# A Review of Empirical Research on Transformational School Leadership in China (2010–2019)

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## Abstract

**Purpose:** The purpose of this literature review is to investigate the effectiveness of transformational school leadership (TSL) in Chinese K–12 settings between 2010 and 2019. The main objective is to provide a comprehensive understanding of TSL research in China and identify the possible future research directions.

**Design/Approach/Methods:** Vote counting method and narrative synthesis were applied in this review.

**Findings:** This review found the majority of the studies were quantitative, which indicates that qualitative and mixed-method studies should be encouraged. This review also identified 12 major outcome variables, including 9 teacher-level variables, 2 school-level variables, and 1 student-level variable. Additionally, the effects of transformational leadership on these outcome variables were uniformly significant, including both direct and indirect effects. Future studies should expand the scope of school-level and student-level outcome variables, but particularly student-level outcome variables.

**Originality/Value:** This is the first systematic review on the effectiveness of TSL research in China, which included both English and Chinese studies.

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## Introduction

Leadership styles of school principals are of considerable interest to education researchers. According to Heck and Hallinger (1999), prior to the 1980s, research on school principals mainly focused on the nature of the position and work. Accompanied by the rise of the educational accountability in the late 1970s, the research trend shifted to the role principals play in school improvement. Research found both direct and indirect effects of principals on a variety of variables, including school processes and outcomes, teacher-related variables, and student achievement.

Among the school principal leadership models, which have emerged over the past three decades, transformational leadership has been an overwhelmingly popular image of best practices (Hallinger, 2003). As a whole, transformational leadership has proven to be effective in various aspects, though to different extents (i.e., Berkovich & Eyal, 2017; Griffith, 2004; Leithwood & Beatty, 2007; Leithwood et al., 1994; Leithwood & Janzti, 1999). For example, J. Sun and Leithwood's (2012) meta-analytic review found all of the transformational school leadership (TSL) practices had at least moderate effects on school conditions as well as teacher internal states and behaviors. The effects of individual TSL practices on student achievement were small, although significant and positive. Nevertheless, most research on TSL has been carried out in an individualistic cultural context (Liu, 2017). Hallinger and Leithwood (1996) pointed out that leadership practices are largely impacted by social culture. This assertion leads to a question in the current field: Will TSL be effective in other cultures as well, particularly a collectivist culture, such as China?

The answer to this question will be profoundly important to Chinese education. According to Jiao and Liu (2017), China is at the critical phase to deepen its educational reform. In recent years, to cope with the rapid external changing environment, reform has become one of the main themes of Chinese basic education. For example, there was the initiation of the New Curriculum in 2001. The aim of this nationwide reform for K–12 schools was to improve the overall quality of teaching and learning by transforming school administration system, curriculum structure, and the traditional concepts of teachers and students. In 2018, after almost 20 years, the Chinese State Council enacted *Opinions on Deepening the Reform and Construction of Teachers in the New Era*, which clearly states that "by 2035, teachers' all-round capabilities, professional competence, and innovative ability should be largely improved, and tens of thousands of educator-type teachers should be cultivated." Undoubtedly, these have posed severe challenges to school principals under the "principal responsibility system," as it is their responsibility to cautiously reconsider how to

transform schools, teachers, and students to meet these requirements. The effectiveness of TSL may provide an approach for school principals to accomplish their missions as the nature of this leadership style is to transform through a set of leadership strategies and tactics.

Chinese scholars began to study transformational leadership in the 1990s (Yu & Zhang, 2011). There are quite a few systematic reviews of the studies of transformational leadership studies in Chinese context. One exception, Liu's (2018) "Transformational Leadership Research in China (2005–2015)," focused on both educational and noneducational settings. The overall findings from both settings were presented; however, the analysis did not distinguish between educational and noneducational settings, leaving an unclear representation of transformational leadership research in a Chinese educational setting.

This literature review was conducted to examine empirical studies in Chinese K–12 settings and the overall effectiveness of TSL. The main purpose is to provide a comprehensive understanding of TSL research in China so as to point out future research directions. This review mainly addresses the following questions:

- What recurring concepts and measurements have been used in TSL studies in China?
- What common variables have been examined in these studies?
- What models have been adopted in these studies (i.e., direct or indirect)?
- What are the major effects of TSL from these studies?

## Concept of transformational leadership

The term transformational leadership was first introduced by Downton (1973, as cited by Northouse, 2016). Later, it was used as an important approach to leadership by a political sociologist James MacGregor Burns (1978) in his work *Leadership*. As its name implies, transformational leadership is "a process that changes and transforms people" and "a process that incorporates charismatic and visionary leadership" (Northouse, 2016, p. 161). The process focuses on the intrinsic motivation and follower development by building a connection. As a result, through this connection, the followers' fullest potential can be developed, their values and beliefs can be changed, their levels of motivation and morality can be raised, and their goals can be broadened, which leads to performance levels exceeding normal expectations.

One of Burns's main contributions regarding the concept was how he distinguished transformational leadership from transactional leadership. For Burns, transactional leadership emphasizes exchanges between leaders and followers, whereas transformational leadership focuses more attention on the needs, motives, and support of followers. House (1976, as cited in Northouse, 2016) proposed a charismatic leadership concept, which is described similarly to transformational leadership. Charismatic leaders act in a unique manner that has special impacts on followers, acting not only as strong role models but also stimulating task-relevant motives. As one of the

most encompassing approaches to leadership, transformational leadership has been advocated by a great number of scholars from many sectors and has occupied a central role in research across different disciplines, such as business management, nursing, industry, social psychology, political science, and education (Northouse, 2016).

## Transformational leadership in Western literature

During the past four decades, transformational leadership has been widely researched in Western countries. During the mid-1980s, Bass (1985) expanded and refined transformational leadership theory, which was based on Burns' (1978) and House's (1976) but was not completely consistent with their works. Specifically, he first pointed out that transformational leadership and transactional leadership were not mutually independent and developed it into a continuum by adding seven factors that were shared by transformational leadership, transactional leadership, and laissesfaire leadership. Bass also incorporated emotional elements and origins of charisma from House's work. Consequently, a four-element factor model of transformational leadership was created by Bass and Avolio (1994), which includes (1) idealized influence, (2) inspirational motivation, (3) intellectual stimulations, and (4) individual consideration. Since then, transformational leadership research has been dominated by the acceptance of this four-element factor model (Liu, 2018). It should also be noted that the Multifactor Leadership Questionnaire (MLQ), which was developed by Bass in 1985 and was refined in later years, is currently the most widely adopted measurement of transformational leadership internationally (Liu, 2018).

In addition to Bass and Avolio's (1994) four-element factor model, researchers have conceptualized different models as well. For instance, Podsakoff et al. (1990) developed a six-dimension model that consists of (1) articulating a vision, (2) providing an appropriate model, (3) fostering the acceptance of group goals, (4) setting high performance expectations, (5) providing individualized support, and (6) offering intellectual stimulation. Kouzes and Posner (2002) proposed a five-practice model, including (1) model the way, (2) inspire a shared vision, (3) challenge the process, (4) enable others to act, and (5) encourage the heart. To measure the practices in this model, the authors developed the Leadership Practices Inventory, which is a 360° leadership assessment.

Although transformational leadership was born from nonschool contexts, it is currently attracting the attention of education researchers who are further developing the concept by incorporating the characteristics of school contexts and school leaders. Research on transformational leadership in educational settings was initiated by Leithwood and his colleagues in Canada (Geijsel et al., 2003). In 1999, Leithwood, Jantzi, and Steinbach identified three dimensions of TSL practices, including setting directions, developing people, and redesigning the organization. Later, Leithwood and Jantzi (2005) added a fourth dimension to their TSL model: managing the instructional program. Finally, Leithwood et al. (2006) proposed a full TSL model, which integrated many other

leadership models, such as instructional leadership and managerial leadership. This inclusion makes the new model more comprehensive and adaptable in educational settings. The seven dimensions include (1) building school vision and establishing school goals, (2) providing intellectual stimulations, (3) offering individual support, (4) modeling best practices and important organizational values, (5) demonstrating high performance expectations, (6) creating a productive school culture, and (7) developing structures to foster participation in school decisions. The authors also developed the TSL Scale to measure the practices of school leaders.

Research findings on the effects of TSL have demonstrated disparate outcomes (i.e., some direct vs. some indirect, some strong vs. some small, some significant vs. some non-significant etc.). For instance, Leithwood and Janzti (2005) conducted a systematic review of 32 peer-reviewed and empirical articles published between 1996 and 2005 to investigate the nature of transformational leadership and the effects of transformational leadership on students. Among the 32 articles, 15 studies examined the effects of transformational leadership on students (8 on academic achievement, 6 on student engagement, 1 on transition to tertiary education). The results of these 15 studies indicated mixed outcomes on student academic achievement (some positive and significant with a few nonsignificant), but uniformly positive for student engagement and transition to tertiary education (consistent positive and significant effect). Robinson et al. (2008) examined the impact of transformational leadership and instructional leadership on students' academic and nonacademic outcome by conducting a meta-analysis of 27 studies published from 1978 to 2006. They found the effect of transformational leadership on student outcomes was actually quite small compared to the effect of instructional leadership on student outcomes: The effect of instructional leadership was 3–4 times that of transformational leadership.

The complexity of the effects of TSL has been reinforced by these divergent research findings and calls for more research in the field. Pursuing this research topic is particularly important in non-Western countries, as leadership is contextual. Findings of studies conducted in Western countries may not apply in the Eastern world as educational and leadership cultures vary (Muijs, 2011).

## Transformational leadership studies in Chinese context

As previously mentioned, transformational leadership was introduced to China three decades ago. Since then, transformational leadership has gained extensive interests from Chinese scholars in different sectors, particularly the business sector. Nevertheless, systematic reviews on the effects of transformational leadership in Chinese context are still rare, with the exception of Liu's (2018) "Transformational Leadership Research in China (2005–2015)." This review examined 233 transformational leadership studies in Chinese language published between 2005 and 2015, including 38 theoretical studies and 195 empirical studies (183 quantitative, 4 qualitative, and 8 mixed method). Among the 233 studies, 203 articles/theses were from the management field, with only

30 articles/theses related to educational settings. This strongly suggests the lack of research on transformational leadership in Chinese school contexts.

More specifically, the theoretical studies were mainly reflections, riveting stories, and other forms of literature review, which mainly demonstrated Chinese scholars' theoretical understanding of transformational leadership. Thus, the author did not further analyze these nonempirical pieces. As for the 195 empirical studies, he found Chinese scholars preferred to conduct quantitative research and use existing survey questionnaires, particularly Bass and Avolio's MLQ for data collection. Additionally, he identified 23 mediators, among which psychological empowerment, self-efficacy, learning, leader–member exchange, organizational justice, and trust and atmosphere (culture, spirit, and climate) took the greatest percentage. Nevertheless, most of these mediators were related to the business management field with only two studies in educational settings. Although diverse outcome variables were adopted, research findings from these studies suggest significant relationships between transformational leadership and both individual-level (i.e., turnover intention, employees' voice and silence, job performance, organizational commitment, job satisfaction, and employees' creativity) and organizational-level variables (i.e., team performance, organizational citizen behavior [OCB]).

Despite the scarcity of systematic reviews on transformational leadership in China, the topic has been further developed by Chinese researchers by incorporating Chinese culture and organizational characteristics. This can be seen from the new models and measurements of transformational leadership proposed by Chinese scholars in the recent years, for example, C. Li and Shi's (2008) new transformational leadership model in Chinese business settings. Data were firstly collected from 249 managers and employees from a variety of enterprises located in seven cities (Beijing, Hangzhou, Xi'an, Guangzhou, Shenzhen, Zhengzhou, and Chongqing). The content analysis identified eight categories of transformational leadership. Then, the exploratory factor analysis of data from a sample of 431 employees found Chinese transformational leadership was a four-dimension model, including (1) moral modeling, (2) charisma, (3) articulate vision, and (4) individualized consideration. Based on these four dimensions, C. Li and Shi developed the 26-item Transformational Leadership Questionnaire (TLQ). A subsequent study confirmed the sound reliability of the TLQ, ranging from .84 to .92. There are similarities and differences between this new model and Bass and Avolio's four-element factor model. For instance, charisma and articulate vision are consistent with Bass's idealized influence and inspirational motivation. However, individualized consideration has a more extensive meaning than Bass and Avolio's individualized consideration. This dimension in the new model not only focuses on work but also the individual's family and personal life, while Bass and Avolio' s dimension focuses more on followers' work and personal development. C. Li and Shi claimed that moral modeling was a unique dimension in the Chinese transformational leadership model, which is quite culture-based. "Confucius believed that fostering individual's personality and virtue are the foundation of the

society" (C. Li & Shi, 2008, p. 588). As a result, Chinese people consider moral modeling as one of the most significant dimensions for a leader. Similarly, Liu (2013) identified 29 effective leadership practices in the Chinese urban upper secondary school change context and formulated a Chinese TSL questionnaire. He developed an open-ended questionnaire based on Leithwood's (1994) transformational leadership theory. The questionnaires were distributed to 273 teachers from three schools. Content analysis was conducted to identify key words. As a result, a 46-item questionnaire was created for principal component analysis, and a total of 29 items were extracted for the final TSL questionnaire. Twelve practices were shared by Eastern and Western cultures, while 17 were unique to the Chinese context.

The past three decades have seen increasing popularity of transformational leadership research in China. Liu (2015) contended that "transformational leadership provides an appropriate model to analyze leadership in China" (p. 736). Nevertheless, no systematic reviews have been conducted on TSL research as of yet. A systematic review will not only help us to better understand current theories and practices but also lay the groundwork and identify direction for future research (Hallinger, 2013, 2014), which is also the main objective of this literature review.

## Research methods

### Data sources and search criteria

The criteria for inclusion of research studies in this review were as follows:

- Research studies on the effects of TSL,
- Studies conducted in Chinese K–12 settings,
- Time boundary: 2010–2019,
- Empirical studies (quantitative, qualitative, and/or mixed method),
- Study type: peer-reviewed articles, doctoral dissertations, and masters' theses,
- Language: both Chinese and English.

Four searches were conducted to identify high-quality research. The first search utilized the "Chinese National Knowledge Infrastructure," the "Chinese master's theses full-text database," and the "Chinese doctoral dissertation full-text database" as the main sources. The Chinese version of transformational leadership: "转换型领导" yielded 43 studies and "变革型领导" yielded 3,050 studies. The abstracts and introductions were reviewed to locate studies that matched the scope of this literature review. Many of the studies were either theoretical pieces or focused only on business settings. After careful review, only 18 studies were identified. For English language articles, "Education Source" was utilized. This comprehensive search engine of major English language journals primarily publishes educational leadership journals such as *Educational*

*Administration Quarterly*, *Education Management Administration and Leadership*, and *Journal of School Leadership*. The key words "transformational leadership" and "China" were used and 45 pieces were found; however, only 2 fit the criteria to be included in this review. After reviewing the literature reviews and references of the identified English language and Chinese language studies, two more studies were added. Finally, to ensure all articles on the topic were captured, *Journal of School Leadership*, *Educational Administration Quarterly Journal*, and *Education Management Administration and Leadership*, issues from 2010–2019, were searched individually and one more study was added. Thus, 23 articles/theses in total were examined at the beginning stage.

## Data extraction and data analysis

The descriptive information of each article, including authors, year, type of study (publication or nonpublication), resources, research methods, and publication language, was extracted first. Then, each article was synthesized based on the topic, purpose, abstract, research questions, methodology, results, findings, conclusions, limitations, and future research possibilities to better understand the interconnections between studies. During this stage, five studies were excluded. Three studies mainly focused on the nature and measurement of TSL, rather than the effects of TSL on educational outcomes, and two masters' theses shared the same data and same findings. As a result, the two masters' theses were excluded and the published ones were retained. Eighteen studies were included in this review (see Table 1). Lastly, information was extracted according to the four guiding questions: (1) What recurring concepts and measurements have been used in studying TSL in China? (2) What common variables have been examined in these studies? (3) What models have been adopted in these studies (i.e., direct vs. indirect)? (4) What are the major effects of TSL from these studies?

Vote counting method and narrative synthesis were applied in this review. Although meta-analysis is always a good choice when conducting a review of this nature, this form of analysis was not chosen for specific reasons. The purpose of meta-analysis is to make a general statement about the link between two variables (Cooper et al., 2008), while this review intended to critically evaluate the existing studies to point out future directions rather than to make a general conclusion. Furthermore, meta-analysis is inappropriate when conceptual and methodological approaches on a topic change over time. This review identified several conceptual frameworks of TSL and included one qualitative study. Hence, a vote counting method was more appropriate for this review. More specifically, "vote-counting reviews advance narrative review methods by counting the numbers of studies providing evidence about the same phenomenon" (Leithwood & Sun, 2012, p. 389). Thus, the studies reporting similar results were counted (i.e., how many outcome/mediating variables examined in these studies, how many studies utilized direct/indirect effects model, how many studies reported significant and direct effects). This procedure helped to portray the current

**Table 1.** Studies on the effect of transformational school leadership in China (2010–2019).

| No. | Author(s) | Year | Journal/University | Type of study | Research method | Language |
|---|---|---|---|---|---|---|
| 1 | D. Li | 2010 | Suzhou University | Master's thesis | Quantitative | Chinese |
| 2 | H. Chen | 2013 | Henan University | Master's thesis | Quantitative | Chinese |
| 3 | L. Wang et al. | 2013 | *Educational Measurement and Evaluation* | Peer-reviewed | Quantitative | Chinese |
| 4 | Y. Wang and Pan | 2014 | *Educational Research* | Peer-reviewed | Quantitative | Chinese |
| 5 | J. Mao and Tan | 2015 | *Teacher Education Research* | Peer-reviewed | Quantitative | Chinese |
| 6 | Liu | 2015 | *Journal of Educational Administration* | Peer-reviewed | Quantitative | English |
| 7 | W. Sun | 2016 | Hunan University | Master's thesis | Quantitative | Chinese |
| 8 | S. Wang and Tian | 2016 | *Journal of East China Normal University (Educational Sciences)* | Peer-reviewed | Quantitative | Chinese |
| 9 | J. Mao et al. | 2017 | *Teacher Education Research* | Peer-reviewed | Quantitative | Chinese |
| 10 | Z. Chen | 2017 | Guangxi University | Master's thesis | Quantitative | Chinese |
| 11 | Yang | 2017 | Jiangxi Normal University | Master's thesis | Quantitative | Chinese |
| 12 | Dou et al. | 2017 | *Educational Management Administration and Leadership* | Peer-reviewed | Quantitative | English |
| 13 | L. Li et al. | 2018 | *Journal of Educational Studies* | Peer-reviewed | Quantitative | Chinese |
| 14 | Nie | 2018 | Southwest University | Master's thesis | Quantitative | Chinese |
| 15 | Hou | 2018 | *Education Science* | Peer-reviewed | Quantitative | Chinese |
| 16 | S. Wang | 2019 | *Asian Pacific Education Review* | Peer-reviewed | Quantitative | English |
| 17 | Deng | 2019 | *Zhejiang Education Science* | Peer-reviewed | Qualitative | Chinese |
| 18 | S. Li | 2019 | Shenyang Normal University | Master's thesis | Quantitative | Chinese |

research trends in China by identifying the most popular concepts, measurements, and variables in transformational leadership studies as well as the distribution of the results from these studies. To supplement the vote counting method, a narrative synthesis was used to further interpret the major findings (i.e., the mechanism of how the effects of TSL function).

## Findings

Based on the synthesis of these 18 studies, findings are grouped into the following five sections:

### General findings

There were 18 empirical studies on the effects of transformational leadership in Chinese K–12 settings over the past decade, the majority conducted in the past 3 years. Despite the overall small

number, it can be seen that transformational leadership has attracted continuous and increasing interest in Chinese school contexts. However, as the majority of the studies were conducted in Chinese ($n = 15$) with only three in English, non-Chinese speaking scholars may have limited access to information regarding TSL research in China. As for the publication status of the 18 studies, 11 were published in peer-reviewed journals and 7 were master's theses. This indicates an increasing interest from Chinese educational scholars and graduates in the TSL concept. However, more peer-reviewed articles are in demand. As for the research methods, there were 17 quantitative studies and 1 qualitative study, which is consistent with Liu's (2018) review that Chinese scholars preferred quantitative research methods in studying transformational leadership.

### What recurring concepts and measurements have been used in TSL studies in China?

According to the results of vote counting, the concepts and measurements of TSL in these studies can be categorized into the following four groups (see Table 2):

(1) C. Li and Shi's (2008) four-dimension model, including moral modeling, charisma, articulate vision, and individualized consideration, as measured by their TLQ ($n = 7$);

(2) Bass and Avolio's (1994) four-element factor model, including idealized influence, inspirational motivation, intellectual stimulations, and individual consideration, as measured by their MLQ ($n = 6$);

(3) Leithwood and Jantzi's (2005) four dimensions, including setting direction, developing people, redesigning the organization, and managing the instructional program, as measured by Liu's (2013) Chinese TSL Questionnaire or other revised existing scale ($n = 2$);

(4) Other concepts and measurements that were drawn upon previous studies ($n = 2$).

As can be seen, C. Li and Shi's (2008) four-dimension model and their TLQ was utilized in the majority of the studies ($n = 7$), followed by Bass and Avolio's (1994) four-element factor model and their MLQ ($n = 6$). This finding is slightly different from Liu's (2018), as he found Bass's theory was the most popular while C. Li and Shi's ranked the second in his review. This indicates that Chinese educational scholars are focusing on indigenous studies of transformational leadership, despite the fact that C. Li and Shi's (2008) concept and measurement originated in a Chinese business setting.

Furthermore, reliability and validity are two important indicators of the measurements, and the reliability calculation is Cronbach's α. The majority of these studies ($n = 15$) reported the validity and reliability; one study ($n = 1$) indicated the validity and reliability from previous studies. Furthermore, the majority of the studies reported excellent or good overall reliability of their instruments ranging from .875 to .971, although some of the measurements' dimensions have shown lower scores. For instance, one study adopted Bass and Avolio's MLQ and the Cronbach's

**Table 2.** Transformational leadership concepts and measurements in transformational school leadership studies (2010–2019).

| Author(s)/ Year | Concept of transformational leadership | Instrument of measurements | Validity and reliability |
| --- | --- | --- | --- |
| D. Li (2010) | C. Li and Shi's (2008) four-dimension model | TLQ | $\alpha$ = .955 (moral modeling $\alpha$ = .94, articulate vision $\alpha$ = .90, individualized consideration $\alpha$ = .87, charisma $\alpha$ = .86) |
| H. Chen (2013) | C. Li and Shi's (2008) four-dimension model | TLQ | $\alpha$ = .97 (moral modeling $\alpha$ = .94, articulate vision $\alpha$ = .94, individualized consideration $\alpha$ = .93, charisma $\alpha$ = .92) |
| L. Wang et al. (2013) | Bass and Avolio's (1994) four-element factor model | MLQ | $\alpha$ = .92 (idealized influence $\alpha$ = .82, inspirational motivation $\alpha$ = .80, intellectual stimulation $\alpha$ = .58, individual consideration $\alpha$ = .86) |
| Y. Wang and Pan (2014) | C. Li and Shi's (2008) four-dimension model | TLQ | Moral modeling $\alpha$ = .917, articulate vision $\alpha$ = .898, individualized consideration $\alpha$ = .889, charisma $\alpha$ = .883 |
| J. Mao and Tan (2015) | C. Li and Shi's (2008) four-dimension model | TLQ | $\alpha$ = .92 (ranged from .913 to .939) |
| Liu (2015) | Leithwood and Janzti's (2005) four dimensions | Liu's (2013) Chinese Transformational School Leadership Questionnaire | Indicated from previous studies |
| W. Sun (2016) | C. Li and Shi's (2008) four-dimension model | TLQ | $\alpha$ = .92 (moral modeling $\alpha$ = .73, articulate vision $\alpha$ = .85, individualized consideration $\alpha$ = .73, charisma $\alpha$ = .72) |
| S. Wang and Tian (2016) | Bass and Avolio's (1994) four-element factor model | MLQ 6S | $\alpha$ = .916 (idealized influence $\alpha$ = .74, inspirational motivation $\alpha$ = .711, intellectual stimulation $\alpha$ = .759, individual consideration $\alpha$ = .757) |
| Mao et al. (2017) | C. Li and Shi's (2008) four-dimension model | TLQ | $\alpha$ = .930 (moral modeling $\alpha$ = .939, articulate vision $\alpha$ = .917, individualized consideration $\alpha$ = .913, charisma $\alpha$ = .932) |

*(continued)*

**Table 2.** (continued)

| Author(s)/ Year | Concept of transformational leadership | Instrument of measurements | Validity and reliability |
|---|---|---|---|
| Z. Chen (2017) | Bass and Avolio's (1994) four-element factor model | MLQ 6S | $\alpha$ = .919 |
| Yang (2017) | "Transformational leadership behaviors include: 1) to obtain unique charisma and ability to inspire motivation; 2) to express high expectations for followers and cultivate followers; 3) to provide intellectual stimulation; 4) to recognize followers' achievement and make followers willing to work" (p. 4) | Wang and Howell's (2010) Questionnaire | $\alpha$ = .96 (articulate vision $\alpha$ = .91, intellectual stimulation $\alpha$ = .92, followers' cultivation $\alpha$ = .87, performance recognition $\alpha$ = .92) |
| Dou et al. (2017) | Leithwood and Jantzi's (1999) theory | Self-designed, based on the existing ones | $\alpha$ = .875 |
| Li et al. (2018) | Bass and Avolio's (1994) four-element factor model | MLQ | $\alpha$ = .971 (idealized influence $\alpha$ = .867, inspirational motivation $\alpha$ = .935, intellectual stimulation $\alpha$ = .944, individual consideration $\alpha$ = .955) |
| Nie (2018) | "Transformational leaders should be able to: 1) construct visions; 2) improve followers' recognition of the visions through personal charisma; 3) stimulate higher level demands; 4) encourage followers to propose innovative strategies; 5) build effective interactions with followers" (p. 13) | Self-designed, based on the existing ones | Idealized influence $\alpha$ = .970, articulate vision $\alpha$ = .984, intellectual stimulation $\alpha$ = .983, individual consideration $\alpha$ = .983 |

**Table 2.** (continued)

| Author(s)/ Year | Concept of transformational leadership | Instrument of measurements | Validity and reliability |
|---|---|---|---|
| Hou (2018) | Bass and Avolio's (1994) four-element factor model | MLQ | $\alpha$ = .890 |
| S. Wang (2019) | Bass and Avolio's (1994) four-element factor model | MLQ 6S | $\alpha$ = .916 |
| S. Li (2019) | C. Li and Shi's (2008) four-dimension model | TLQ | $\alpha$ = .936 (moral modeling $\alpha$ = .838, articulate vision $\alpha$ = .844, individualized consideration $\alpha$ = .846, charisma $\alpha$ = .823) |

Note. TLQ = Transformational Leadership Questionnaire; MLQ = Multifactor Leadership Questionnaire.

α of the four dimensions ranged from .711 to .759, which was still acceptable. Thus, it is difficult to conclude which instrument is more applicable in Chinese school contexts, which calls for more empirical studies.

## What common variables have been examined in these studies?

Of the 17 quantitative studies in this review, a total of 12 major outcome variables were identified (see Table 3) and categorized into three groups:

(1) Nine ($n$ = 9) teacher-level variables: teachers' commitment (also known as teachers' organizational commitment), teachers' work engagement, teachers' job satisfaction, teachers' leadership, teachers' commitment to change, teachers' job performance, job burnout, teaching innovation, turnover intention;

(2) Two ($n$ = 2) school-level variables: OCB, organizational silence;

(3) One ($n$ = 1) student-level variable: students' modernity development.

As for the mediating variables identified from these studies, there were 14 in total that were divided into two groups:

(1) Seven ($n$ = 7) teacher-level variables: teachers' commitment, teachers' self-efficacy, teachers' job engagement, workplace friendship, psychological empowerment, psychological capital, psychological contract;

(2) Seven ($n$ = 7) school-level variables: organizational innovation atmosphere, person-organizational fit, school's organizational innovation, school climate, organizational atmosphere, organizational trust, perceived organizational support.

**Table 3.** Summary of variables, models, and effects of transformational school leadership studies in China (2010–2019).

| Author(s)/Year | Effect models | Outcome variables | Mediating variables | Data analysis | Results | Effects (conclusion) |
|---|---|---|---|---|---|---|
| D. Li (2010) | Both direct and indirect | Teachers' commitment, teachers' job satisfaction | Teachers' commitment | Structural equation modeling | $X^2 = 496.73$ ($df = 74$), GFI = .77, NFI = .75, IFI = .77, TFI = .72, CFI = .77, RMSEA = .169 | Transformational leadership could positively predict teachers' commitment and teachers' job satisfaction. Teachers' commitment mediated the effects of transformational leadership on teachers' job satisfaction |
| H. Chen (2013) | Indirect | OCB, turnover intention | Teachers' commitment | Multiple regression (stepwise) | $\beta = .474$, $p < .01$ $\beta = -.216$, $p < .01$ | Transformational leadership was positively related to teachers' commitment and OCB and negatively related to turnover intention, teachers' commitment mediated the effects of transformational leadership on OCB and teachers' turnover intention |
| L. Wang et al. (2013) | Indirect | Teachers' leadership | Organizational atmosphere | Structural equation modeling | $X^2 = 86.59$ ($df = 3.25$) RMSEA = .078, NNFI = .96, CFI = .97 | Transformational leadership was positively related to all dimensions of organizational atmosphere and teachers' leadership. Organizational atmosphere fully mediated the effects of transformational leadership on teachers' leadership |

**Table 3.** (continued)

| Author(s)/Year | Effect models | Outcome variables | Mediating variables | Data analysis | Results | Effects (conclusion) |
|---|---|---|---|---|---|---|
| Y. Wang and Pan (2014) | Indirect | Teachers' organizational silence | Organizational trust, psychological empowerment | Structural equation modeling | RMSEA = .077, GFI = .98, NFI = .98, NNFI = .97, CFI = .99, IFI = .99 | Organizational trust mediated the effects of transformational leadership on teachers' organizational silence, but psychological empowerment did not |
| J. Mao and Tan (2015) | Indirect | Teachers' work engagement | Psychological capital | Hierarchical regression | $b = .078, p < .05$ $b_1 = .551, p < .05$ | Psychological capital mediated the effects of transformational leadership on teachers' work engagement |
| Liu (2015) | Direct | Teachers' commitment to change | | Multiple regression | $R^2 = 38.7\%$ | The effects of transformational school leadership was moderate when transformational leadership and teachers' commitment were treated as single variables |
| W. Sun (2016) | Indirect | Teachers' job performance | Workplace friendship, teachers' work engagement | Multiple regression | $\beta_0 = .399\ (p < .01)$ $\beta_1 = .265\ (p < .01)$ $\beta_2 = .144$ $(p < .01)$ | Teachers' work engagement and workplace friendship partially mediated the effects of transformational leadership on teachers' job performance |
| S. Wang and Tian (2016) | Direct | Students' modernity development | | Hierarchical regression | $\Delta R^2 = .166\ (p < .05)$ $\Delta R^2 = .012\ (p < .05)$ | Compared with transactional leadership, transformational leadership has more and stronger power on the explanation of students' modernity development |

**Table 3.** (continued)

| Author(s)/Year | Effect models | Outcome variables | Mediating variables | Data analysis | Results | Effects (conclusion) |
|---|---|---|---|---|---|---|
| Mao et al. (2017) | Direct | Teachers' work engagement | | Hierarchical regression | $\triangle R^2 = .073/.063/.030$ ($p < .01$) $\triangle R^2 = .019/.007/ .000$ ($p < .01$) | Compared with authentic leadership, transformational leadership has more predictive power on the dimensions of teachers' work engagement |
| Z. Chen (2017) | Indirect | Teachers' commitment | Organizational innovation atmosphere | Multiple regression | $ab/c = .672 \times .52/.56 =$ 62.4% | Organizational innovation atmosphere mediated the effects of transformational leadership on teachers' commitment |
| Yang (2017) | Indirect | Job burnout | Perceived organizational support | OLS regression | $R^2 = 51\%$ $\beta_1 = -.29$ ($p <$ .001) $\beta_2 = .00$ | Perceived organizational support fully mediated the effects of transformational leadership on teachers' job burnout |
| Dou et al. (2017) | Indirect | Teachers' job satisfaction, teachers' organizational commitment | School climate, teachers' self-efficacy | Path modeling | $X^2 = 24.185$ ($p < .00$); CFI = .987, GFI = .986, RMSEA = .066, SRMR = .034 | Both transformational leadership and instructional leadership have a tremendous yet indirect influence on teachers' job satisfaction and teachers' commitment through school climate and teachers' self-efficacy |
| Li et al. (2018) | Direct | Teachers' commitment | | Structural equation modeling | $X^2/df = 2.437$ GFI = 1.000, NFI = 1.000, IFI = 1.000, CFI = 1.000, RMSEA = .042 | The four dimensions of transformational leadership could significantly and positively predict teachers' commitment |

**Table 3.** (continued)

| Author(s)/Year | Effect models | Outcome variables | Mediating variables | Data analysis | Results | Effects (conclusion) |
|---|---|---|---|---|---|---|
| Nie (2018) | Indirect | Teachers' commitment | Person-organizational fit | Structural equation modeling | $X^2/df = 3.603$ CFI = .933, RMSEA = .077 | Person-organizational fit mediated the effects of transformational leadership on teachers' commitment |
| Hou (2018) | Indirect | Teaching innovation | School's organizational innovation | Structural equation modeling | $X^2/df = 9.40$ RMSEA = .14 | School's organizational innovation partially mediated the effects of transformational leadership on teachers' teaching innovation |
| S. Wang (2019) | Indirect | Students' modernity | School climate | Structural equation modeling | $X^2/df = 2.386$ GFI = .891, NFI = .907, IFI = .944, CFI = .943, RMSEA = .061 | School climate partially mediated the effects of transformational leadership on students' modernity |
| S. Li (2019) | Indirect | Teachers' commitment | Psychological contract | Multiple regression | $R^2 = 38.5\%$ $ab/c = 41.39\%$ | Psychological contract partially mediated the effects of transformational leadership on teachers' commitment |

*Note.* OCB = organizational citizenship behavior; RMSEA = root mean square error of approximation; CFI = comparative fit index; IFI = incremental fit index; NFI = normed fit index; GFI = goodness-of-fit index; SRMR = standardized root mean square residual; NNFI = non-normed fit index; TFI = Tucker–Lewis index.

As can be seen, both outcome variables and mediating variables have shown quite a divergent picture. For the group of outcome variables, studies with teacher-level variables accounted for the majority. The most common outcome variables were teachers' commitment ($n = 6$ studies), teachers' job satisfaction ($n = 3$ studies), teachers' work engagement ($n = 2$ studies), and students' modernity development ($n = 2$ studies). Teachers' commitment and school climate were the most common mediating variables, each attracting two studies. Most of these outcome and mediating variables, such as teaching innovation, teachers' leadership, organizational trust, and so on, only appeared once in these studies. This indicated the lack of the accumulated knowledge regarding the effects of TSL in China at present. Furthermore, many of these variables were from the business management field (i.e., psychological empowerment, psychological capital, psychological contract, organizational atmosphere, organizational trust). This strongly suggests that studies on specific education-related variables should be encouraged, such as student engagement, student achievement, and so on.

## What effects models have been adopted in these studies?

Hallinger (2008) developed an effects model of educational leadership that consists of five types of causal model: (A1) direct effects model, (A2) direct effects with antecedents' model, (B1) mediated effects model, (B2) mediated effects with antecedents' model, and (C) reciprocal effects model. The 17 quantitative studies were sorted based on these five models (see Table 3), with the majority ($n = 13$) utilizing the mediated effects model (indirect) and four studies ($n = 4$) utilizing the direct effects model. In other words, most of these studies tested the effects of transformational leadership through the mediators on the outcome variables. Hence, it seems that Chinese educational scholars focused more on the indirect effects of TSL. However, no studies have utilized the other three model types (direct effects with antecedent model, mediated effects with antecedents' model, reciprocal effects model).

Regression and structural equation modeling (SEM) are the most popular data analysis techniques in these studies, not surprising as the two are the most widely used statistical methods to test mediated effects (S. Li, 2011). Specifically, nine studies used regression analysis, seven studies used SEM, and one study used path modeling. In spite of different models and data analysis techniques used in these studies, nearly all studies have proven the effects of TSL. The effects included both direct and indirect effects, and the indirect effects are either partial or full through the mediating variables.

## What major effects of TSL have been found from these studies?

As can be seen from Table 3, diverse outcome variables for the 17 quantitative studies have been examined. Based on the levels of the outcome variables, these studies were categorized into three

groups: (1) teacher-level variables ($n$ = 13 studies), (2) teacher- and school-level variables ($n$ = 2 studies), and (3) student-level variable ($n$ = 2 studies).

## Studies with teacher-level variables

Thirteen studies mainly focused on the effects of TSL on teacher-level outcome variables. Among the 13 studies, two treated both teachers' commitment and teachers' job satisfaction as the outcome variables (one study used both direct and mediated effects models and one study used mediated effects model). Four studies focused exclusively on the effects on teachers' commitment (one study used direct effects model and three mediated effects model). Two studies investigated the effects of TSL on teachers' work engagement (one used direct effects model and one mediated effects model). The other five studies assessed the effects of TSL on teachers' job performance, teachers' commitment to change, teachers' job burnout, teaching innovation, and teachers' organizational silence, respectively (one used direct effects model and four mediated effects model).

*Teachers' commitment and teachers' job satisfaction (n = 6).* Two studies examined the effects of TSL on both teachers' commitment and teachers' job satisfaction. Specifically, D. Li (2010) investigated the relationship among principals' transformational leadership, teachers' commitment, and teachers' job satisfaction. A hierarchical regression analysis suggested that principal's transformational leadership positively predicted teachers' commitment and teachers' job satisfaction. Although the author concluded that teachers' commitment mediated the effects of TSL on teachers' job satisfaction, the indicators of the SEM were not ideal (comparative fit index [CFI] = .77, root mean square error of approximation [RMSEA] = .169), as the author claimed that the model needed further modification. Dou et al. (2017) developed a path model to examine how school climate and teachers' psychological factors mediated the relationships among principal's leadership, teachers' job satisfaction, and teachers' organizational commitment. Different from D. Li's (2010) study, they combined both instructional and transformational leadership as the ascendant variables. The test of the path model showed an acceptable goodness of fit, $\chi^2$ = 24.185 ($p$ < .00); CFI = .987, goodness-of-fit index [GFI] = .986, RMSEA = .066, standardized root mean square residual = .034, which suggested that principals' transformational and instructional leadership, school climate, and teachers' self-efficacy all have significant and positive impacts on teachers' organizational commitment ($R^2$ = 34%) and teachers' job satisfaction ($R^2$ = 30%). Transformational leadership showed indirect effects on teachers' job satisfaction (.20) and teachers' organizational commitment (.21), while the effects of instructional leadership are .23 and .25, respectively. However, teacher autonomy had no significant influence on these two teacher-level outcome variables. The study supported that instructional and transformational leadership were both important. Furthermore, they compared the variables among three levels of school autonomy gap and

found schools with a larger autonomy gap tended to show stronger leadership, a more positive school climate and higher levels of teachers' self-efficacy, teachers' job satisfaction, and organizational commitment compared to schools with a smaller autonomy gap.

The other four studies exclusively focused on teachers' commitment as the outcome variable. Li et al. (2018) examined the direct effects of transformational leadership on teachers' commitment; the results of multiple regression analysis showed that transformational leadership could significantly and positively predict teachers' commitment ($R^2$ = 68.4%). Other studies tested the effects by examining different mediating factors on the link between transformational leadership and teachers' commitment (Z. Chen, 2017; S. Li, 2019; Nie, 2018). Specifically, Z. Chen (2017) compared the effects of transformational leadership and transactional leadership on teachers' commitment by testing the mediating role of organizational innovation atmosphere. The results showed that transformational leadership could explain 42.8% of the variance in teachers' commitment, while transactional leadership could explain 36.7% of the variance in teachers' commitment. Moreover, the mediating effects of organizational innovation for transformational leadership and teachers' commitment were 62.4%, and 73.41% for transactional leadership and teachers' commitment, thus indicating that organizational innovation partially mediated the effects of both leadership on teachers' commitment. Nie (2018) focused on the mediating role of person-organizational fit on this link. Person-organizational fit is a concept that is generally defined as "compatibility between employees and their organizations, this kind of compatibility can lead to the positive impact on both individuals and the organizations" (Nie, 2018, p. 19). Three kinds of person-organizational fit were examined: demand-supply fit, requirement-ability fit, and value fit. The conclusion from this study was demand-supply fit and requirement-ability fit mediated the effects of transformational leadership on teachers' commitment, whereas the value fit did not. Similarly, S. Li (2019) explored the mediating effects of psychological contract between transformational leadership and teachers' commitment. Research findings from this study demonstrated a partial mediating effect of psychological contract with a total mediating effect of 41.39%.

*Teachers' work engagement (n = 2).* Teachers' work engagement was also a popular topic featured in two studies. Both studies consistently showed the positive relationship between TSL and teachers' work engagement. J. Mao and Tan (2015) explored the mediating effect of psychological capital between TSL and teachers' work engagement. Psychological capital refers to a kind of positive psychological state during an individual's growth and development. Two forms of psychological capital, task-oriented psychological capital and interpersonal-oriented psychological capital, were examined. The authors concluded that transformational leadership could positively predict teachers' work engagement, while teachers' task-oriented psychological capital mediated the effects of transformational leadership on teachers' work engagement. This may imply that if

school leaders help teachers to maintain an optimistic and positive outlook at work, teachers will be more engaged. Mao et al.'s (2017) study was slightly different. A direct effects model was utilized to compare the effects of transformational leadership and authentic leadership on three dimensions of teachers' work engagement: vigor, contribution, and absorption. Their findings demonstrated that although both transformational leadership and authentic leadership were significantly and positively correlated with teachers' work engagement, transformational leadership (vigor 7.3%, contribution 6.3%, and absorption 3%) accounted for more variance of teachers' work engagement than authentic leadership (vigor 1.9%, contribution 0.7%, and absorption 0%) after excluding the effects of demographic variables. Thus, they concluded that TSL had more power on the prediction of teachers' work engagement than authentic leadership.

*Other teacher-level variables (n = 5).*

- L. Wang et al. (2013) tested the mediating effects of organizational atmosphere between transformational leadership and teachers' leadership. The results suggested the full mediated model was accepted (RMSEA = .078, non-normed fit index = .96, CFI = .97), which implied that the effects of transformational leadership on teachers' leadership completely relied on the effects of organizational atmosphere.
- J. Wang and Pan's (2014) study did not support the mediating effects of psychological empowerment between transformational leadership and teachers' organizational silence. Nevertheless, organizational trust was found to fully mediate this effect (RMESA = .077, GFI = .98, CFI = .99).
- Liu (2015) analyzed the direct effects of TSL on teachers' commitment to change. The results showed that the overall TSL was 38.7% of the variance of teachers' commitment to change, which was a "moderate" effect.
- W. Sun (2016) introduced workplace friendship and teachers' work engagement as the mediating factors between TSL and teachers' job performance. This study confirmed the mediating effects of workplace friendship ($\beta_2$ = .144, $p < .01$) and teachers' work engagement ($\beta$ = .265, $p<.01$) between transformational leadership and teachers' job performance.
- Hou (2018) compared the effects of transformational leadership and transactional leadership on teaching innovation through testing the mediating effects of school's organizational innovation. The findings showed that the effects of transformational leadership on teaching innovation were much stronger ($r$ = .61, $p < .01$) than transactional leadership ($r$ = .38, $p < .01$). Furthermore, teaching innovation partially mediated the effects of transformational leadership on teaching innovation while fully mediated the effects of transactional leadership on teaching innovation.

## Studies with both teacher-level and school-level variables

Both studies in this group used mediated effects models. However, the results were different, as one study rejected the effects of the mediating factor (psychological empowerment), while the other one confirmed the indirect effects of transformational leadership on both teacher-level and school-level outcome variables. H. Chen (2013) explored whether teachers' commitment mediated the effects of transformational leadership on teachers' OCB and teachers' turnover intention in kindergartens. The findings suggested that transformational leadership positively correlated with teachers' OCB ($r = .546$, $p < .01$) and negatively correlated with teachers' turnover intention ($r = -.494$, $p < .01$). Moreover, teachers' commitment mediated the effects of transformational leadership on teachers' OCB ($\beta = .474$, $p < .01$) and turnover intention ($\beta = -.216$, $p < .01$). This may imply that teacher commitment will improve when principals adopt transformational leadership style. Consequently, the teacher would show more OCB and less turnover intentions (p. 33). Yang (2017) explored the mediating effects of teachers' perceived organizational support between transformational leadership and teachers' job burnout. This study concluded that teachers' organizational perceived support fully mediated the effects of transformational leadership on teachers' job burnout ($\beta_2 = .00$). This implies that transformational principals could alleviate job burnout by improving teachers' perceived organizational support.

## Studies with student-level variable

There were only two studies with the same student-level outcome variable examined. Specifically, S. Wang and Tian (2016) used hierarchical regression analysis to compare the effects of transformational leadership and transactional leadership on students' modernity development in western China. They found that although both leadership styles were positively associated with the dimensions of students' modernity development, transformational leadership ($r = .373$ to $.579$) was more closely correlated with students' modernity development than transactional leadership ($r = .239$ to $.478$). When excluding the effects of the controlled variables, transformational leadership still significantly and positively predicted students' modernity development ($\triangle R^2 = .166$, $p < .05$), while transactional leadership only accounted for a quite small variance of students' modernity development ($\triangle R^2 = .012$, $p < .05$). Thus, they concluded that transformational leadership had more effects than transactional leadership with respect to improving students' modernity development. In line with S. Wang and Tian's (2016) study, S. Wang (2019) claimed that the correlation between transformational leadership and students' modernity was positively significant ($r = .624$, $p < .01$), and the effects of school principals' transformational leadership on students' modernity were partially mediated by school climates ($\beta = .35$, $p < .01$). More specifically, the three dimensions of school climates accounted for 35.1% of the total indirect effects, including innovation climate (15.6%), justice climate (11.7%) and affiliation climate (7.8%). Simply put, "school

principals should try to establish a harmonious school climate with a high level of innovation, affiliation, and justice to facilitate students' modernity development, with special focus on the innovation climate" (p. 338).

### Qualitative study

Deng (2019) conducted a qualitative case study in Shanghai to investigate how transformational leaders impacted teachers through inspirational motivation and intellectual stimulation. The subject was a principal who had been in the same school and position for more than 20 years. The interview questions were revised from Bass and Avolio's (1994) MLQ, and some new questions were added based on the actual situation. The interview data revealed that inspirational motivation played a key role during the turbulence at school due to the national curriculum reform in China. The principal not only explained the new curriculum to the teachers but also let them know how to present it by setting examples. More importantly, he articulated a clear vision for the school, which activated the innovation climate. All these behaviors inspired teachers' motivation, which helped the school through the most challenging period. Moreover, the principal always used "our family" to describe school and "our children" to describe students. He found that by using these metaphors, teachers felt their jobs were more meaningful, which, in actuality, was another form of inspirational motivation. As for the intellectual stimulation, the principal established a curriculum-based research and action system that aimed to promote collaborations among teachers so as to improve their abilities when facing new challenges. This kind of intellectual stimulation largely enhanced teachers' confidence and improved the cohesion among them.

In effect, the research findings from these 18 studies were quite meaningful for Chinese policymakers and school leaders, as they have provided strong evidence that TSL in Chinese K–12 settings has effects on all three-level variables. Although the outline seemed to be a bit of rough due to various outcome variables and mediating variables, the present study still elaborates on how TSL works in Chinese K–12 settings, which provided policymakers and school leaders with a number of tactics and strategies to attain positive school outcomes.

## Conclusion and implications

This literature review examined 18 empirical studies published between 2010 and 2019 in Chinese K–12 settings to investigate the effects of TSL. Four research questions guided this review. Overall, research on transformational leadership in Chinese educational context is still "in its infancy" (Liu, 2018, p. 386) with a relatively small number of empirical studies. This is also consistent with findings from Walker's et al.'s (2012) review of Chinese principal leadership. By reviewing literature on principalship in both English and Chinese between 1998 and 2008, they contended that "a lack of rigorous empirical study remains a feature of education research in

China" (p. 375). To establish a firm foundation of educational leadership research in China, more high-quality empirical research is in a great demand. Moreover, as can be seen that quantitative studies are playing a dominant role among the empirical studies reviewed in the current study, which reflects that Chinese scholars still tend to consider quantitative method as more advanced. Admittedly, quantitative studies may produce more objective findings that may be more convincing and qualitative and mix-method studies will be able to deepen understanding of how and why a certain type of school leadership works. Thus, qualitative and mix-method studies should be encouraged.

The first question focused on recurring concepts and measurements used in extant studies on TSL in China. This review found the most popular TSL concept and measurement was C. Li and Shi's (2008) four-dimension model as measured by their TLQ and Bass and Avolio's (1994) four-element factor model as measured by their MLQ took the second place. Although C. Li and Shi's (2008) concept and measurement originated in the Chinese business sector, it seemed to be widely accepted by Chinese education scholars. This implies that studies on transformational leadership in Chinese school context are becoming more indigenous. However, leadership should be situated in both institutional and cultural settings (Chen & Ke, 2014), and the role of Chinese principals may be different from the managers in Chinese enterprises and their counterparts in the Western countries. In this sense, TSL may have different patterns of manifestation in Chinese K–12 settings. Educational leadership scholars should take both the cultural and institutional contexts that Chinese school principals are situated into consideration to develop new concepts and measurements that are more applicable in Chinese educational settings.

In answer to the second question regarding the common variables in these studies, 12 major outcome variables and 14 mediating variables were identified, which were quite diverse. This also suggests the lack of the accumulated knowledge regarding the effects of TSL in China, as there were only a few studies on the same topic (i.e., effects on teachers' commitment). Furthermore, the 12 major outcome variables included nine teacher-level variables, two school-level variables, and one student-level variable. Obviously, future studies should expand the scope of school-level variables and student-level variables, particularly student-level variables. More centrally, researchers in the Western countries have been delving into the causal link between leadership and student learning for decades (Briggs et al., 2012). However, Chinese education researchers have not pursued research on student academic achievement as vigorously. As known, China owns the world's largest schooling systems, and Chinese students' academic performance continuously came out on top in the Programme for International Student Assessment according to the reports of Organisation for Economic Co-operation and Development. Although TSL is one of the most important factors that may contribute to student academic achievement, how it is linked to student academic achievement remains unexplored in China. Future studies may move forward to examine the relationship between TSL and student academic achievement; findings will not only further

explicate the influential factors of Chinese students' outstanding academic achievement but also add new evidence into this field.

The third question pertained to the effects model used in the studies. The majority of the studies employed the mediated effects model. This implies that Chinese educational scholars preferred to test the indirect effects of transformational leadership. Regression and SEM are the two most widely used data analysis methods in these studies. Future studies can explore some other models, such as mediated effects with antecedent model or reciprocal effects model. According to Hallinger (2011), studies with the direct effects model always failed to employ "sufficiently comprehensive perspectives" (p. 287), studies with mediated effects model that incorporating more antecedent variables might provide more explanations for why this should be the case. Although the reciprocal effects model can be more methodologically challenging to study the effects of leadership, it may help to understand the mutual influence of leadership and related conditions in the school. Numerous scholars have described the process of how leadership contributes to educational outcomes as a "black box." From this perspective, comprehensive models may be more useful to uncover this "black box."

The final question asked the effects of transformational leadership in a Chinese K–12 context, which is the central question of this review. Overall, TSL was found to be consistently effective on all three-level outcome variables (teacher level, school level, and student level). At the teacher level, the effects of TSL on teachers' commitment, teachers' job satisfaction, and teachers' work engagement were the most popular topics. The findings showed that transformational leadership had both direct and indirect effects on teachers' commitment, teachers' work engagement, and teachers' job satisfaction. Mediating variables including organizational innovation, person-organizational fit, and psychological contract partially mediated the effects on teachers' commitment. Research also found psychological capital partially mediated the effects on teachers' work engagement and teachers' commitment partially mediated the effects on teachers' job satisfaction. Furthermore, some school-level variables, such as organizational atmosphere, school climate, school's organizational innovation, and organizational trust, played a mediating role in the effects of transformational leadership on some teacher-level variables. At the student level, students' modernity development is the only outcome variable identified from these studies. Transformational leadership was found to positively impact this variable, both directly and indirectly. These findings specifically explained the mechanism of how TSL works in Chinese K–12 settings. It can be concluded that the studies in this review demonstrated uniform effects of transformational leadership in Chinese school context. This implies school principals in Chinese K–12 settings may adopt TSL practices to motivate teachers toward a higher performance level. Nevertheless, very few studies have reported the effect size; future studies should further investigate the practical implications of these effects.

This review contributes to the field of TSL research and practice in several ways. First, it specifically brings light to the development of TSL research in Chinese K–12 settings by including

studies in both Chinese and English. This collection of research will not only help international scholars better understand how TSL has been studied in China but also enrich the domain of TSL theories, since this review demonstrated the consistent effectiveness of transformational leadership research in a collectivist cultural context. Second, this review clearly pointed out several potential research directions for TSL research in China, which may serve future scholarship. Finally, the acknowledgment of the effectiveness of TSL from these studies has provided important practical implications for policymakers and school principals in China, as this leadership style is very likely to benefit schools from various aspects.

In closing, the limitations of this review must be addressed. First, this review only included 18 studies conducted between 2010 and 2019, which was a small number for a literature review. Future studies should expand the coverage to provide a more comprehensive understanding of Chinese TSL research. Second, although vote counting seems to be more appropriate considering the purpose of this review, meta-analysis may add new knowledge to the current field. Future studies could try to figure out a way to conduct a meta-analysis on the effects of TSL in China.

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