers on both the overall level (β=.179**) and the dimensional levels. Three of four dimensions were significant at .01 level, namely .159**, .175**, .115** on the first,

third, and fourth dimension respectively. Moreover, on the dimension of managing instructional program, instructional leadership performed by middle leaders is significant at .05 level and positively correlated with the perceptual differences between principals and teachers, which is .065*. The positive relationships suggest that if more instructional leadership were performed by middle leaders, the rating gap between principals and teachers would increase slightly. In other words, the more middle leaders performed instructional leadership, the larger the gap would be. Based on this evidence, the third hypothesis is supported.

Table 22
Pearson Correlation results of dimensions and overall scores between mid-leaders' instructional leadership (MIL) and perceptual differences of principals and teachers (PDPT) (N=978)

Variables/Dimensions	Mean/SD		β	SIG	Hypothesis 3 supported or not
	MIL(IV)	PDPT(DV)			
D1:Defining the School Vision	3.851/.390	-.026/.676	.159	.000**	*Yes*
D2:Managing the Instructional Program	4.070/.284	-.050/.668	.065	.041*	*Yes*
D3: Developing a positive school learning climate	3.982/.323	.080/.674	.175	.000**	*Yes*
D4: Seeking support for instruction within and from outside of schools	3.918/.385	.022/.713	.115	.000**	*Yes*
Overall: mid-leaders Instructional leadership	3.968/.301	.019/.582	.179	.000**	*Yes*

Note. ** = $p < 0.01$; *= $p < 0.05$; † = $p < 0.10$.

Tables 23 and 24 present the results of partial correlations between middle leaders' instructional leadership (MIL) and perceptual differences of principals and teachers (PDPT) controlled by principals' and teachers' PD respectively. Compared with Table 22, the results of the partial correlation analyses in Tables 23 and 24 were similar to the outcomes of the correlation test. Principals' and teachers' PD were controlled in turn. The correlation coefficient was changed slightly, but the significant results stayed the same on both the

overall level and the dimension level. Therefore, middle leaders' instructional leadership practices were found to have a positive correlation to principal-teacher perceptual gaps on all dimensions and the overall level with considering cultural influence. Specifically, the significant level was changed from .05 to .01 in the dimension of managing instructional program when principals' reported PD was controlled. When teachers' PD was controlled, middle leaders' instructional leadership practices were found to have the exact outcomes as the results of the previous person correlation. In sum, a positive relationship was found between middle leaders' instructional leadership practices and the principal-teachers' rating gaps. Therefore, hypothesis 3 is fully supported. Based on these findings, interpretations and discussions of the results are elaborated in the following chapter.

Table 23

Partial Correlation results of dimensions and overall scores between mid-leaders' instructional leadership (MIL) and perceptual differences of principals and teachers (PDPT) controlled by principal's power distance (PPD) (N=978)

	Mean/SD				
Controlled variable: PPD	1.977/.550				
Variables/Dimensions	Mean/SD		β	SIG	Hypothesis 3 supported or not
	MIL (IV)	PDPT(DV)			
Moderator: PPD (CV)					
D1:Defining the School Vision	3.851/.390	-.026/.676	.160	.000**	*Yes*
D2:Managing the Instructional Program	4.070/.284	-.050/.668	.082	.010*	*Yes*
D3: Developing a positive school learning climate	3.982/.323	.080/.674	.176	.000**	*Yes*
D4: Seeking support for instruction within and from outside of schools	3.918/.385	.022/.713	.130	.000**	*Yes*
Overall: mid-leaders Instructional leadership	3.968/.301	.019/.582	.187	.000**	*Yes*

Note. ** = $p < 0.01$; *= $p < 0.05$; † = $p < 0.10$.

Table 24

Partial Correlation results of dimensions and overall scores between mid-leaders' instructional leadership (MIL) and perceptual differences of principals and teachers (PDPT) controlled by teachers' power distance (TPD) (N=978)

	Mean/SD				
Controlled variable: TPD	2.315/.698				
Variables/Dimensions	Mean/SD		β	SIG	Hypothesis 3 supported or not
	MIL (IV)	PDPT(DV)			
Moderator: TPD (CV)					
D1:Defining the School Vision	3.851/.390	-.026/.676	.157	.000**	*Yes*
D2:Managing the Instructional Program	4.070/.284	-.050/.668	.064	.044*	*Yes*
D3: Developing a positive school learning climate	3.982/.323	.080/.674	.175	.000**	*Yes*
D4: Seeking support for instruction within and from outside of schools	3.918/.385	.022/.713	.115	.000**	*Yes*
Overall: mid-leaders Instructional leadership	3.968/.301	.019/.582	.179	.000**	*Yes*

Note. ** = $p < 0.01$; *= $p < 0.05$; † = $p < 0.10$.

Chapter 6: Discussion and Conclusions

The purpose of this chapter is to interpret the results of the last two chapters. In general, this study has pioneered an instructional leadership study by examining principal instructional leadership practice in Chinese schools. It anchors a standpoint from an angle of perceptual differences between principals' and teachers' assessments of principals' instructional leadership practices. A conceptual framework includes power distance, and middle instructional leaders are further established based on the literature. This chapter is largely developed by results, interpretations of research questions, research hypotheses, and unexpected findings. Limitations, implications, and recommendations for future studies are included.

6.1 Descriptive Analysis Results

Scores collected from PIMRS can be used to learn the level of instructional leadership performance by principals. Based on the results of descriptive analysis, the high level of performance of principals' instructional leadership from sample schools are consistent with previous studies (e.g., Zhao & Song, 2014). Moreover and generally speaking, principals in this sample have respectable instructional leadership performance both in the eyes of teachers and their own (see Table 19 in Chapter 5). In contrast to the high-level performance of instructional leadership on other dimensions, the dimension of developing a positive school learning climate produced the lowest scores in evaluations by both principals and teachers. The results suggest a weakness in school learning climate building and further imply that principals should allocate more effort to promoting a school-wide learning climate among teachers. Moreover, this is not the only area where the dimension of developing a positive school learning climate was found unsatisfying. The issue emerges several times in the following discussions.

6.1.1 School Size and Level of Instructional Leadership Performance

School size is considered a factor that can affect the level of principal instructional leadership performance. Based on the data analysis, this study supports the conclusion that school size is a critical contextual factor that influences the degree of principal instructional leadership performance. This is consistent with the assumption that large schools need stronger instructional leadership. In the case of this study, there are four levels of school size: less than 500, 501–1000, 1001–2000, and more than 2000. As shown in Figure 6 in 5.1.1, nearly all the dimensions and the overall level of scores on PIMRS present a similar pattern: With the increase of school size, principal instructional leadership performance also increases. The results further indicate that leading and managing the large size of schools requires strong principal instructional leadership. It is further implied that other approaches of principal leadership may be more evident in large schools than in smaller ones.

6.1.2 Gender and Level of Instructional Leadership Performance

Scholarly studies of gender-related issues in educational contexts in terms of leadership and management are not new. In the current study, gender is adopted as a variable to determine the level of instructional leadership performance among male and female principals. Generally, there are far more male principals (72%) than female principals (28%) while there are much far more female teachers (80%) than male teachers (20%). This is the second time the phenomenon appears; a similar situation emerged in the sample of the pilot test. However, at the middle leadership level, the proportion between males (41.8%) and females (58.2%) is more balanced. Considering the teacher population of the two genders, the percentage of male teachers becoming middle leaders is much higher than that of female teachers. The large number of male principals in the sample indicates that male middle leaders enjoy more opportunities to be promoted from middle leaders to principal. Together, these results suggest

that it is more difficult for female teachers to become school principals than for male teachers. This finding is also true in Western schools. The numbers of female school leaders lag far behind those of male principals. For example, in 2004, only about one-third of school principals in England were female, compared with 56% of all secondary teachers (DfE, 2006). Therefore, it can be implied that a male-dominated culture in terms of school leadership still prevails today.

The two genders perceive and assess principal instructional leadership differently. Male and female principals self-report different scores on PIMRS. Generally, based on the results of this study, female principals self-report a higher level of performance than male principals do on PIMRS. The results support the conclusions of Hallinger's (2011) and Hallinger, Li, and Wang's (2016) studies that female principals are more active than male principals in instructional leadership. Other scholars, such as Krüger et al. (2007), have consistently reported that female principals are found to be leaders who reward teachers more and who are more involved in educational activities such as setting school goals or creating a positive school culture and learning atmosphere. Although female principals show stronger performances in instructional leadership than their male peers, the differences are small, of which the largest is less than 0.1.

Similar patterns in terms of gender also emerge between male and female middle instructional leaders. Most female middle instructional leaders are more active than their male counterparts on three out of four dimensions and the overall level of PIMRS. One exception was found on the dimension of defining the school mission, where male middle leaders scored slightly higher than females. This is probably because females are more attentive to details and therefore focus less on large and abstract goals and missions.

From the perspective of teachers, the story of gender continues to have an effect. Perhaps

because this is not a time to perform but to perceive, female teachers sense more of their principals' instructional leadership practice than male teachers do on nearly all the dimensions of PIMRS. This evidence indicates that female teachers are more sensitive to principal instructional leadership behaviors, an inclination that may still influence them later when they become middle leaders and principals. This is one way to explain why female principals' instructional leadership performance continuingly scores higher than that of male principals.

6.1.3 Age and Level of Instructional Leadership Performance

Data analysis reveals that age is the last factor that affects the patterns of instructional leadership practice in the sample schools. Based on the results, the strength of principals' instructional leadership performance decreases with their age. In particular, the group of principals younger than 35 years self-reports the strongest level of performance in instructional leadership. However, the level of instructional leadership performance drops rapidly when moving into the second age group, 35–45 years old, and remains on a similar level till the last age group. Moreover, the second rapid drop in the level of instructional leadership performance was found in the oldest age group, older than 55 years. Considered together, these findings reveal a regular pattern in the effect of the principals' age on their instructional leadership performance: The older they become, the lower scores they self-report on PIMRS.

A similar pattern also arises from the cross comparisons between age and instructional leadership performed by middle instructional leaders. The youngest age group, younger than 35 years, displays the strongest instructional leadership practice on all dimensions and the overall level of PIMRS. Moreover, the level of instructional leadership performance begins to drop rapidly as it moves into the second age group, except on the dimension of defining the

school missions. Exactly as the principals, the second rapid drop of instructional leadership performance by middle leaders emerges in the last age group, older than 55 years.

Age also appears to be an important factor in contributing to the effect of teachers' perceptions of principal instructional leadership performance. The pattern shaped by teachers' age is surprisingly similar to previous findings about principals and middle leaders. Generally, the youngest age group of teachers is most sensitive to the performance of instructional leadership by principals. The two following age groups, 36–45 years old and 46–55 years old, remain almost at the same level with the prior age group on perceiving principal instructional leadership practice. Unsurprisingly, the same configuration occur a third time: The oldest age group perceives the least degree of instructional leadership performed by principals. As shown in Figure 18 in section 5.1.1, scores reported on the age group older than 55 drop rapidly. In fact, this age group perceives the lowest scores on every dimension of PIMRS. These results all indicate that with advancing age, people tend to become more insensitive to both the performance and perception of instructional leadership. This implies that senior principals may need external motivations and that younger principal candidates should receive more opportunities for promotion. The practical meaning of these findings resides in the value of senior principals' receiving regular evaluations from different sources and in the realization that principalship should not be a lifelong tenure.

6.1.4 Identifying Middle Instructional Leadership in Chinese Schools

Through descriptive analysis, this study is able to pinpoint six types of middle instructional leaders in Chinese schools. Instructional assistant principal, instructional director, research director, grader leaders, and subject leaders are identified as middle instructional leaders. In total, they make up nearly 85% of the entire middle instructional leadership population in the sample of the main study (see Table 13). The sixth type, the *shuji* (party branch secretary), to

my surprise, assumes instructional leadership responsibilities. Data sets from pilot and main studies reveal a similar percentage of this type of middle instructional leaders, 10.5% and 15.1% respectively (see Table 6 and Table 13). That even the party branch secretary is actively involved in instructional leadership responsibilities further implies Chinese schools' strong focus on instruction. Who are middle instructional leader were vaguely defined in the literature. The results of this study shed light on the identification of middle instructional leaders in Chinese schools.

Although this study has acknowledged six types of middle instructional leaders, it is logical to assume that they have different instructional focuses and expertise. For example, the instructional assistant principal should focus on the overall school instructional matter, while subject leaders center on the detailed pedagogy and knowledge of a specific subject. Due to the exploratory nature of this research, it is not possible to further promote the boundary distinctions among the six types of middle instructional leaders. This is a research direction for future studies.

6.2 The Revised PIMRS

One contribution of this study resides in the value of instrument validation provided by the revised version of PIMRS (see appendix A). Although the core of school education remains the same, and the original PIMRS has been widely proven as both reliable and valid, the instrument needed to be updated here because it was used in a different cultural context, China. The purpose of revision was not to break the construct structure but to add new items in order to improve its capacity to represent the uniqueness of a Chinese educational context and instructional leadership practice. This goal was achieved by blending in Li's (2015) conceptual framework of Chinese principal instructional leadership. As the most recent construct focusing on principal instructional leadership in China, Li's in-depth qualitative

study provides comprehensive descriptions of instructional leadership performed by Chinese principals (see Figure 2). After cross-checking PIMRS and Li's framework, it was found that the latter overlaps with the former, but that nine instructional leadership functions identified by Li's framework are not found in PIMRS. Consequently, they are considered the characteristics of Chinese principal instructional leadership. Moreover, an additional measuring item was added based on qualitative data analysis in the first phase.

The revised PIMRS was empirically shown to have a higher level of reliability and model fit than the original PIMRS version (see tables 8, 9, 15 and 16). The result not only proves that the revised PIMRS is a reliable and valid instrument but also partially validates Li's (2015) framework. It further indicates that the revised PIMRS can better represent the practices of Chinese instructional leadership. In this respect, the current study contributes to the literature with a decent measurement for Chinese principal instructional leadership. Moreover, based on the practice of foreign instrument adaptation in this study, it is implied that scholars should be more cautious when employing instruments that are not indigenously developed, especially in cross-cultural contexts. Local characteristics should be incorporated into the instrument adaptation. This step may be vital because knowledge now is globalized, and each culture can contribute to the international communities with its own uniqueness.

6.3 First Hypothesis: Perceptual Discrepancy between Principals and Teachers

This section elaborates the results regarding the first hypothesis. Based on previous findings that principals' self-rating on instructional leadership performance is significantly higher than teachers' evaluations, this study proposed the first hypothesis. However, the results of paired t-tests reject the hypothesis on three out of four dimensions and the overall level. The dimension of developing a positive school learning climate is the only place where the first hypothesis is supported. Based on these results, the perceptual differences between principals'

self-rating and teachers' perception on evaluating principal instructional leadership are relatively small.

The findings disagree with most recent literature in this regard (e.g., San Nicolas, 2003; Henderson, 2007). Specifically, this study found that Chinese principals' and teachers' rating of principal instructional leadership were fairly close on overall level and most dimensional level, but principals generally still rated themselves higher than teachers did. In particular, the dimension of developing a positive school learning climate is the most salient dimension in this case. Moreover, this study argues that the initial conclusion, that there is little perceptual difference between principals and teachers on principal instructional leadership, for two reasons cannot be hastily generalized to a Chinese school context.

First, with regard to the principals' perspective, in a nation with a rich Confucian heritage, it is likely that Chinese principals tend to be humble when asked to self-assess their instructional leadership practice. The strong sense of humility can increase along with age. Following this interpretation, senior principals may have lower self-ratings on their own instructional leadership practice than younger principals. This assumption can be supported by examining the relationship between the principals' age and the self-rating scores on their own practice of instructional leadership. As shown in Figure 9, the variances among principals of different age groups are large. The results present a general pattern that along with the increase of age, self-rating scores on instructional leadership decrease. In this regard, it is possible that the sense of humility may reduce the influence of inflated-self-rating, given the evidence that self-rating is often inflated (e.g., Yammarino & Atwater, 1997). This line of argument proposes a possible reason why the first hypothesis is largely rejected.

Second, it is also reasonable to interpret the results from the teachers' perspective. As followers, due to respect and admiration, teachers may overrate their principals' performance

of instructional leadership. Although this study does not have direct evidence at this stage to support this assumption, the possibility cannot be denied. This is especially the case when principals are older, serve at a large school, and have more years of experience as principals (Sinnema, et al, 2015). This argument can help explain why the teachers' evaluation of the principals' performance of instructional leadership is significantly higher than the principals' self-rating.

The above two reasons are not incompatible. When they work together, the perceptual disagreement between principals and teachers can be reduced because principals are humble and reduce self-rating inflation, and teachers show respect to their principals by overrating. Because inflation is pulled down and overrating pushed up, it is possible that the actual rating gap between principals and teachers on assessing principal instructional leadership is hidden beneath the surface.

To conclude, the results of comparing principals' self-rating and teachers' evaluations on the performance of principal instructional leadership are far from a simple pattern and explanation. On one dimension, principals' self-rating is significantly higher than the teachers' evaluation. Moreover, scores of principals' self-rating on PIMRS are only slightly higher than those of the teachers' evaluations on overall level and one dimensional level. The seemingly inconsistent pattern of comparisons between the two parties is in great contrast with previous, Western studies. This not only infers that unexpected factors may play a part in irregularities; more importantly, it is highly possible that both principals and teachers are influenced by factors such as the cultural and organizational conditions proposed in this study. Whether it is the principals' inclination to be humble or the teachers' to be respectful, these are key characteristics of Chinese culture and school systems. The following section interprets the results regarding power distance as one key dimension of culture adopted to moderate the

relationships between the two parties in the second hypothesis.

6.4 Second Hypothesis: Cultural Influence on the Perceptual Discrepancy between Principals and Teachers

Having established arguments and explanations in the last section, it is likely that the results of the close rating between principals and teachers on principal instructional leadership may not indicate that their perspectives on performing and perceiving instructional leadership coincide. Cultural factors may contribute to reducing the perceptual gap observed in scores collected from both principals and teachers. As proposed in Chapter 2, power distance as a critical dimension of culture is adopted to further differentiate principals and teachers into four different groups, namely high and low power distance reported both by principals and teachers. Based on this categorization, paired t-tests were performed for each group. This time, the variances of the two parties' scores on assessing the instructional leadership performed by principals were generally much larger, as assumed, and certain patterns emerged from the results.

To begin with, significant differences were found between principals' and teachers' rating of principal instructional leadership when the PD of both parties was controlled. Specifically, when reporting high PD, principals' self-rating overall and on the dimensions of defining school vision, managing instructional program, and seeking support for instruction within and from outside of schools were significantly lower than the teachers' scores. This confirms my prior arguments in the development section of the hypotheses in Chapter 2: Due to deference and even fear, teachers may be more aware of their principals' instructional leadership behaviors and rate their principals higher. Moreover, the Chinese society places a high expectation on leaders' moral conduct (Li & Shi, 2005), and powerful authorities are found to act with benevolence and moral integrity (Farh & Cheng, 2000). With the awareness of high

PD in the school setting, principals are thus more likely to rate themselves lower than teachers do because they may have internalized the high moral expectation of school leaders and apply a higher rating standard to their own instructional leadership practice.

In contrast, when reporting lower PD, principals' self-ratings are significantly higher than the teachers' rating on dimensions of managing the instructional program, developing a positive school learning climate, seeking support for instruction within and from outside of schools, and at the overall level. One possible reason is that low-PD principals prefer influencing teachers through personal connections; they allow different perceptions on instruction decisions because they want to build equal relationships with teachers. However, principals are greatly outnumbered by teachers, such that it is quite difficult for them to establish an effective relationship with every teacher, and it may take more time to reach a shared agreement or school vision. Consequently, teachers can only sense their contribution, which is much smaller than their principals' overall effort in instructional leadership. Moreover, the results support the findings in Western literature that when principals' PD is low, their self-rating of principal instructional leadership is significantly higher than teachers' evaluations. This is probably because most Western countries are low-PD countries; similar cultural conditions to the subgroups regarding power are created when PD is manually controlled. The results once again imply the critical role of cultural conditions in the age of globalization.

In addition to the PD reported by principals, that rated by teachers is used to test the perceptual gap between principals and teachers on principal instructional leadership. However, contrary to the second hypothesis, when reporting high PD, teachers rated principals significantly lower on the dimensions of developing school learning climate and overall instructional leadership than principals did; when reporting low PD, teachers rated

principals significantly higher on the dimensions of defining school vision and managing instructional program. To a certain extent, the results make sense, as teachers perceiving high PD are more role-oriented and may cling to what they perceive as given to them; they may be passive and insensitive to principals' leadership practices and rate principals lower. Moreover, the large leader-follower distance and low frequency of direct interaction may also contribute to the perceptual gap (Antonakis & Atwater, 2002). With low PD, followers (teachers) may prefer stronger connections with their leaders (principals) (Tyler, Lind, & Huo, 2000), which allow teachers more opportunities to approach principals with a better understanding of principals' instructional leadership behaviors. Thus, they rate their principals higher on instructional leadership.

To briefly conclude, based on the results of the second hypothesis, it is confirmed that cultural conditions (in this case, power distance) play a critical role in determining the perceptual difference between principals and teachers in assessing principals' performance on instructional leadership. Four subgroups are differentiated by the high and low power distance of both parties. In accordance with the assumption, the second hypothesis is largely supported when principals' PD was controlled as either high or low: The rating gaps between the two parties become statistical differences on most dimensional levels. This indicates that the results of a general comparison of the two parties' ratings in the first hypothesis may not only attribute that the principals' performance of instructional leadership is difficult to perceive by teachers. However, the differences between principals and teachers in perceiving principal instructional leadership are concealed before the involvement of power distance as the moderator.

Additionally, the second hypothesis is supported when principals' PD is treated as the moderator. As the leader in the seat of power within his or her school, a principal's

inclinations towards power distance affect not only themselves but the whole school, especially in shaping the school culture or climate, because a principal has the ability to influence many (Herman, Gates, Chavez-Herrerias, Harris, 2016). From this perspective, the current study supports the argument that principals today still hold the key to promoting school success.

When teachers' PD is treated as a moderator to group research subjects, results not only suggest the rejection of the second hypothesis but also produce few significant differences between principals and teachers in the perception of instructional leadership performed by principals. In this respect, teachers' perceived PD is less influential in determining the perceptual gaps with principals. However, this implies that teachers can actively adjust themselves in order to better understand what is happening in their schools.

In sum, power distance, the results of the same variable, showed the different effects with principals and teachers. It was supported by the previous literature that school principals have greater influence over school than individual teachers (Herman, Gates, Chavez-Herrerias, Harris, 2016). While teachers' influence indeed has been acknowledged, the degree, particularly on individual level, cannot match that of principals. The evidence from the current study suggests that high power distance orientation, coupled with authority, expertise and moral standards, may be more realistic and helpful for school principals to cultivate such a school climate.

6.5 Third Hypothesis: Organizational Impact on Perceptual Discrepancy between Principals and Teachers

The perceptual differences between principals and teachers in assessing principals' performance of instructional leadership may be fundamentally caused by the hierarchical structure of schools. In Chapter 2, this study established a line of discussion regarding

organizational structure as a possible reason to explain the rating gap. In this respect, previous studies that focus on the perspective of self, such as principals' age and efficacy, may not be effective to further explicate the perceptual gap created by school hierarchy. Following this logic, this study proposes the organizational structure and key personnel in key positions as possible reasons to impact the self-other rating differences between principals and teachers on principal instructional leadership performance. Based on above discussions and arguments, the third hypothesis is proposed.

To be more specific, school middle leaders are employees of promise who are theoretically expected, as alternative instructional leaders, to link principals and teachers by performing principals' functions of instructional leadership. If the hypothesis is supported, middle leaders' instructional leadership practice should be positively correlated with the perceptual differences of principals and teachers in terms of scores, because the more instructional leadership responsibilities they perform, the fewer there are for their principals. In other words, the higher the instructional leadership scores of middle leaders, the larger the gap between principals and teachers in assessing principal instructional leadership. According to the results from the last chapter, the third hypothesis is supported.

Middle leaders have been given much hope in the literature of becoming the force that promotes school instructional success as principals' helpers. The support of the third hypothesis suggests that the hierarchical structure of schools is a cause of the perceptual gap between principals and teachers. As a result, the more middle leaders' perform instructional leadership, the larger the gap, because teachers would not ascribe instructional leadership performance by middle leaders to principals. In this respect, middle leaders take up functions of performing instructional leadership in order to extend principals' time and expertise.

Moreover, the results of the partial correlation tests are similar to those of the correlation tests.

Principals' and teachers' PD were controlled in turn. First, when principals' PD was controlled, middle leaders' instructional leadership practices were still found to have a positive correlation to principal-teacher perceptual gaps on all dimensions and the overall level. Second, when teachers' PD was controlled, middle leaders' instructional leadership practices were found to have the exact outcomes as when teachers' PD was not controlled: Positive correlations were found between the middle leaders' instructional leadership practices and the principal-teacher rating gaps. These results further confirm the indication made in the last paragraph that the more middle instructional leadership performed instructional leadership, the less principals would perform. This statement can be supported by the dimension of managing instructional programs, which was found to have significant correlations to principal-teacher perceptual gaps when principals' PD was controlled. Due to deference and even fear, high PD principals may be perceived better by followers, including middle instructional leaders. Consequently, middle leaders may perform more instructional leadership behaviors. Following the same logic, the principal-teacher perceptual gaps were enlarged in this case because middle instructional leaders perform a higher level of instructional leadership.

Having providing this evidence that middle leaders contribute to the perceptual gap between principals and teachers, the question remains what can be done to reduce the perceptual gap between principals and teachers. Clearly, one way to reduce it is to replace school hierarchical layers with more flattening organizational arrangements, because a leader's effectiveness depends on the approachability to his or her followers (Antonakis & Atwater, 2002). For small schools, this is a possible method because it is easier for them to reduce the distance between principals and teachers by removing one layer of hierarchy. It is affordable for principals of small schools to personally manage more instructional leadership responsibilities.

However, this method may be difficult for large schools because teachers are grouped into departments by instructional education and functions, and layers of hierarchy are necessary. This arrangement naturally creates distance between principals and teachers, meaning social and physical distance by the concept of frequent and direct interaction between leader and followers (Bass, 1990). Due to the hierarchical structure, the physical distance between principal and teachers is evident and almost impossible to remove, particularly in large schools. Then, the hope falls to reducing social distance, through which principal and teachers can also be better connected. Principals can intentionally create informal scenarios in order to promote mutual communication with teachers, such as an open-door policy and regular meetings with individual teachers.

In addition to principals, middle instructional leaders can also make an effort to better connect principals and teachers. They can reduce the perceptual gap between principals and teachers not only by performing responsibilities as instructional leaders but also, more importantly, by conveying the hidden value and meaning behind their leadership behaviors, in a direction from front manager to true leaders.

6.6 Unexpected Findings

6.6.1 Instructional Leadership: Developing a Positive School Learning Climate

The low scores on the dimension of developing a positive school learning climate from both principals' self-reports and teachers' evaluations are unexpected. The dimension is the third subscale under PIMRS's construct of instructional leadership, and it constitutes half of the entire scope of PIMRS. Therefore, this dimension has great value because effective schools require a culture that encourages and rewards behaviors that align with school goals (Heck & Hallinger, 2010). Moreover, school culture has become a critical school-level contextual factor that is widely accepted as an effective force in promote teachers' improvement (Marks

& Printy, 2003). Consequently, school culture building, as theorized in PIMRS as the dimension of developing a positive school learning climate, should have received practical attention in daily school operations as one of the priorities. However, evidence collected from the sample disagrees.

As shown in Table 19, both principals' and teachers' scores on the dimension of developing a positive school learning climate are the lowest within the PIMRS construct. Moreover, the teachers' rating on this dimension is lower than that of the principals. This initial result suggests that principals' performance of instructional leadership on school learning climate building is relatively weak. It further implies that a school-wide learning climate may also be weak in sample schools. Moreover, the scores on this dimension are also different at the school level: Primary school principals have higher scores on developing a positive school learning climate than secondary schools. Additionally, principals elder than 55 who reported the lowest scores on this dimension, only about 3.83 (See figure 9).

The results indicate that principals do not pay much attention to establishing a learning climate. This may be the reason that a learning climate is an indirect way to promote school outcomes, while direct methods are more preferred. Moreover, teachers give principals' performance on promoting a learning climate the lowest scores of all of the PIMRS dimensions. This results in the largest perceptual gap between principals' self-rating and teachers' evaluation. In fact, the gap is so large that it even becomes statistically significant in the paired T-test comparisons between principals' self-rating and teachers' evaluation (see Table 19). The first hypothesis is only supported on this dimension. Together, these results indicate not only those principals have weak performance on the dimension of developing a positive school learning climate but also that teachers have trouble perceiving principals' efforts to promote a learning climate.

6.6.2 The Issue of Experience in Different Positions

It is surprisingly to find in this study that longer years of teaching experience do not necessarily make principals stronger instructional leaders. Working and teaching experience have been important criteria in selecting potential future principals in China. The value of teaching experience resides in its requirement for principalship (MoE, 2013). The results from the collected data show that all principals have at least 2–4 years of teaching experience, and many of them have very long experience as teachers. In fact, more than half of the surveyed principals (51.5%) have more than 16 years of teaching experience. Principals' rich teaching experience may afford them a deeper understanding of the nature of instruction and curriculum, due to which they can be recognized as teaching experts to coach teachers. Following this argument, principals with more teaching experience should outperform, in terms of instructional leadership practice, those with less experience. Surprisingly, as shown in Figure 12 in section 5.5.1, principals with different levels of teaching experience do not display large differences in the performance of instructional leadership. Moreover, the third group (5–9 years) unexpectedly reported the highest scores on all dimensions and the overall level of PIMRS. The results indicate that teaching experience does not contribute to different levels of instructional leadership performance, implying that teaching experience as a standard in selecting school principals may be overemphasized. Other skills and abilities, such as leadership, management, and communication, might be more crucial.

The different number of years of being principal does affect the level of instructional leadership performance (see Figure 11), but there is no regular pattern emerging from the results of cross-comparisons. It seems that nearly every group of different years of experience as principals has a chance to outperform the rest of the groups. Moreover, those with 2–4 years of experience report the highest scores on all the dimensions and the overall level of

PIMRS. The irregular fluctuation of instructional leadership performance levels may be a result of principals' unstable personal growth and professional development. Principals' professional development in instructional leadership may be self-depending

Years of being principal for the current school present a surprisingly complex picture, as shown in Figure 10. The longer a principal stays in a particular school, the better he or she understands the teachers. Moreover, along with the growth of experience as instructional leaders, the principals' level of instructional leadership is expected to grow in a linear fashion. However, the data shows a seemingly irregular pattern when the level of instructional leadership practices and the principals' years of being principal for the same school are cross-compared. Finally, a "low and high" dyadic pattern emerges from data analysis. Specifically, all dimensions of PIMRS are at a relatively low level of instructional leadership performance when principals only have one year's working experience at their current school. After that, the amount of instructional leadership performance rockets to almost the highest level when principals have 2–4 years of working experience within their current schools. Interestingly, the level of instructional leadership performance reported by later experience groups drops to nearly the same level or even lower than that of principals who have had only one year of working experience in their current schools. After that, the level of instructional leadership performance rises again to the highest level. In total, there are two low levels and two high levels of instructional leadership performance. This pattern emerges on all the dimensions and the overall level of PIMRS. The shifts may indicate that principals' occasionally try new things, which requires more instructional attention.

6.7 Limitations

The results of this study are limited by the sample and operations. First, the sample of the pilot test was small in the first phase, particularly the principal sample, which was only 15.

As a result, construct validation could not be performed on this sample set. In order to cope with this limitation, the sample set from the second phase also underwent scale validation to determine whether the instrument used in this study is reliable and valid.

Second, although the focus of our research was on perceptual differences, and this study adopted a multiple-source evaluation technique to collect data from both principals and teachers on principal instructional leadership and power distance, self-report may not accurately describe the phenomenon of interest, especially power distance orientation.

The third limitation is subject to the single-province data collection, which limits the generalizability of the findings for the whole country. The total number of 132 Chinese principals, 730 middle instructional leaders, and 978 teachers as research participants seems large; however, future studies may need to recruit participants from different locations across China.

The last limitation resides in the general restriction of the cross-sectional nature of data, which only depicts one moment of phenomena (Hussey & Hussey, 1998). Given the fact that power distance is one component of culture, the phenomenon intertwined with principals and teachers practicing and perceiving instructional leadership is complex and multifaceted. In this respect, future studies may consider using longitudinal data or mixed methods to address the issues in greater depth to explore how cultural conditions affect the interactions between principals and teachers and whether other factors contribute to the relationship.

6.8 Implications and Recommendations for Future Studies

6.8.1 Theoretical Implications

First, this study adapted the PIMRS questionnaire to Chinese characteristics by including ten items from Li's (2015) framework and pilot interviews. In this way, the conceptual

framework of instructional leadership was extended to a four-dimensional model, which is further empirically supported as reliable and valid. Moreover, the model has a stronger model fit than the original PIMRS, indicating that the revised PIMRS reflects Chinese principal instructional leadership better. The instrument enables future studies with an evidence-based conceptual framework and corresponding measurement to examine the practices and concept of instructional leadership in a Chinese educational context.

Second, power distance, as one aspect of culture, was hypothesized as able to impact the principal-teachers' perceptual gaps. The data analysis indicates that PD, as expected, moderates the relationships between principals and teachers. The results further imply that future researchers should take other cultural factors into account when comparing principals' and teachers' rating of principal instructional leadership. Moreover, the cultural propositions in terms of power distance were only supported by the PD reported by principals, not by teachers; thus, teachers' standpoints need more theoretical examination and attention in future studies. Teachers' individual-level factors should be emphasized because teachers are a critical force in today's school improvement (York-Barr & Duke, 2004).

Third, instructional leadership performed by middle leaders is hoped to influence the principal-teacher rating differences in the conceptual framework. Data analyses support the theoretical assumption. The results indicate that instructional leadership performance by middle leaders is positively and significantly related to the perceptual differences between principals' self-rating and teachers' evaluations. This suggests that the more involved middle leaders are in performing instructional leadership, the larger the rating gap between principals and teachers. The results also reveal that middle instructional leadership does indeed take on principals' instructional leadership responsibilities, adding value to the school's instructional leadership performance. This finding echoes qualitative interview data from the first phase

that principals intentionally distribute instructional leadership responsibilities to middle leaders. Moreover, instructional leadership functions performed by middle instructional leaders on behalf of principals indirectly support the practice of distributed leadership in Chinese schools.

To conclude, this study argues that the principal-teacher rating disagreement between principals and teachers on assessing principal instructional leadership is hidden beneath the surface. Specifically, the rating difference between the two parties is small by direct comparison on nearly all dimensions and the overall level of the revised PIMRS. However, based on the discussion so far, the results cannot be said to reveal that there is no self-other rating difference between Chinese principals and teachers by direct comparison, and they should not be hastily generalized into a Chinese educational context. The findings of PD and middle instructional leaders are evidence of impact on the principal-teacher rating differences. Consequently, it is highly possible that other factors, for example, the rest dimensions of culture, contribute to the perceptual gaps between principals and teachers. It is theoretically indicated that other forces be conceptualized for the issue to be examined. Furthermore, the results produced by the sample in this study provide strong evidence that theoretical inferences should be cautiously made in cross-cultural and societal contexts.

6.8.2 Practical Implications

Based on the findings, this study has several implications for the practice of instructional leadership in Chinese schools on principal development, leadership effectiveness and school improvement. The first group of practical implications that can be drawn from my study relates to principal development. By adopting multi-sources evaluations, principals are given the opportunities to learn their leadership performance in teachers' perception and further conduct comparisons (Sinnema, et al, 2015). They may experience cognitive dissonance at

the perceptual disparities of the self-other rating differences, which further trigger motivation to change (Goff et al., 2014). In the current study, the dimension of developing a positive learning climate received the largest variance between principals' self-rating and teachers' evaluation. Compared to other dimensions, the principals' rating on this dimension was significantly higher than that of teachers, and the score 4.028 was the lowest among all dimensions and the overall level. This can be shocking information for principals to learn since none of the 15 principals in the interview of the first phase mentioned promoting a learning climate as a challenge. Together, this suggests that it is urgent for schools in my sample and perhaps more schools in China to build an effective school culture that can facilitate information flow between principals and teachers. Therefore, more practical attention should be devoted to building a collaborative school climate because it is critical for long-term school improvement and teachers' professional development. Chinese principals should pay more attention to developing a collaborative learning culture. With this information, the goals for principal development can be specific and targeting further principal development.

Moreover, in terms of policy making, the large variance between principals' self-rating and teachers' evaluation on the dimension of developing a positive learning climate suggest that principals may not deem efforts on school culture building as important, since currently it is not specifically required in their job description. Therefore, principals should be required to cultivate a school culture that facilitates leadership effectiveness and school capacity improvement. School culture establishment and maintenance should be considered a part of the principal evaluation program.

The second implication is leadership effectiveness. The effectiveness of principal instructional leadership depends heavily on promoting perceptual congruence between the

principal and teachers (Goff, Guthrie, Goldring, & Bickman, 2014; Park & Ham, 2014). Based on this argument, future evaluation and principal leadership development programs targeting Chinese principals should not rely on the information of one side only. In order to improve their leadership effectiveness, principals should seek understanding of their leadership performances by collecting opinions from teachers. It is also worth noting for policy makers that multi-sources principal evaluation programs should be implemented on a regular basis. Moreover, principals should develop stronger sense of self-awareness to reactions of teachers towards the principal instructional leadership practices, and further lead discussions around the causes and consequence of the discrepancy (Sinnema, et al, 2015). It is critical for teachers to perceive the quality of leadership because it is a key determinant of trust between principals and teachers (Halverson et al. 2005).

Moreover, traditionally in multi rater evaluations, principals are often given a feedback report of self-other rating differences and are expected to take follow-up actions to minimize the self-other rating differences for leadership development (Goff, Guthrie, Goldring, & Bickman, 2014). However, the results of the current study suggest that, without taking cultural factors into account, the self-other differences may be minimal or even negative on some occasions. Such feedback reports can be problematic or misleading because minimal differences or even negative self-other differences in instructional leadership between principals and teachers do not necessarily mean that instructional leadership at a school is effective; instead, the differences could be obscured by cultural influence. Specifically, when high power distance is reported, principals need to find methods for teachers to approach them; whereas teachers need to go beyond their limitations and actively engage the larger school environment. When low power distance is reported, principals have to increase their awareness and establish rules or standards for teachers to follow rather than depending on personal influence; as for teachers, they need to stay together for collaborative work and learning. For policy makers,

training programs for both principals and teachers should provide more information and workshops on the influence of power distance and other dimensions of cultural values.

Similarly to power distance with regard to interpreting the close self-other rating differences between principals and teachers, organizational structure in terms of middle instructional leaders is found to have practical values drawn for leadership effectiveness. Many scholars have argued that instructional leadership is a collaborative responsibility, and principals should distribute their instructional leadership responsibilities to middle leaders; however, the findings of my study indicate that the more middle leaders are engaged as instructional leaders, the less teachers can perceive their principals' performance on instructional leadership. Therefore, principals should not distribute all instructional leadership responsibilities, particularly those core instructional functions, and try to increase visibility and approachability for teachers in order to create more channels for interaction. Moreover, principals need to purposefully create opportunities for teachers to learn what is going on outside of their classroom rooms, informing them in a proper and timely manner.

The last implication of this study lies in school improvement. The key areas for school improvement reside in perceptual gaps between principals and teachers in performing and perceiving instructional leadership. To begin with, large perceptual gaps may indicate low trust, poor teamwork, and incoherence in schools (Bryk & Schneider, 2002). In particular, when teachers give their principals a low rating on principals' leadership performances, they may view their principals as incapable of promoting improvement efforts; on the other hand, overrating principals may not facilitate information feedback within the school hierarchy (Sinnema, et al, 2015). In order to improve school performance, principals and teachers need to work together for the parts where incongruences occur. Moreover, trust plays a critical role in school improvement for the relationship between principals and teachers (Bryk et al. 2010).

Principals, especially those who over rate themselves, are facing mistrust by teachers (Sinnema, et al, 2015). They need to re-establish their image as being capable for the challenging environments and promote two ways of information flow. Last, for policy makers, additional support for principals from outside of schools, particularly local educational bureaus, are helpful for school improvement. Workshops designed and operated by local educational bureaus can include principals and teachers from different schools together to examine the issue of perceptual disparities in terms of improvement. Self-reflections and comparison with others can increase awareness, and further propose possible solutions.

6.8.3 Recommendations for Future Research

First, future studies could use this adapted version of PIMRS to study instructional leadership. Based on the foundation of the revised PIMRS, the instrument can be applied to other provinces and cities of China to examine the practice of principal instructional leadership, either qualitatively or quantitatively.

Second, the study found that the cultural proposition is supported by PD reported by principals but not PD reported by teachers. Although this study has offered a number of explanations for the results, it would be very helpful to test these propositions concerning principals' moral integrity, leader benevolence, and actual interaction between principals and teachers in future studies.

Third, the current study suggests that future studies place their research focus on topics related to school learning climate. The dimension of developing the school learning climate was found to have the lowest scores from the data collected. This implies that the level of principals' performance on school learning climate is weak and certainly requires more research investigation and practical attention.

Last but not least, the results concerning middle instructional leaders suggest that future research examining the performance or impact of instructional leadership at schools should not be limited to the instructional leadership of principals alone; instead, middle instructional leaders' practices need to be examined as well. Together with the instructional leadership performed by principals, middle instructional leaders' responsibilities add to the level of school instructional leadership. As an important extension of principal instructional leadership, middle leadership should not be left unexamined.

6.9 Conclusion of the Thesis

This study examines the issue of principal-teacher rating gaps on principal instructional leadership in a Chinese educational context. Power distance and middle instructional leaders are hypothesized to determine the discrepant perceptual relationship between principals and teachers. The three major key findings are the following: First, by direct comparison of the principals' instructional leadership, principals rated themselves significantly higher than teachers rated them on the dimension of developing a positive school learning climate. Second, PD can moderate the self-other rating differences between principals and teachers when principals' PDs are controlled. Last, instructional leadership performed by middle leaders is positively correlated to the described perceptual gaps between principals and teachers. In addition to the examination of the proposed hypotheses, the characteristics of Chinese principal instructional leadership performance are reported. In conclusion, this study has properly pioneered the first study concerning perceptual differences in the one-to-one relationship between principals and teachers in China. The current study answers the call for more research from different cultures that includes empirical evidence toward investigating the issue of self-other rating disagreement. It is hoped that this exploratory study will draw interest from both policymakers and practitioners in learning about principal-teacher perceptual differences and possible consequences of principal leadership improvements,

leadership effectiveness, and school improvements. The findings of this study produce new understanding and extend the boundaries of knowledge to where the existing literature is barren.

References

Abrevaya, S., & White, J. (2009). *Obama administration announces historic opportunity to turn around nation's lowest-achieving public schools.* Retrieved from http://www.ed.gov/news/pressreleases/2009/08/08262009.html

Ackerman, G., & Brockner, J. (1996). *Comparing the role of voice in the People's Republic of China and the United States: The mediating effect of power distance*. New York, N.Y: Center for International Business Education, Columbia University.

Act, E. S. S. (2015). Pub. L. No. 114-95. In 114th Congress.

Act, N. C. L. B. (2001). United States Department of Education. *Public Law*, 107-110.

An. C. F. (2008). Jiaoxue fuxiaozhang yao jianshou jiaoxue zhuzhandi [Instructional assistant principal should stay in the battlefield of classroom]. *Theory and Practice of Education*. 6, 26.

Antonakis, J. & Atwater, L. (2002). Leader distance: a review and a proposed theory. *The Leadership Quarterly, 13*, 673-704.

Antonioni, D. (1994). The effects of feedback accountability on upward appraisal ratings. *Personnel Psychology*, *47*(2), 349-356.

Atwater, L. E., & Yammarino, F. J. (1992). Does self-other agreement on leadership perceptions moderate the validity of leadership and performance predictions? *Personnel Psychology*, *45*(1), 141-164.

Atwater, L. E., & Yammarino, F. J. (1997). Self–other rating agreement: A review and model. In G. R. Ferris(Ed.), *Research in Personnel and Human Resources Management* (pp. 121–174). Greenwich, CT: JAI Press.

Atwater, L. E., Ostroff, C., Yammarino, F. J., & Fleenor, J. W. (1998). Self-other agreement: Does it really matter? *Personnel Psychology, 51*(3), 577–598.

Atwater, L., Roush, P., & Fischthal, A. (1995). The influence of upward feedback on self - and follower ratings of leadership. *Personnel Psychology*, *48*(1), 35-59.

Atwater, L., Waldman, D., Ostroff, C., Robie, C., & Johnson, K. M. (2005). Self–other agreement: Comparing its relationship with performance in the US and Europe. *International Journal of Selection and Assessment*, *13*(1), 25-40.

Bamburg, J. D., & Andrews, R. L. (1990, April). *Instructional Leadership, School Goals, and Student Achievement: Exploring the Relationship between Means and Ends.* Paper presented at the Annual Meeting of the American Educational Research Association, Boston, MA.

Bao, C. Y. (2014). Cong jiaxin dao hexin: xuexiao zhongceng lingdaol de renshi yu peiyang [from filling to core: school middle leaders' understanding and development]. *Primary and Middle School Management, 3*, 4-6.

Barnett, K., & McCormick, J. (2004). Leadership and individual principal-teacher relationships in schools. *Educational Administration Quarterly*, *40*(3), 406-434.

Barth, R. S. (1990). *Improving schools from within: Teachers, parents, and principals can make the difference*. Jossey-Bass Inc., Publishers, San Francisco.

Bass, B. M. (1990). *Bass and Stogdill's handbook of leadership (3rd ed.)*. New York: Free Press.

Bass, B. M., & Yammarino, F. J. (1991). Congruence of self and others' leadership ratings of naval officers for understanding successful performance. *Applied Psychology*, *40*(4), 437-454.

Bass, J. (1989). *Instructional Leadership Activity of Elementary Principals in Effective Schools.* Blacksburg, Va.: Virginia Tech.

Bellibas, M. S., Bulut, O., Hallinger, P., & Wang, W. C. (2016). Developing a validated instructional leadership profile of Turkish primary school principals. *International Journal of Educational Research*, *75*, 115-133.

Bennett, N., Newton, W., Wise, C., Woods, P. A., & Economou, A. (2003). *The role and purpose of middle leaders in schools* (Nottingham, National Council for School Leadership). Retrieved from http://www. ncsl. org. uk/mediastore/image2/ lit-review-middle-leaders-full.pdf.

Berson, Y., & Sosik, J. J. (2007). The Relationship Between Self—Other Rating Agreement and Influence Tactics and Organizational Processes. *Group & Organization Management*, *32*(6), 675-698.

Blase, J., & Blase, J. (1999). Principals' instructional leadership and teacher development: Teachers' perspectives. *Educational Administration Quarterly*, *35*(3), 349-378.

Bolman, L. G., & Deal, T. E. (1992). Leading and managing: Effects of context, culture, and gender. *Educational Administration Quarterly*, *28*(3), 314-329.

Boothe, C. (2014). Instructional leadership styles of principals in primary and prepatory schools. (Unpublished master thesis). The University of the West Indies.

Bossert, S. T., Dwyer, D. C., Rowan, B., & Lee, G. V. (1982). The instructional management role of the principal. *Educational administration quarterly*, *18*(3), 34-64.

Brett, J. F., & Atwater, L. E. (2001). 360° feedback: Accuracy, reactions, and perceptions of usefulness. *Journal of Applied Psychology*, *86*(5), 930.

Brown, M., & Rutherford, D. (1999). A re-appraisal of the role of the head of department in UK secondary schools. *Journal of Educational Administration*, *37*(3), 229-242.

Brown, M., Boyle, B., & T. (2000). The shared management role of the head of department in English secondary schools. *Research in Education, 63*, 33-47.

Browne, M. W., & Arminger, G. (1995). Specification and estimation of mean-and covariance-structure models. In *Handbook of statistical modeling for the social and behavioral sciences* (pp. 185-249). Springer US.

Browne, M. W., & Cudeck, R. (1993). Alternative ways of assessing model fit. *Sage Focus Editions*, *154*, 136-136.

Brutus, S., Fleenor, J. W., & McCauley, C. D. (1999). Demographic and personality predictors of congruence in multi-source ratings. *Journal of Management Development*, *18*(5), 417-435.

Bryk, A. S., & Schneider, B. L. (2002). *Trust in schools: A core resource for improvement.* New York:Russell Sage.

Bryk, A. S., Sebring, P. B., Allensworth, E., Easton, J. Q., & Luppescu, S. (2010). *Organizing schools for improvement: Lessons from Chicago*. University of Chicago Press.

Burns N. & Grove S.K. (2005) *The Practice of Nursing Research: Conduct, Critique & Utilization*. Elsevier Saunders, St Louis.

Burns, J. M. (1978). *Leadership*. New York: Harper and Row.

Bush, T., & Glover, D. (2004). *Leadership development: Concepts and beliefs*. Nottingham: National College for School Leadership.

Byrne, B. M. (1998). *Structural equation modeling: basic concepts, application, and programming*. Lawrence Earlbaum Associated. Inc., Mahwah, NJ.

Byrne, B.M. (1998), *Structural Equation Modeling with LISREL, PRELIS and SIMPLIS: Basic Concepts, Applications and Programming*. Mahwah, New Jersey: Lawrence Erlbaum Associates

Chi, L.C. (1997). *Principal and teacher perceptions of principal instructional management behavior in Taiwan, Republic of China* (Unpublished doctoral dissertation). University of South Dakota, Bismarck, SD.

Church, A. H. (1997). Do You See What I See? An Exploration of Congruence in Ratings From Multiple Perspectives1. *Journal of Applied Social Psychology*, *27*(11), 983-1020.

Clarke, S., & O'Donoghue, T. (2017). Educational leadership and context: A rendering of an inseparable relationship. *British Journal of Educational Studies*, *65*(2), 167-182.

Coburn, C., & Russell, J. (2008). Getting the most out of professional learning communities and coaching: Promoting interactions that support instructional improvement. *Learning Policy Brief*, *1*(3), 1-5.

Coelli, M., & Green, D. A. (2012). Leadership effects: School principals and student outcomes. *Economics of Education Review*, *31*(1), 92-109.

Cohen, E. G., & Miller, R. H. (1980). Coordination and control of instruction in schools. *Pacific Sociological Review*, *23*(4), 446-473.

Council of Chief State School Officers. (2014). *2014 ISLLC Standards*. Washington, DC

Craig, S. B., & Hannum, K. (2006). Research update: 360-degree performance assessment. *Consulting Psychology Journal: Practice and Research*, *58*(2), 117.

Creswell, J. W. (2014). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches (4th ed.)*. Sage publications.

Crowther, F., Ferguson, M., & Hann, L. (2009). *Developing teacher leaders: How teacher leadership enhances school success*. Corwin Press.

Cuban, L. (1984). *How Teachers Taught: Constancy and Change in American Classrooms, 1890-1980.* Research on Teaching Monograph Series.

Cuban, L. (1988). *The managerial imperative and the practice of leadership in schools*. Suny Press.

Cui, Y. H. (2001). Xin kecheng "xin" zai hechu?---jiedu "Jichu jiaoyu kecheng gaige gangyao (shixing)" [what is "new" in the new curriculum reform?---unfolding The guideline of basic education curriculum reform (pilot version)]. *Research in Education Development*, 5-10.

Cui, Y. H., & Wang, X. Z. (2006). Ji chu jiaoyu kecheng gaige de yiyi jinzhan ji wenti [meanings, development, and problems of basic educational reform]. *Global Education, 35*, 1, 31-35.

Dai, G., Stiles, P., Hallenbeck, G., & De Meuse, K. P. (2007). *Self-other agreement on leadership competency ratings: The moderating effects of rater perspectives and rating ambiguity.* In Annual Meeting of the Academy of Management, Philadelphia, PA.

DeChurch, L. A., Hiller, N. J., Murase, T., Doty, D., & Salas, E. (2010). Leadership across levels: Levels of leaders and their levels of impact. *The Leadership Quarterly*, *21*(6), 1069-1085.

Den Hartog, D. N., House, R. J., Hanges, P. J., Ruiz-Quintanilla, S. A., Dorfman, P. W., Abdalla, I. A., & Akande, B. E. (1999). Culture specific and cross-culturally generalizable implicit leadership theories: Are attributes of charismatic/transformational

leadership universally endorsed? *The Leadership Quarterly*, *10*(2), 219-256.

Dennis, C. (2009). *The relationship between principals' self-perceptions and teachers' perceptions of high school principals' instructional leadership behaviors in South Carolina schools*. Unpublished doctoral dissertation, University of South Carolina, Columbia, SC.

Devos, G., Hulpia, H., Tuytens, M., & Sinnaeve, I. (2013). Self-other agreement as an alternative perspective of school leadership analysis: An exploratory study. *School Effectiveness and School Improvement*, *24*(3), 296-315.

Dickson, M. W., Den Hartog, D. N., & Mitchelson, J. K. (2003). Research on leadership in a cross-cultural context: Making process, and raising new questions. *Leadership Quarterly, 14*, 729-768.

Dillon, S. (2010). *Top test scores from Shanghai stun educators.* Retrieved from http://www.nytimes.com/2010/12/07/education/07education.html

Dimmock, C., & Walker, A. (2002). School leadership in context: Societal and organizational cultures. *The principles and practice of educational management*, 70-85.

Dimmock, C., & Walker, A. (2005). *Educational leadership: Culture and diversity*. London: Sage Publications.

Ding, Y. Z. (2011). Tigao zhongceng ganbu zhixingli [promote middle leaders' implementation capacity]. *Ideological & Theoretical Education, 8*, 67-69.

Dinham, S. (2007). How schools get moving and keep improving: Leadership for teacher learning, student success and school renewal. *Australian Journal of Education, 51*(3), 263-275.

Dorfman, P. W., & Howell, J. P. (1988). Dimensions of national culture and effective leadership patterns: Hofstede revisited. *Advances in international comparative management, 3*(1), 127-150.

Dwyer, D. (1986). Understanding the principal's contribution to instruction. *Peabody Journal of Education, 63*(1), 3–18.

Edmonds, R. (1979). Effective schools for the urban poor. *Educational leadership*, *37*(1), 15-24.

Eichinger, R. W., & Lombardo, M. M. (2004). Patterns of rater accuracy in 360-degree feedback. *People and Strategy*, *27*(4), 23.

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

Elo, S., & Kyngäs, H. (2008). The qualitative content analysis process. *Journal of advanced nursing, 62*(1), 107-115.

Fan, Y. (2000). A classification of Chinese culture. *Cross Cultural Management: An International Journal*, *7*(2), 3-10.

Fang, X. L. (2005). Fenbushi lingdao—xifang xuexiao lingdao zai tanyan [Distributed leadership:reforgiving Western school leadership]. *Studies in Foreign Education, 12*(32), 57-60.

Farh, J. L., & Cheng, B. S. (2000). A cultural analysis of paternalistic leadership in Chinese organizations. In *Management and organizations in the Chinese context* (pp. 84-127). Palgrave Macmillan UK.

Farh, J. L., Hackett, R. D., & Liang, J. (2007). Individual-level cultural values as moderators of perceived organizational support–employee outcome relationships in China: Comparing the effects of power distance and traditionality. *Academy of Management Journal, 50*(3), 715-729.

Feng, D. M. (2006). China's recent curriculum reform: progress and problems. *Planning and Changing*, *37*(1/2), 131.

Feng, D. M. (2012). Xifang jiaoxue lingdao yanjiu de zaidu xingsheng ji luoji zhuanxiang [The logic change in reigniting the research on instructional leadership in western countries]. *Educational Research, 3*, 135-139.

Figazzolo, L. (2009). *Impact of PISA 2006 on the education policy debate*. *Education International*.

Fleenor, J. W., McCauley, C. D., & Brutus, S. (1996). Self-other rating agreement and leader effectiveness. *The Leadership Quarterly*, *7*(4), 487-506.

Fleenor, J. W., Smither, J. W., Atwater, L. E., Braddy, P. W., & Sturm, R. E. (2010). Self–other rating agreement in leadership: A review. *The Leadership Quarterly, 21*, 1005–1034.

Fletcher, C., & Baldry, C. (2000). A study of individual differences and self‐awareness in the context of multi‐source feedback. *Journal of Occupational and Organizational Psychology*, *73*(3), 303-319.

Fraenkel, J. R., Wallen, N. E., & Hyun, H. H. (1993). *How to design and evaluate research in education (Vol. 7).* New York: McGraw-Hill.

Fromm, G., Hallinger, P., Volante, P., & Wang, W. C. (2016). Validating a Spanish version of the PIMRS application in national and cross-national research on instructional leadership. *Educational Management Administration & Leadership*, 45, 3, 419-444.

Fu, P. P. (1999). *Chinese leadership and culture*. In R. J. House & J. Chhokar (Eds.), Cultures of the world, A GLOBE anthology of in-depth descriptions of the cultures of 14 countries (vol. 1).

Fu, S, J., & Xiong, Y. X (2010). Meiguo jiaoyu lingdao zhengce biaozhun: ISLLC 2008 tanxi [Analysis on American principal leadership standards: ISLLC 2008]. *Elementary & Secondary Schooling Abroad*, 10.

Fullan, M. (2006). *The development of transformational leaders for educational decentralization*. Toronto, Canada.

Fullan, M. G. (1994). *Teacher leadership: A failure to conceptualize*. In D. R. Walling (Ed.), Teachers as leaders (pp. 241–253). Bloomington, IN: Phi Delta Kappa Educational Foundation.

Gao, R. G. (2012). Nianjizu zonghe shidao zai jiaoxue guanli zhong de yingyong [The function of grade teams in instructional management]. *Shanghai Research on Education, 5*, 64.

Gedifew, M. T. (2014). Perceptions about instructional leadership: The perspectives of a principal and teachers of Birakat Primary School in focus. *Educational Research and Reviews*, *9*(16), 542.

Gentry, W. A., Ekelund, B. R. Z., Hannum, K. M., & de Jong, A. (2007). A study of the discrepancy between self-and observer-ratings on managerial derailment characteristics of European managers. *European Journal of Work and Organizational Psychology*, *16*(3), 295-325.

Getzels, J. W., Lipham, J. M., & Campbell, R. F. (1968). *Educational administration as a social process: Theory, research, practice*. Harper & Row.

Gioia, D. A., & Sims Jr, H. P. (1985). On avoiding the influence of implicit leadership theories in leader behavior descriptions. *Educational and Psychological*

Measurement, *45*(2), 217-232.
Glasman, N. S. (1984). Student achievement and the school principal. *Educational Evaluation and Policy Analysis*, *6*(3), 283-296.
Glover, D., Gleeson, D., Gough, G., & Johnson, M. (1998). The Meaning of management the development needs of middle managers in secondary schools. *Educational Management Administration & Leadership, 26*(3), 279-292.
Goff, P. T., Goldring, E., & Bickman, L. (2014). Predicting the gap: Perceptual congruence between American principals and their teachers' ratings of leadership effectiveness. *Educational Assessment, Evaluation and Accountability, 26*(4), 333-359.
Goff, P., Edward Guthrie, J., Goldring, E., & Bickman, L. (2014). Changing principals' leadership through feedback and coaching. *Journal of educational administration*, *52*(5), 682-704.
Goldring, E. B., & Pasternack, R. (1994). Principals' Coordinating Strategies and School Effectiveness 1. *School effectiveness and school improvement*, *5*(3), 239-253.
Goldring, E., & Cohen-Vogel, L. (1999). *Supporting environments for instructional reform: The principal's role in a new century*. In annual meeting of the American Educational Research Association, Montreal, Canada.
Goldring, E., Porter, A., Murphy, J., Elliott, S. N., & Cravens, X. (2009). Assessing learning-centered leadership: Connections to research, professional standards, and current practices. *Leadership and Policy in Schools*, *8*(1), 1-36.
Greenfield Jr, W. D. (1995). Toward a theory of school administration: The centrality of leadership. *Educational Administration Quarterly*, *31*(1), 61-85.
Gronn, P. (2000). Distributed properties: A new architecture for leadership. *Educational management & administration*, *28*(3), 317-338.
Gronn, P. (2002). Distributed leadership as a unit of analysis. *The leadership quarterly*, *13*(4), 423-451.
Gurley, D. K., Anast-May, L., O'Neal, M., Lee, H. T., & Shores, M. (2015). Instructional leadership behaviors in principals who attended an assistant principals' academy: self-reports and teacher perceptions. *Planning and Changing*, *46*(1/2), 127.
Gurr, D., & Drysdale, L. (2013). Middle-level secondary school leaders: Potential, constraints and implications for leadership preparation and development. *Journal of Educational Administration*, *51*(1), 55-71.
Haack, M. (1991). *An investigation of the instructional management behaviors of principals in mid-sized public high schools in Iowa* (Unpublished doctoral dissertation). University of Northern Iowa, Cedar Falls, IO.
Haasl, W. (1989). *Multiple perspectives of role definition of small school principals and their influence on effective instructional management* (Unpublished doctoral dissertation). University of Wisconsin, Madison, WI.
Hall, G. E., & Hord, S. M. (2001). Implementing change. *Patterns, Principles, and Potholes.* Needham Heights/Massachusetts.
Hallinger, P. (1982). *Principal instructional management rating scale*. Sarasota, FL: Leading Development Associates.
Hallinger, P. (1983). *Assessing the instructional management behavior of principals*. Unpublished doctoral dissertation, Stanford University, Stanford, CA.
Hallinger, P. (1992). The evolving role of American principals: From managerial to instructional to transformational leaders. *Journal of Educational Administration*, *30*(3).
Hallinger, P. (2003). Leading educational change: Reflections on the practice of instructional

and transformational leadership. *Cambridge Journal of Education, 33*(3), 329-351.
Hallinger, P. (2005). Instructional leadership and the school principal: A passing fancy that refuses to fade away. *Leadership and policy in schools, 4*(3), 221-239.
Hallinger, P. (2008, April). *Methodologies for studying school leadership: A review of 25 years of research using the principal instructional management rating scale*. In annual meeting of the American Educational Research Association, New York.
Hallinger, P. (2010). Developing instructional leadership. *In Developing successful leadership* (pp. 61-76). Springer Netherlands.
Hallinger, P. (2011a). A review of three decades of doctoral studies using the principal instructional management rating scale: A lens on methodological progress in educational leadership. *Educational Administration Quarterly, 47*(2), 271–306.
Hallinger, P. (2011b). Leadership for learning: Lessons from 40 years of empirical research. *Journal of educational administration, 49*(2), 125-142.
Hallinger, P. (2013). A conceptual framework for systematic reviews of research in educational leadership and management. *Journal of Educational Administration*, *51*(2), 126-149.
Hallinger, P. (2016). Bringing context out of the shadows of leadership. *Educational Management Administration & Leadership*, 1-20.
Hallinger, P., & Heck, R. H. (1996). Reassessing the principal's role in school effectiveness: A review of empirical research, 1980-1995. *Educational Administration Quarterly, 32*(1), 5-44.
Hallinger, P., & Heck, R. H. (2010). Collaborative leadership and school improvement: Understanding the impact on school capacity and student learning. *School leadership and management*, *30*(2), 95-110.
Hallinger, P., & Leithwood, K. (1994). Introduction: Exploring the impact of principal leadership. *School Effectiveness and School Improvement*, *5*(3), 206-217.
Hallinger, P., & McCary, C. E. (1990). Developing the strategic thinking of instructional leaders. *The Elementary School Journal*, *91*(2), 89-108.
Hallinger, P., & Murphy, J. (1985). Assessing the instructional leadership behavior of principals. *Elementary School Journal, 86*(2), 217-248.
Hallinger, P., & Wang, W. C. (2015). *Assessing instructional leadership with the principal instructional management rating scale.* Springer.
Hallinger, P., Bickman, L., & Davis, K. (1996). School context, principal leadership, and student reading achievement. *The Elementary School Journal*, *96*(5), 527-549.
Hallinger, P., Dongyu, L., & Wang, W. C. (2016). Gender differences in instructional leadership: A meta-analytic review of studies using the principal instructional management rating scale. *Educational Administration Quarterly*, *52*(4), 567-601.
Hallinger, P., Wang, W. C., & Chen, C. W. (2013). Assessing the Measurement Properties of the Principal Instructional Management Rating Scale: A Meta-Analysis of Reliability Studies. *Educational Administration Quarterly*, *49*(2), 272-309.
Halverson, S. K., Tonidandel, S., Barlow, C., & Dipboye, R. L. (2002, April). *Self-other agreement on a 360-degree leadership evaluation*. In 17th Annual Conference of the Society for Industrial and Organizational Psychology, Toronto, Canada.
Harris, A. (2009). *Distributed Leadership: Different Perspectives*. The Netherlands: Springer Press.
Harris, A. (2013). Distributed leadership friend or foe?. *Educational Management*

Administration & Leadership, *41*(5), 545-554.

Harris, A., Day, C., Hopkins, D., Hadfield, M., Hargreaves, A., & Chapman, C. (2003). *Effective Leadership for School Improvement*. London: Routledge Falmer

Heck, R. H., & Hallinger, P. (2005). The study of educational leadership and management: Where does the field stand today?. *Educational Management Administration & Leadership*, *33*(2), 229-244.

Heck, R. H., & Hallinger, P. (2009). Assessing the contribution of distributed leadership to school improvement and growth in math achievement. *American Educational Research Journal*, *46*(3), 659-689.

Heck, R. H., Larsen, T. J., & Marcoulides, G. A. (1990). Instructional leadership and school achievement: Validation of a causal model. *Educational Administration Quarterly, 26*(2), 94-125.

Heider, F. (1958). *The psychology of interpersonal relations*. Lawrence Erlbaum Associates, Inc. New Jersey.

Henderson, N. (2007). *Teacher and principal perceptions of effective instructional leadership: An exploration of guiding practice and personal beliefs* (Unpublished doctoral dissertation). University of Texas, San Antonio, TX.

Heng, M. A., & Marsh, C. J. (2009). Understanding middle leaders: A closer look at middle leadership in primary schools in Singapore. *Educational Studies*, *35*(5), 525-536.

Herman, R., Gates, S. M., Arifkhanova, A., Bega, A., Chavez-Herrerias, E. R., Han, E., & Wrabel, S. (2016). *School Leadership Interventions Under the Every Student Succeeds Act: Evidence Review.* Santa Monica, CA: RAND Corporation.

Hinkin, T. R. (1995). A review of scale development practices in the study of organizations. *Journal of management*, *21*(5), 967-988.

Hinkin, T. R. (1998). A brief tutorial on the development of measures for use in survey questionnaires. *Organizational research methods*, *1*(1), 104-121.

Hofstede, G. (1980). Motivation, leadership, and organization: Do American theories apply abroad?. *Organizational dynamics, 9*(1), 42-63.

Hofstede, G. (2001). *Culture's consequences: Comparing values, behaviors, institutions, and organizations across nations*. (2nd ed.). Thousand Oaks CA: Sage Publications.

Hofstede, G. (2011). Dimensionalizing cultures: The Hofstede model in context. *Online readings in psychology and culture*, *2*(1), 8.

Hofstede Centre (2017). National culture: Dimensions of national culture. Retrieved from https://geert-hofstede.com/national-culture.html

Holzbach, R. L. (1978). Rater bias in performance ratings: Superior, self-, and peer ratings. *Journal of Applied Psychology*, *63*(5), 579.

Hopkins, D., & Jackson, D. (2003). Building the capacity for leading and learning. *Effective leadership for school improvement*, 84-104.

House, R. J., Hanges, P. J., Javidan, M., Dorfman, P. W., & Gupta, V. (Eds.). (2004). *Culture, leadership, and organizations: The GLOBE study of 62 societies.* Thousand Oaks CA: Sage Publications.

Hox, J. J., & Maas, C. J. (2001). The accuracy of multilevel structural equation modeling with pseudobalanced groups and small samples. *Structural equation modeling*, *8*(2), 157-174.

Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, *6*(1), 1-55.

Hu, Y. (2011). Xinzhongguo shiqinian zhongxiaoxue jiaoyanzu de zhineng he xingzhi chutan [Exploration of the function and character of teaching and research groups of primary and secondary schools in 17 years since 1949]. *Teacher Education Research, 23*, 50-55.

Hussey, R. & Hussey, J. (1998), *Business Research*, Macmillan Business Books, Basingstoke.

Ji, D. K. (2011). Xinkegai shinian: zhengming yu fanyi---jianlun xinkegai ruhe chuan xinxie zouchu laolu [Ten years of the New Curriculum Reform:arguments and reflection —how does New Curriculum Reform wear new shoes to walk out of the old path]. *Curriculum, Teaching Material and Method, 3*(31), 19-24.

Jiang, F. (2015). *Examining the Characteristics of Excellent Teaching and Learning Deputy Heads in Chinese Secondary Schools* (Doctoral dissertation). University of Leeds, UK.

Jiang, J. K. (2010). *Yingzai zhongceng: xuexiao biange lingdaoli de fazhan yanjiu [To win in the middle: The development of the school change of leadership]*. (Master's thesis, East China Normal University, Shanghai). Retrived from http://cdmd.cnki.com.cn/Article/CDMD-10269-2010199886.htm.

Jiang, R. G., & Xu, H. W. (2014). Nianji zuzhang xiaozhang hua: rang xiaoxiaozhang youquan youze [Making grade leaders principals: accountabilities and powers]. *Elementary and Secondary School Management, 8*, 30-31.

Jing, S.M. (2009). *Zhongxiaoxue jiaodao zhuren juese yu zhize diaocha baogao* [A survey research report on primary and middle school academic directors' role and duties]. Shanghai Educational Research, 7, 38-40.

Johnston, J. W., & Ferstl, K. L. (1999). The effects of interrater and self-other agreement on performance improvement following upward feedback. *Personnel Psychology, 52*, 271–303.

Kaiser, R. B., & Craig, S. B. (2005). Building a better mouse trap: Item characteristics associated with rating discrepancies in 360-degree feedback. *Consulting Psychology Journal: Practice and Research*, *57*(4), 235.

Katzenmeyer, M., & Moller, G. (2001). *Awakening the sleeping giant: Helping teachers develop as leaders* (2nd ed.). Thousand Oaks, CA: Corwin Press.

Kim, E., D. Kim, K. Kim and E. Kim (2007), *"Improving School Leadership: Country Background Report for Korea"* (English version), a report prepared for the Korean Educational Development Institute, available at www.oecd.org/edu/schoolleadership.

Kirkman, B. L., & Shapiro, D. L. (2001). The impact of cultural values on job satisfaction and organizational commitment in self-managing work teams: The mediating role of employee resistance. *Academy of Management journal, 44*(3), 557-569.

Kirkman, B. L., Chen, G., Farh, J. L., Chen, Z. X., & Lowe, K. B. (2009). Individual power distance orientation and follower reactions to transformational leaders: A cross-level, cross-cultural examination. *Academy of Management Journal, 52*(4), 744-764.

Kirkman, B. L., Lowe, K. B., & Gibson, C. B. (2006). A quarter century of culture's consequences: A review of empirical research incorporating Hofstede's cultural values framework. *Journal of international business studies*, *37*(3), 285-320.

Knoop, R., & Common, R. W. (1985, May). *A performance appraisal system for school principals*. Paper presented at the Annual Meeting of the Canadian Society for the Study of Education, Montreal, Quebec, Canada.

Kouzes, J. M., & Posner, B. Z. (1988). *The Leadership Practices Inventory*. San Diego: Pfeifer.

Krug, F. (1986). *The relationship between the instructional management behavior of elementary school principals and student achievement*. Unpublished doctoral

dissertation, University of San Francisco, San Francisco, CA.
Krüger, M. L., Witziers, B., & Sleegers, P. (2007). The impact of school leadership on school level factors: Validation of a causal model. *School Effectiveness and School Improvement*, *18*(1), 1-20.
Kuang, W. L. (2003). Zailun zhongxue jiaodao zhuren de zuoyong [Discussion on instructional directors in middle schools]. *Modem Primary and Secondary Education, 12*, 47-49.
Kyngas, H., & Vanhanen, L. (1999). Content analysis. *Hoitotiede*, *11*(3-12).
Larsen, T. J. (1987). *Identification of Instructional Leadership Behaviors and the Impact of Their Implementation on Academic Achievement.* Paper presented at the annual meeting of the American Educational Research Association, Washington, DC.
Leblanc, P. R., & Shelton, M. M. (1997). Teacher leadership: The needs of teachers. *Action in teacher education*, *19*(3), 32-48.
Lee, M., Hallinger, P., & Walker, A. (2012). A distributed perspective on instructional leadership in International Baccalaureate (IB) schools. *Educational Administration Quarterly*, *48*(4), 664-698.
Leithwood, K. (1994). Leadership for school restructuring. *Educational administration quarterly*, *30*(4), 498-518.
Leithwood, K. (1999). An organizational perspective on values for leaders of future schools. *Values and educational leadership*, 25-50.
Leithwood, K. A., & Montgomery, D. J. (1986). *Improving principal effectiveness: The principal profile*. Ontario Institute for Studies in Education,.
Leithwood, K., & Jantzi, D. (1999). Transformational school leadership effects: A replication. *School effectiveness and school improvement*, *10*(4), 451-479.
Leithwood, K., & Jantzi, D. (2000). The effects of transformational leadership on organizational conditions and student engagement with school. *Journal of Educational Administration*, *38*(2), 112-129.
Leithwood, K., & Jantzi, D. (2005). A review of transformational school leadership research 1996–2005. *Leadership and policy in schools*, *4*(3), 177-199.
Leithwood, K., Anderson, S., Mascall, B., & Strauss, T. (2010). School leaders' influences on student learning: The four paths. In T. Bush, L., Bell and D. Middlewood (Eds.), *The Principles of Educational Leadership and Management.* London: Sage publishers.
Leithwood, K., Patten, S., & Jantzi, D. (2010). Testing a conception of how school leadership influences student learning. *Educational Administration Quarterly*, *46*(5), 671-706.
Leithwood, K., Louis, K. S., Anderson, S., & Wahlstrom, K. (2004). *Review of research: How leadership influences student learning.* New York, NY: Wallace Foundation.
Leithwood, K., Day, C., Sammons, P., Harris, A., & Hopkins, D. (2008). *Seven strong claims about successful school leadership*. National College of School Leadership, Nottingham, UK.
Lezotte, L. (2001). *Revolutionary and evolutionary: The effective schools movement*. Okemos, MI: Effective Schools Products, Ltd.
Li, M. X. (2007). Cong zhongjianren dao zhongjian liliang: kegai beijing xia zen yang zuohao jiaoxue fuxiaozhang [From "middle man" to "middle force"-how to become an effective instrucitonal asstaitnt principal in the context of educational reform]. *Instructional Management*, 5, 28-29.

Li, S & Fok, P. K. (2015). Xuexiao chixu gaijinde guanjian: nengdongzhe goujian nengliang [Improving change agents' capacity as the key to continuous school improvement]. *Global Education, 44*(9), 38-46.

Li, X. J. (2015). *A contextualized instructional leadership model in China: Perceptions of 22 principals in Shenzhen and Guangzhou* (Unpublished doctoral dissertation). The Education University of Hong Kong, Hong Kong.

Li, X. J., Walker, A. D., & Qian, H. (2016, April). *A contextualized instructional leadership model in China: Perceptions of 22 principals in Shenzhen and Guangzhou*. Paper presented at the 2016 AERA Annual Meeting: Public scholarship to educate diverse democracies, The Walter E. Washington Convention Centre, Washington, DC.

Li, Z. T. (2008). Jichu jiaoyu gaige de guanjianci yinggiashi "wenhua biange" [the key word for basic educational reform should be "change of culture"]. *People Education, 3*(4), 2-5.

Li, C. P. & Shi, K. (2005). Biangexing lingdao de jieguo yu celiang [The structure and measu rement of transformational leadership in China]. *Acta Psychologica Sinica, 37*(6), 803-811.

Lian, H., Ferris, D. L., & Brown, D. J. (2012). Does power distance exacerbate or mitigate the effects of abusive supervision? It depends on the outcome. *Journal of Applied Psychology, 97*(1), 107.

Lin, W., Wang, L., & Chen, S. (2013). Abusive supervision and employee well‐being: The moderating effect of power distance orientation. *Applied Psychology*, *62*(2), 308-329.

Lipham, J. (1961). *Effective principal, effective school*. Reston, VA: National Association of Secondary School Principals.

Lissitz, R. W., & Samuelsen, K. (2007). A suggested change in terminology and emphasis regarding validity and education. *Educational researcher*, *36*(8), 437-448.

Liu, S., Hallinger, P., & Feng, D. (2016). Learning-centered leadership and teacher learning in China: does trust matter?. *Journal of Educational Administration*, *54*(6), 661-682.

Liu, Z. Z. (2010). *Zhong xiaoxue xiaozhang jiaoxue lingdao jixiao yanjiu* [A study on schoolmasters' instructional leadership performance]. (Doctoral dissertation, Northwest University). Retrived from http://cdmd.cnki.com.cn/Article/CDMD-10635-2011016710.htm

Locke, E. A., & Latham, G. P. (1990). *A theory of goal setting & task performance*. Prentice-Hall, Inc.

London, M., & Smither, J. W. (1995). Can multi‐source feedback change perceptions of goal accomplishment, self‐evaluations, and performance‐related outcomes? Theory‐based applications and directions for research. *Personnel Psychology*, *48*(4), 803-839.

Lord, R., & Maher, K. (1991). Leadership and information processing: Linking perceptions and processes. *Boston: Unwin Hyman. Moorman, RH, & Blakely, GL (1995). Individualism-collectivism as an individual difference predictor of organizational citizenship behavior. Journal of Organizational Behavior*, *16*, 127-142.

Lord, R.G., & Maher, K.J. (1993). *Leadership and information processing: Linking perceptions and performance*, Rutledge, London

Lorei, L. (2015). *Perceptions of leadership: visions of integration* (Unpublished doctoral thesis). Youngstown State University.

Lu, L. T., Shen, Q., & Liang, W. (2014). Woguo jinsanshinian jiaoyanyuan yanjiu de yuanfenxi [The meta-analysis of studies on teaching and research staff in primary and secondary school education in last 30 years in China]. *Education Research Monthly*, *2,* 49-55.

Lu, N. G., & Shen, W. (2010). Zhongguo jianyanyuan zhinengde lishi yanbian [The historical change of Chinese school researchers' role]. *Global Education, 7*, 66-70.

Lyons, B. J. (2010). *Principal instructional leadership behavior, as perceived by teachers and principals, at New York State recognized and non-recognized middle schools.* (Unpublished doctoral dissertation), Seton Hall University, South Orange, NJ.

Ma, J. S., & Wu, J. N. (2013). Zhongxiaoxue xiaozhang jiaoxue lingdao fengge pinggu [Evaluation of primary and middle school principal instructional leadership style]. *Educational Science Research, 12*, 5-9.

MacCallum, R. C., Browne, M. W., & Sugawara, H. M. (1996). Power analysis and determination of sample size for covariance structure modeling. *Psychological methods*, *1*(2), 130.

Mallory, B. (2003). *The relationship of teachers perceptions of instructional leadership and student achievement measured by state testing in ten North Carolina high schools*. Unpublished doctoral dissertation. East Carolina State University, Greenville, NC.

Marks, H. M., & Printy, S. M. (2003). Principal leadership and school performance: An integration of transformational and instructional leadership. *Educational administration quarterly, 39*(3), 370-397.

Martens, K., & Niemann, D. (2010). *Governance by comparison: how ratings & rankings im pact national policy-making in education*. TranState Working Papers, 139.

Marshall, A. K. (2005). *Instructional leadership: Perceptions of middle school principals and teachers.* Unpublished doctoral dissertation. University of Texas - Pan American, Texas A&M University, Commerce, TX.

McCauley, C., & Lombardo, M. (1990). Benchmarks: An instrument for diagnosing managerial strengths and weaknesses. In K. E. Clark & M. B. Clark (Eds.), *Measures of leadership* (pp. 535-545). West Orange, NJ: Leadership Library of America.

Meek, J. (1999). *Relationship between principal instructional leadership and student achievement outcomes in North Carolina elementary schools.* Unpublished doctoral dissertation, North Carolina State University, Raleigh, N.C.

Metcalfe, C. & Russell, S. (1997) *The role of subject leaders in monitoring the work of teachers in secondary schools: the quest for consistency?* paper presented to the annual conference of the British Educational Research Association, York.

Meyer, T. (1990). *Perceived leader authenticity as an effective indicator of perceived instructional leadership behavior in middle level principals.* Unpublished doctoral dissertation, Andrews University, Berrien Springs, MI.

Miller, L. J. (1991). *Perceptions of Alabama middle school teachers and principals regarding the principal's instructional leadership role and competencies as developed by effective school studies* (Unpublished doctoral dissertation). University of Alabama, Montgomery, AL.

Ministry of Education (2013). *Minister of Education's notice on "professional standards for compulsive education principals"*. Retrieved from http://www.moe.edu.cn/publicfiles/business/htmlfiles/moe/s7148/201302/147899.html (in Chinese)

Ministry of Education (2015). *National Statistical Report of 2015 Educational Development*. Retrieved from http://www.moe.gov.cn/srcsite/A03/s180/moe_633/201607/t20160706_270976.html (in Chinese)

Ministry of Education. (2001, October, 17). *Jiaoyubu guanyu yinfa "kaizha jichu jiaoyu xin kecheng shiyan tuiguang gongzuo de yijian" de tongzhi. [Notice from MoE about "carrying out experimental extension of new curriculum for basic education"]*.Retrieved from http://www.gov.cn/gongbao/content/2002/content_61569.htm

Ministry of Education. (2010, July 29). *guojia zhongchangqi jiaoyu gaige he fazhan guihua gangyao (2010-2020) [National Education Reform and Development of Long-and-middle-term Planning (2010-2020)]*. Retrieved from http://www.moe.edu.cn/publicfiles/business/htmlfiles/moe/moe_838/201008/93704.html

Ministry of Education. (2016, November, 4). *2015 nian quanguo jiaoyu jingfei zhixing qingkuang tongji gonggao. [Announcement on the implementation of the national education funds of 2015]*.Retrieved from http://moe.gov.cn/srcsite/A05/s3040/201611/t20161110_288422.html

Moore, H. B. (1964). The ferment in school administration. *Behavioral Science and Educational Administration. The Sixty-Third Yearbook Of The National Society For The Study Of Education, Part*, *2*, 11-32.

Mulford, B., & Silins, H. (2003). Leadership for organisational learning and improved student outcomes—What do we know?. *Cambridge Journal of Education*, *33*(2), 175-195.

Murphy, J. & Meyers, C. (2007). *Turning around failing schools: Leadership lessons from the organizational sciences.* Thousand Oaks, CA: Corwin.

Murphy, J. (2013). The architecture of school improvement. *Journal of Educational Administration*, *51*(3), 252-263.

Murphy, J., & Shipman, N. (2003). Developing standards for school leadership development: A process and rationale. In P. Hallinger (Eds.), *Reshaping the Landscape of School Leadership Development: a global perspective*. Taylor & Francis, The Netherlands: Swets & Zeitlinger.

Murphy, J., Hallinger, P., & Mitman, A. (1983). Problems with research on educational leadership: Issues to be addressed. *Educational Evaluation and Policy Analysis*, *5*(3), 297-305.

Murphy, K. R., & Cleveland, J. (1995). *Understanding performance appraisal: Social, organizational, and goal-based perspectives*. Sage.

Muthén, L. K., & Muthén, B. O. (2010). *Mplus User's Guide: Statistical Analysis with Latent Variables: User'ss Guide*. Muthén & Muthén.

National Bureau of Statistics (2016). *Search engine of statistics on provinces*. Retrieved from http://data.stats.gov.cn/easyquery.htm?cn=E0103

National Commission on Excellence in Education. (1983). *A Nation at Risk: The Imperative for Educational Reform: A Report to the Nation and the Secretary of Education, United States Department of Education*. The Commission.

Nettles, S. M., & Herrington, C. (2007). Revisiting the importance of the direct effects of school leadership on student achievement: The implications for school improvement policy. *Peabody Journal of Education*, *82*(4), 724-736.

Neumerski, C. M. (2012). Rethinking Instructional Leadership, a Review What Do We Know

About Principal, Teacher, and Coach Instructional Leadership, and Where Should We Go From Here?. *Educational administration quarterly*, *49*(2), 310-347.

New Zealand Ministry of Education (2007), *"Improving School Leadership, Country Background Report for New Zealand*", available at www.oecd.org/edu/school leadership.

Nunnally, J.C. (1978). *Psychometric Theory*, McGraw-Hill, New York, NY,

O'Day, K. (1983). *The relationship between principal and teacher perceptions of principal instructional management behavior and student achievement*. Unpublished doctoral dissertation, Northern Illinois University, Normal, IL.

O'Donnell, R. (2002). *Middle-Level principals' instructional Leadership Behaviors and student achievement*. Unpublished doctoral dissertation, Lehigh University, Lehigh, PA.

OECD (2008) Beatriz, P., Deborah, N., & Hunter, M. (2008). *Improving School Leadership, Volume 1 Policy and Practice: Policy and Practice (*Vol. 1). OECD publishing.

OECD. (2001). *Literacy skills for the world of tomorrow further results from PISA 2000*. Retrieved from http://www.oecd.org/edu/school/2960581.pdf

OECD. (2004). *First results from PISA 2003 executive summary*. Retrieved from http://www.oecd.org/edu/school/programmeforinternationalstudentassessmentpisa/34002454.pdf

OECD. (2007). *Executive summary*. Retrieved from http://www.oecd.org/pisa/pisaproducts/39725224.pdf

Office of Henan Province Chronicles. (2011). *Henan gaikuang [Brief introduction to Henan]*. Retrieved from http://www.hnsqw.com.cn/mlhn/qsgk/201111/t20111113_62892.htm

Oris, A. (1988). The role of high school department chairs in a large suburban school system. Blacksburg Va.: Virginia Tech.

Ostroff, C., Atwater, L. E., & Feinberg, B. J. (2004). Understanding self-other agreement: A look at rater and ratee characteristics, context, and outcomes. *Personnel Psychology*, *57*(2), 333-375.

Owens, J. L. (2015). *Principal and Teacher Perceptions of Instructional Leadership and Organizational Health in Secondary Schools* (Doctoral dissertation), Baker University.

Park, J. H., & Ham, S. H. (2014). Whose perception of principal instructional leadership? Principal-teacher perceptual (dis) agreement and its influence on teacher collaboration. *Asia Pacific Journal of Education*, 1-20.

Patton, J. (1987). *The Role and Function of Assistant Principals in Virginia's Public Schools.* Blacksburg, Va.: Virginia Tech.

Poole, W. (1995). Reconstructing the teacher-administrator relationship to achieve systemic change. *Journal of School Leadership*, *5*, 565-596.

Poovatanikul, V. (1993). *Analyses of the perceptions of Thai principals and teachers as to the principal's role as instructional leader*. Unpublished doctoral dissertation, Southern Illinois University, Carbondale, IL.

Printy, S. M. (2008). Leadership for teacher learning: A community of practice perspective. *Educational Administration Quarterly*, *44*(2), 187-226.

Qian, H., & Walker, A. (2013). How principals promote and understand teacher development under curriculum reform in China. *Asia-Pacific Journal of Teacher Education*, *41*(3), 304-315.

Qian, H., Walker, A., & Li, X. (2017). The west wind vs the east wind: instructional leadership model in China. *Journal of Educational Administration*, *55*(2), 186-206.

Ratchaneeladdajit, R. (1997). *Perceptions of Thai principals and teachers toward the*

principals' role as instructional leaders in private schools in Bangkok (Unpublished doctoral dissertation). Southern Illinois University, Carbondale, IL.

Reid, N. (1989). *Elementary school principals' behaviors in an urban school improvement program: a descriptive study of five principals*. Unpublished doctoral dissertation, Temple University, Philadelphia, PA.

Robinson, V., Lloyd, C., & Rowe, K. (2008). The Impact of leadership on student outcomes: An analysis of the differential effects of leadership types. *Educational Administration Quarterly, 44*(5), 635-674.

Rogers, J. (2005). *Improving student learning: Development of a resource guide for elementary school principals* (Unpublished doctoral dissertation), Nova Southeastern University, Ft. Lauderdale, FL.

Saavedra, A. (1987). *Instructional management behaviors of secondary administrators*. Unpublished master thesis, Bukidnon State College, Malaybalay, Bukidnon, Philippines.

Sala, F. (2003). Executive Blind Spots: Discrepancies Between Self-and Other-Ratings. *Consulting Psychology Journal: Practice and Research*, *55*(4), 222.

Salvador, A. (1999). *Relationship between the teachers' and administrators' perceived school organizational health and administrators' instructional leadership in Our Lady of Perpetual Succor College, High School Dept., 1998-99.* (Unpublished master thesis). Ateneo de Manila University, Manila, Philippines.

Sammons, P., Hillman, J., & Mortimore, P. (1995). Key Characteristics of Effective Schools (London, Institute of Education). *SammonsKey Characteristics of Effective Schools1995*.

San Nicolas, E.Q. (2003). *Instructional leadership in Guam's public elementary schools* (Unpublished doctoral dissertation). University of San Diego, San Diego, CA.

Schreiber, J. B., Nora, A., Stage, F. K., Barlow, E. A., & King, J. (2006). Reporting structural equation modeling and confirmatory factor analysis results: A review. *The Journal of educational research*, *99*(6), 323-338.

Sebastian, J., & Allensworth, E. (2012). The influence of principal leadership on classroom instruction and student learning a study of mediated pathways to learning. *Educational Administration Quarterly*, *48*(4), 626-663.

Shatzer, R. H. (2009). *A comparison study between instructional and transformational leadership theories: Effects on student achievement and teacher job satisfaction.* Unpublished doctoral dissertation, Brigham Young University, Provo, UT.

Sheppard, B. (1996). Exploring the transformational nature of instructional leadership. *Alberta Journal of Educational Research, 42*(4), 325-344.

Sherrill, J. A. (1999). Preparing teachers for leadership roles in the 21st century. *Theory Into Practice, 38*, 56–61.

Silva, J., White, G., & Yoshida, R. (2011). The direct effects of principal–student discussions on eighth grade students' gains in reading achievement: An experimental study. *Educational Administration Quarterly, 47*(5), 772-793.

Sinnema, C. E., Robinson, V. M., Ludlow, L., & Pope, D. (2015). How effective is the principal? Discrepancy between New Zealand teachers' and principals' perceptions of principal effectiveness. *Educational Assessment, Evaluation and Accountability*, *27*(3), 275-301.

Smith, S. (2007). *Principals' and teachers' perception of principals' instructional leadership.* Unpublished doctoral dissertation. University of South Carolina, Columbia, SC.

Smither, J. W., London, M., & Reilly, R. R. (2005). Does performance improve following multisource feedback? A theoretical model, meta-analysis, and review of empirical findings. *Personnel Psychology*, *58*(1), 33-66.

Song. H. (2012). Lun zhongguo jiaoyanyuan zuowei zhuanye lingdao zhe xinjiaose lilun goujian [On the New Role of the Teaching-researcher: Being the Professional Leader]. *Teacher Education Research*, *24*, 1, 18-21.

Southworth, G. (2002). Instructional leadership in schools: Reflections and empirical evidence. *School Leadership & Management*, *22*(1), 73-91.

Spillane, J. P. (2006). *Distributed leadership*. San Francisco: Jossey-Bass.

Steel, R. P., & Ovalle, N. K. (1984). Self‐appraisal based upon supervisory feedback. *Personnel Psychology*, *37*(4), 667-685.

Steiger, J. H. (1990). Structural model evaluation and modification: An interval estimation approach. *Multivariate behavioral research*, *25*(2), 173-180.

Stevens, L. (1996). *Instructional leadership: A single district study of the multiple perceptions of central office administrators, principals, and elementary teachers* Unpublished doctoral dissertation. State University of New York at Buffalo, Buffalo, NY.

Stokes, R. L. (1984). *Instructional leadership activities in senior high schools in Virginia.* Doctoral dissertation. Virginia Polytechnic Institute and State University.

Sugawara, H. M., & MacCallum, R. C. (1993). Effect of estimation method on incremental fit indexes for covariance structure models. *Applied Psychological Measurement*, *17*(4), 365-377.

Tang, T. (1997). *The relationships among transformational, transactional and instructional leadership behaviors of senior secondary school principals in Taiwan*. (Unpublished doctoral dissertation). University of South Dakota, Bismarck, S.D.

Taraseina, P. (1993). *Assessing instructional leadership behavior of secondary school principals in Thailand*. Unpublished doctoral dissertation. Peabody College for Teachers of Vanderbilt University, Nashville, TN.

The Education Department of Henan Province (2016). *2015 nian Henan jiaoshi shiye fazhan tongji gongbao* [Statistics on educational development of Henan province]. Retrieved fr om http://www.haedu.gov.cn/2016/05/16/1463367234225.html

Tsui, A. S., & Ashford, S. J. (1994). Adaptive self-regulation: A process view of managerial effectiveness. *Journal of Management*, *20*(1), 93-121.

Tyack, D., & Hansot, E. (1982). *Managers of virtue: public school leadership in America: 1920-1980*. New York: Basic Books.

Tyler, T. R., Lind, E. A., & Huo, Y. J. (2000). Cultural values and authority relations: The psychology of conflict resolution across cultures. *Psychology, Public Policy, and Law, 6*(4), 1138.

UNESCO. (2017). *The States Parties*. Retrieved from http://whc.unesco.org/en/statesparties/cn

Urick, A., & Bowers, A. J. (2014). What are the different types of principals across the United States? A latent class analysis of principal perception of leadership. *Educational Administration Quarterly, 50*(1), 96-134.

Vinson, T. (1997). *The performance of secondary principals as instructional leaders in*

Mississippi public schools as perceived by superintendents, principals, and classroom teachers. Unpublished doctoral dissertation. University of Mississippi, Jackson, MS.

Wafir, N. (2011). *The role of the principal's leadership in contributing towards the professional development of teachers in schools*. (Unpublished master thesis). University of Nottingham, Nottingham, UK.

Waldman, D. A., De Luque, M. S., Washburn, N., House, R. J., Adetoun, B., Barrasa, A., & Dorfman, P. (2006). Cultural and leadership predictors of corporate social responsibility values of top management: A GLOBE study of 15 countries. *Journal of International Business Studies*, *37*(6), 823-837.

Walker, A., & Dimmock, C. (2002). Moving school leadership beyond its narrow boundaries: Developing a cross-cultural approach. In *Second international handbook of educational leadership and administration* (pp. 167-202). Springer Netherlands.

Walker, A., & Qian, H. (2015). Review of research on school principal leadership in mainland China, 1998-2013: Continuity and change. *Journal of Educational Administration*, *53*(4), 467-491.

Walker, A., Hu, R., & Qian, H. (2012). Principal leadership in China: An initial review. *School Effectiveness and School Improvement*, *23*(4), 369-399.

Wang, L. (2007). *Xuexiao kecheng lingdao yanjiu [Research on school cirruculum leadership]*. (Unpublished doctoral dissertation). Northwest Normal University.

Wang, S. (2013). Dangdai xifang zhuliu jiaoyu lingdao lilun xinjinzhan [The new development of contemporary mainstream educational leadership theory in the west]. *Studies in Foreign Education, 5*(40), 43-54.

Wang, S. W., &Huang, W. (2010). Xiaozhang jiaoxue lingdao de liuzhong leixing. [On the six styles of headmasters' instructional leadership]. *Research in Education Development, 18,* 42-46.

Wang, W. L., Lee, H. L., & Fetzer, S. J. (2006). Challenges and strategies of instrument translation. *Western Journal of Nursing Research*, *28*(3), 310-321.

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

Waters, D. (2005). *Principal leadership behavior and 5th grade student achievement in high poverty schools.* Unpublished doctoral dissertation. University of Virginia, Charlottesville, VA.

Wegner, D. M., & Vallacher, R. R. (1980). The self in prosocial action. *The self in social psychology*.

Wen, X. L. (2003). Ruhe zuohao xinshijian jiaodao zhuren gongzuo [how to perform well as instructional directors in the new time]. *Contemporary Chinese educational collections*, 12, 102-103.

Wenner, J. A., & Campbell, T. (2016). The Theoretical and Empirical Basis of Teacher Leadership A Review of the Literature. *Review of Educational Research*, 87,1, 134-171.

White, P. (2000). *The leadership of curriculum area middle managers in selected Victorian government secondary schools*. Unpublished Doctoral Thesis. The University of Melbourne, Melbourne.

Wong, K. C. (2001). Chinese culture and leadership. *International Journal of Leadership in Education, 4(4), 309-319.*

World Health Organization. (2017). *Process of translation and adaptation of instruments*.

Retrieved from http://www.who.int/substance_abuse/research_tools/translation/en/

Worner, W., & Brown, G. (1993). The instructional leadership team: A new role for the department head. *NASSP Bulletin*, *77*(553), 37-45.

Yammarino, F. J., & Atwater, L. E. (1997). Do managers see themselves as other see them? Implications of self-other rating agreement for human resources management. *Organizational Dynamics*, *25*(4), 35-44.

Yammarino, F. J., Spangler, W. D., & Dubinsky, A. J. (1998). Transformational and contingent reward leadership: Individual, dyad, and group levels of analysis. *The Leadership Quarterly*, *9*(1), 27-54.

Yang, C.S. (1996). *Instructional leadership behaviors of elementary school principals in Taiwan, Republic of China.* Unpublished doctoral dissertation, University of Northern Colorado, Greeley, CO.

Ylimaki, R. M. (2007). Instructional leadership in challenging US schools. *International Studies in Educational Administration (Commonwealth Council for Educational Administration & Management (CCEAM))*, *35*(3).

Yogere, L. (1996). *Instructional leadership behaviors of principals as perceived by themselves and the teachers of Assumption, San Lorenzo, during the school year 1995-1996*. Unpublished master thesis, Ateneo de Manila University, Manila, Philippines.

York-Barr, J., & Duke, K. (2004). What do we know about teacher leadership? Findings from two decades of scholarship. *Review of educational research*, *74*(3), 255-316.

Young, M. D., Crow, G. M., Murphy, J., & Ogawa, R. T. (Eds.). (2009). *Handbook of research on the education of school leaders*. Routledge. New York and London.

Yu, D. S., Lee, D. T., & Woo, J. (2004). Issues and challenges of instrument translation. *Western journal of nursing research*, *26*(3), 307-320.

Zhang, L. (2013). Zhuanyehua shiye xia zhongxiaoxue xiaozhang lingdaoli wenti tanjiu [Research on principal instructional leadership from the perspective of professionalism]. *Journal of the Chinese Society of Education, 6*, 45-48.

Zhang, X. P. (2014). Jiaoxue lingdaoli shi xiaozhang lingdao zhi fansi [Reflection on Instructional leadership constitutes the core competiveness of headmaster]. *Research in Educational Development*, 10, 24-28.

Zhang, Y., & Begley, T. M. (2011). Power distance and its moderating impact on empowerment and team participation. *The International Journal of Human Resource Management, 22*(17), 3601-3617.

Zhao, D. C. (2013). Jiaoxue lingdaoli: neihan, pingce ji weilai yanjiu fangxiang [Instructional leadership: insight, connotation, assessment and future researching direction]. *Studies in Foreign Education, 4*, 96-103.

Zhao, D. C., & Song, H. P. (2014). Yiwu jiaoyu xuexiao xiaozhang jiaoxue lingdaoli diaocha fenxi [Investigation and analysis of compulsory education school principals' instructional leadership]. *Journal of the Chinese Society of Education, 3*, 43-47.

Zheng, X. & Yin, H. B. (2015). Fenbushi lingdao: gainian, shijian yu zhanwang [Distributed leadership: concept, practice and future]. *Global Education, 2*, 96-106.

Zhou, B. (2005). Nianjizu yu jiaoyanzu de chongtu yu xiezuo [Conflict and Cooperation between grade team and research group]. *Elementary and Secondary School Management*, 7, 10-11.

Appendix

Appendix A: Questionnaires

校长教学管理调查问卷 （校长填写）

第一部份：请在符合实际情况的选项上填答/划“√”。

1. 学校名称：_____小学/初中
2. 学校规模：A、500 人以下　　B、501-1000 人　　C、1001-2000 人　　D、2000 人以上
3. 教师人数：_____
4. 您的性别：A、 男　　B、 女
5. 您的年龄：A、 35 岁及以下　B、 36-45 岁　C、 46-55 岁　　D、55 岁及以上
6. 教育背景：A、大专及以下　　B、大学本科　　C、硕士及以上
7. 至 2015 年为止，您在本校担任校长的年数为：
   A、 1 年　　B、 2-4 年　　C、 5-9 年　　D、 10-15 年　　E、 16 年以上
8. 至 2015 年为止，您担任校长的总年数为：
   A、 1 年　　B、 2-4 年　　C、 5-9 年　　D、 10-15 年　　E、 16 年以上
9. 您曾担任教师的年数为：
   A、 1 年　　B、 2-4 年　　C、 5-9 年　　D、 10-15 年　　E、 16 年以上

第二部份： 以下共有 60 道与校长实际工作情形及领导行为有关的选择题，请根据您和您学校的实际情况进行选择。谢谢！

您如何……？

F1 制定学校的目标		几乎不会	很少	有时	经常	几乎总是
1	制定一套具有一致性的学校年度目标					
2	依据教职工的课业责任落实学校的既定目标。					
3	制定学校目标前会先用某些有系统的方法（需求评估法），来得知教师们的期望					
4	在计划学校的教学目标时，会以学生的学业表现为依据					
5	所设定的目标容易被教师接受以及实行					
6	根据所在地区政策制定有学校办学特色的目标					

F2 与全校师生沟通学校的目标		几乎不会	很少	有时	经常	几乎总是
7	有效地与全校师生切实沟通学校的目标					
8	在教务会议中，与教师们讨论学校的教学目标					
9	依据既定的教学目标，与教师共同研议改进教学设计与教学内容					
10	用板报形式倡导学校的教学教研目标（比如公告栏上汇报某学科教学进展）					
11	在早会或周会等学生集会中倡导学校的目标					

F3 评估教师教学		几乎不会	很少	有时	经常	几乎总是
12	要求教师依循学校的既定目标来配合教学					
13	参考学生的学业成绩来评鉴教师的教学表现					
14	经常以非正式的方式巡查课堂（非正式的巡堂指非事先安排、且连续观察五分钟以上者。结果不一定要计入评鉴表）					
15	巡堂时若发现教师有优异的教学表现，会在评鉴表或会议中加以表扬					
16	巡堂时若发现教师有不当的教学表现，会在评鉴表或会议中加以指出					

F4 协调课程与教学		几乎不会	很少	有时	经常	几乎总是
17	明确指出应由谁（比如校长、教务主任或某教师）去负责统筹与协调各年级间教学设计与教学内容的连贯性					
18	依据所有学生考试的成绩，来决定未来教学设计与教学内容的安排					
19	检视教师教学的内容，是否符合校方对教学设计与教学内容目标的要求					
20	以学生考试的成绩来评估教学设计与教学内容实施的成效					

21	主动参与教学设计与教学内容的研讨					
22	依据学校的办学特色推行校本课程					

F5 关注学生学习进展		几乎不会	很少	有时	经常	几乎总是
23	单独地与教师讨论其所教学生的学习进展					
24	与教师讨论学生们对试卷难易度的反应，以了解所安排教学设计与教学内容的优缺点					
25	以学生的考试成绩和其他表现，来评估学校既定目标的进展					
26	采用书面形式通知教师们全校学生的学业成绩					
27	通知全体学生他们考试的成绩					

F6 保障教学时间		几乎不会	很少	有时	经常	几乎总是
28	不使用广播等渠道干扰教师教学					
29	确保在上课时间学生不被叫到办公室					
30	对无故迟到或旷课的学生处以应得的处罚					
31	鼓励教师在教学时间教授和练习新技能和概念					
32	限制课外或校队等活动占用正课教学时间					

F7 与师生接触频率		几乎不会	很少	有时	经常	几乎总是
33	利用下课时间与学生和教师们交谈					
34	到教室与教师和学生讨论学校问题					
35	出席或参与学生的课外或社团等活动					
36	发现教师迟到时先代为维持教室秩序					
37	个别辅导学生或直接教学生们					

F8 教师激励		几乎不会	很少	有时	经常	几乎总是
38	在校务会议、校刊通讯中，表彰有优异表现的教师					
39	私下表扬教师的辛劳与工作表现					
40	在教师的书面评鉴中，记录他们的优异表现					
41	举荐“优秀教师”等殊荣给有杰出表现的教师					
42	提供在职进修或校外培训等机会给对学校有特殊贡献的教师					

F9 提升教师的专业素养		几乎不会	很少	有时	经常	几乎总是
43	确保教师的参加在职进修活动与学校教学目标相关联					
44	积极支持教师在课堂中运用在职进修活动中获得的技能					
45	有重要的校内教研研讨活动时，能获得全体教师的参与					
46	指导或参与和教学有关的校内教师教研活动					
47	专门安排活动，让教师们分享及交流从在职进修中所得到的理念与信息。					
48	大力支持常规的校本教研活动					
49	以多种形式推动课堂教学改革 （如请校外的教学专家来讲课指导。）					

F10 学生激励		几乎不会	很少	有时	经常	几乎总是
50	给成绩优秀的学生予以正式奖励。（如颁发奖状，在校刊中加以表扬）					
51	在升旗等集会中，表扬学业或品行优异的学生					
52	在办公室内接见有卓越表现的学生					
53	告知学生家长，其子女在学校进步或优异的表现					
54	积极支持教师奖励对班级活动有贡献的学生					

F11 校内外教学支持		几乎不会	很少	有时	经常	几乎总是
55	对教学中层干部授权，注重校内教学领导团队的培养					
56	注重加强校内中层和教师的合作					
57	与其他学校建立促进教学发展的伙伴关系					
58	积极参与教育局组织的各项活动和定期汇报教学相关工作					
59	争取教育局对学校课程教学发展的政策和资源的支持					
60	在教学活动方面加强家长参与和社区支持					

组织关系-权力距离		完全不赞同	不赞同	有时赞同	赞同	完全赞同
61	校长在做决定时不用咨询教师的意见。					
62	在与教师的交往中校长很有必要使用权威与权力。					
63	校长不需要征求教师的建议。					
64	校长应该避免与教师的工作以外的来往。					
65	教师不应该质疑校长的决定。					
66	校长不应该委派教师重要的任务。					

谢谢您的宝贵意见！

如果您愿意参与后续的研究和访谈，请在下方留下您的联系方式。所有信息将会保密。谢谢！

教学管理调查问卷 （教学中层填写）

第一部份：请在符合实际情况的选项上填答/划“ √ ”。

1. 学校名称：_____
2. 您的职务：A、教学副校长　B、教导主任　C、教研主任　D、年级组长
   E、学科组长　F、其他教学中层 （请注明）_____
3. 您的性别：A、 男　B、 女
4. 教育背景：A、大专及以下　B、大学本科　C、硕士及以上
5. 您的年龄：A、 35 岁及以下　B、 36-45 岁　C、 46-55 岁　D、55 岁及以上
6. 至 2015 年为止，您在本校担任中层教学领导的年数为：
   A、 1 年　B、 2-4 年　C、 5-9 年　D、 10-15 年　E、 16 年以上
7. 您担任教师的年数为：
   A、 1 年　B、 2-4 年　C、 5-9 年　D、 10-15 年　E、 16 年以上

第二部份： 以下共有 28 道<u>与您协助校长领导管理有关的选择题，请根据您的情况进行选择</u>“ √ ”。

	在以下方面，您多大程度上协助您的校长？	几乎不会	很少	有时	经常	几乎总是
1	参与制定学校年度目标					
2	在计划学校的教学目标时，会以学生的学业表现为依据					
3	参与制定具有学校办学特色的目标					
4	与全校师生切实沟通学校的目标和理念					
5	依据既定的教学目标，与其他教师共同研议改进教学设计和教学内容					
6	要求教师依循学校的既定目标来配合教学					
7	参考学生的学业成绩来评鉴教师的教学表现					
8	协调各学科的教学教研活动					
9	主动参与教学设计与教学内容的研讨					
10	依据学校的办学特色推行校本课程					

在以下方面，您多大程度上协助您的校长？		几乎不会	很少	有时	经常	几乎总是
11	单独地与教师讨论其所教学生的学习进展					
12	以学生的考试成绩和其他表现，来评估学校既定目标的进展					
13	鼓励教师在教学时间教授和练习新技能和概念					
14	利用下课时间与学生和教师们交谈					
15	出席或者参与学生的课外或社团等活动					
16	对教师的辛劳与工作表现进行单独表扬					
17	在教师的书面评鉴中，记录他们的优异表现					
18	给对学校有特殊贡献的教师提供在职进修等机会					
19	指导或参与教学有关的校内教师学术活动					
20	专门安排活动，让教师们分享及交流他们从在职进修中所得到的理念与信息					
21	大力支持常规的校本教研活动					
22	以多种形式推动课堂教学改革 （如请校外的教学专家来讲课指导）					
23	在办公室内接见有卓越表现的学生					
24	告知学生家长，其子女在学校进步或优异的表现					
25	您的校长会授权给您独立负责一些教学项目					
26	加强校内中层和教师的合作					
27	与其他学校建立促进教学发展的伙伴关系					
28	在教学活动方面加强家长参与和社区支持					

以下 6 道问题，是关于<u>您在工作中和您的校长的关系</u>，请按实际状况填答。（请在相应的选项上打“✓”）

您认为。。。		完全不赞同	不赞同	有时赞同	赞同	完全赞同
1	校长在做决定时不用咨询教师的意见。					
2	在与教师的交往校长很有必要使用权威与权力。					
3	校长不需要征求教师的建议。					
4	校长应该避免与教师的工作以外的来往。					
5	教师不应该质疑校长的决定。					
6	校长不应该委派教师重要的任务。					

谢谢您的宝贵意见！

如果您愿意参与后续的研究和访谈，请在下方留下您的联系方式。所有信息将会保密。谢谢！

教学管理和课堂实践调查问卷 （教师填写）

第一部份：请在符合实际情况的选项上填答/划“ √ ”。

1. 学校名称：_____

2. 您的性别：A、 男　　B、 女

3. 您的年龄：A、 35 岁及以下　B、 36-45 岁　C、 46-55 岁　　D、55 岁及以上

4. 教育背景：A、大专及以下　　B、大学本科　　C、硕士及以上

5. 您担任教师的年数为：

A、 1 年　　B、 2-4 年　　C、 5-9 年　　D、 10-15 年　　E、 16 年以上

第二部份： 以下共有 32 道与校长领导管理有关的选择题，请根据您观察到的您校长近一年的领导行为进行选择“ √ ”。

您的校长……？		几乎不会	很少	有时	经常	几乎总是
1	制定一套具有一致性的学校年度目标					
2	在计划学校的教学目标时，会以学生的学业表现为依据					
3	所设定的目标容易被教师接受以及实行					
4	根据所在地区政策制定有学校办学特色的目标					
5	有效地与全校师生切实沟通学校的目标					
6	依据既定的教学目标，与教师共同研议改进教学设计与教学内容					
7	要求教师依循学校的既定目标来配合教学					
8	参考学生的学业成绩来评鉴教师的教学表现					
9	明确指出应由谁（比如校长、教务主任或某教师）去负责统合与协调各年级间教学设计与教学内容的连贯性					
10	依据所有学生考试的成绩，来决定未来教学设计与教学内容的安排					
11	主动参与教学设计与教学内容的研讨					

您的校长……？		几乎不会	很少	有时	经常	几乎总是
12	依据学校的办学特色推行校本课程					
13	单独地与教师讨论其所教学生的学习进展					
14	以学生的考试成绩和其他表现，来评估学校既定目标的进展					
15	鼓励教师在教学时间教授和练习新技能和概念					
16	利用下课时间与学生和教师们交谈					
17	出席或者参与学生的课外或校队等活动					
18	私下表扬教师的辛劳与工作表现					
19	在教师的书面评鉴中，记录他们的优异表现					
20	提供在职进修或校外培训等机会给对学校有特殊贡献的教师					
21	指导或参与和教学有关的校内教师教研活动					
22	专门安排活动，让教师们分享及交流他们从在职进修中所得到的理念与信息。					
23	大力支持常规的校本教研活动					
24	以多种形式推动课堂教学改革 （如请校外的教学专家来讲课指导）					
25	在办公室内接见有卓越表现的学生					
26	告知学生家长，其子女在学校进步或优异的表现					
27	对教学中层干部授权，注重校内教学领导团队的培养					
28	注重加强校内中层和教师的合作					
29	与其他学校建立促进教学发展的伙伴关系					
30	积极参与教育局组织的各项活动和定期汇报教学相关工作					
31	争取教育局对学校课程教学发展的政策和资源的支持					
32	在教学活动方面加强家长参与和社区支持					

以下共有 26 道关于教学课堂实践的问题，请根据您自己的课堂实践情况进行选择“√”。

在课堂教学中。。。。		从不	几乎不会	很少	有时	经常	几乎总是	总是
1	积极主动参与到学生的学习活动中去							
2	分配给学生角色							
3	组织学生形成多人学习小组完成学习任务							

4	鼓励学生参与教学活动或其他形式的学习活动							
5	扩展和延伸学习小组在关键知识点上的讨论深度和话题							
6	使用多样化的问题和活动满足不同学生的学习需求							
7	把书本知识和学生生活经验联系起来							
8	使用不同的声调以便强调重要内容和信息							
9	运用多种教学方法							
10	为学生总结主要概念							
11	讲授到重要概念时会有停顿							
12	举例说明如何运用新学到的概念或技能							
13	正式教授新内容前，会先做简略介绍							
14	温故知新							
15	要求学生描述他们是如何得到问题的答案的							
16	要求学生尝试总结或重复重要的知识点或概念							
17	鼓励学生独立运用学习方法或回答问题							
18	使用开放式问题							
19	鼓励学生问问题、思考问题							
20	要求学生详细回答问题							
21	表扬学生在课堂互动或小组讨论中的积极参与和学习表现							
22	积极给学生反馈和帮助							
23	鼓励学生进行自我检查和纠正							
24	认可学生的学习优势和能力							
25	检查学生在课堂中完成任务和作业的情况							
26	针对重点知识的学习和理解，给予学生反馈							

以下 6 道问题，是关于<u>您在工作中和您的校长的关系</u>，请按实际状况填答。（请在相应的选项上打“✓”）

您认为。。。		完全不赞同	不赞同	有时赞同	赞同	完全赞同
1	校长在做决定时不用咨询教师的意见。					
2	在与教师的交往校长很有必要使用权威与权力。					

3	校长不需要征求教师的建议。					
4	校长应该避免与教师的工作以外的来往。					
5	教师不应该质疑校长的决定。					
6	校长不应该委派教师重要的任务。					

谢谢您的宝贵意见！

如果您愿意参与后续的研究和访谈，请在下方留下您的联系方式。所有信息将会保密。谢谢！

Appendix B: Ethical Review

The Hong Kong Institute of Education
香港教育學院

Powering Education
點亮教育原動力

26 February 2016

Ms GUO Wei
Doctor of Education Programme
Graduate School

Dear Ms Guo,

Application for Ethical Review <Ref. no. 2015-2016-0248>

I am pleased to inform you that approval has been given by the Human Research Ethics Committee (HREC) for your research project:

Project title: Instructional Leadership: Principal-teacher Perception Discrepancy and Functions of Middle Instructional Leaders

Ethical approval is granted for the project period from 26 February 2016 to 31 March 2017. If a project extension is applied for lasting more than 3 months, HREC should be contacted with information regarding the nature of and the reason for the extension. If any substantial changes have been made to the project, a new HREC application will be required.

Please note that you are responsible for informing the HREC in advance of any proposed substantive changes to the research proposal or procedures which may affect the validity of this ethical approval. You will receive separate notification should a fresh approval be required.

Thank you for your kind attention and we wish you well with your research.

Yours sincerely,

[redacted]

Connie Fung (Ms)
Secretary
Human Research Ethics Committee

c.c. Professor WANG Wen Chung, Chairperson, Human Research Ethics Committee

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