Resilience of Chinese teachers and its relationship with perceived working conditions and relational trust

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Abstract

This paper aims to explore the conceptual construct of teacher resilience and the impact of organisational and relational conditions on teachers' capacity to sustain their resilience. The research upon which the paper is based adopted a mixed-methods design to investigate the nature of resilience of a sample of 455 primary and secondary school teachers in Beijing. The paper reports results from the questionnaire analyses. Confirmatory factor analysis and structural equation modelling (SEM) were used to test the direct and indirect effects of school leaders, work conditions and relational trust between colleagues in predicting teachers' capacity to sustain their resilience in the classroom. The results support the validity and reliability of the construct components of teacher resilience. They also demonstrate that the quality of work conditions and relational trust can significantly predict teacher resilience. The findings highlight the significance of school contexts oi developing teachers' resilience qualities and have important implications for teacher recruitment and retention.

Key words: teacher resilience; relational trust; work conditions; commitment

1. Introduction

Sustaining commitment and resilience of teachers over the course of their professional phases is a major issue of concern in many countries. Teacher resilience is a relatively recent area of investigation of what enables teachers to persist in the face of challenges and offers a positive psychology perspective to studies of stress, burnout and attrition (Beltman, Mansfield & Price, 2011, Gu & Day, 2007). Previous studies consistently revealed that teaching is a physically and emotionally demanding job (Day & Gu, 2010, 2014a; Kyriacou, 2000; Gu & Li, 2013). However, despite the internal and external pressures on teachers, research also consistently shows that many teachers across the world have managed to maintain their passion and commitment to teach to their best (Gu & Li, 2013; OECD, 2005). Results of the OECD's lower secondary international teacher survey, for example, showed that 78% would still choose to work as a teacher if they could decide again (OECD, 2014).We have thus long argued that resilience is not a quality that is reserved for the heroic few (Day & Gu, 2014b). Rather, they can be shared by many ordinary teachers who remain extraordinarily committed to serving the learning and achievement of the children on an everyday basis and also, over the course of their professional lives. The purpose of this paper is to conceptualize and confirm the factor validity of the construct of teacher resilience, and explore the ways in which it is influenced by the contexts in which teachers work and live.

There were two major reasons why we decided to focus on resilience in Chinese teachers: First, resilience as character education has been emphasized for thousands of years in the Chinese culture. For instance, one of the oldest Chinese classics "I Ching"(易经) indoctrinated people to believe that "As heaven's movement is ever vigorous, so must a gentleman ceaselessly strive along" (天行健，君子以自强不息) (Jin & Lv, 2005, p.17). For teachers in Mainland China, as a result of decades of rapid changes in economic, political and social changes, they have experienced many unprecedented government education reforms and challenges such as

heavy workload, examination-oriented learning assessment, and high parental expectations (Gao, 2008; Liu & Onwuegbuzie, 2012). What keeps Chinese teachers going in such changing and challenging circumstance? This was one main research question to answer in this study.

Another reason is closely related to the quality retention of Chinese teachers in an education system where most teachers were traditionally employed in permanent positions by local educational authorities before the end of 1990s (Gao, 2008). In the latest decade, although contract employment practices have been adopted in schools, teaching remains a stable career for many teachers. Research shows that teachers' dropout rates in China are low (Gu & Li, 2013; Liu & Onwuegbuzie, 2012). One crucial question is then centred on how to maintain teachers' sustainable enthusiasm and commitment to teaching in changing times. Thus, research into teacher resilience will provide productive insights for school leaders and policy makers into enhancing teaching and learning quality.

Using a questionnaire survey of 455 primary and secondary school teachers in Beijing, this paper examined the theoretical underpinnings and measurement of teacher resilience, and also explored the structural relationship of contextual factors influencing teacher resilience.

Policy contexts and Challenges for Chinese teachers

Since the last two decades, Chinese government has launched a wide range of educational reforms to improve teaching force quality. Major milestones of reform policy included the promulgation of the Teacher Law in 1993, which officially identified teaching as a profession for the first time and specified teachers' qualifications for different levels of education (Ministry of Education, 1993); Education Law in 1995, aiming to raise teachers' social status by improved working and living conditions as well as life-long education, thus making teaching become the ''most respected profession (Ministry of Education, 1995); a major policy move at the turn of new century to create mechanisms to assure quality in continuing teacher professional

development through in-service training and school-based mentoring and lesson study(Ministry of Education, 1999, 2001).

The latest initiative was a major national comprehensive strategic plan to improve education in the next decade – *the outline for medium and long-term development and reform of education (2010-2020).* This placed teachers at the core of this strategic mission and highlighted the great importance of building a committed, professional, structure balanced and sustainable high quality teaching force (Ministry of Education, 2010). After that, the *Professional Standard for Teachers* was issued in 2011, which specified a clear baseline of expectations for the professional practice and conduct of teachers from the point of qualification (Ministry of Education, 2011).

The curriculum reform implemented in the new millennium essentially calls for major changes in approaches to student learning, from pure knowledge transmission towards fostering learning attitudes and values, from pure "bookish" knowledge to improving relevance and interest in the content of a curriculum, and from repetitive and mechanistic rote-learning towards increased student participation, real-life experience, building capacity in communication and teamwork, and developing the ability to acquire new knowledge and to analyze and solve problems (Ministry of Education, 2001; OECD, 2012). Teachers are expected to rethink and reconstruct their conventional beliefs about teaching and learning, transform their pedagogical principles, and build a student-centred and creativity-oriented learning culture in their classrooms (Gu & Li, 2013).

Implementing such deep educational changes in teaching practices and students learning in reality, however, is a very tough task for teachers (Lee & Yin, 2011). One of the major obstacles is that they have found the new curriculum difficult to manage when preparing their students to do well in public examinations – the success in which is of critical importance to students' future lives and remains the principal form of assessment of teacher and school performance in China.

Changes in the curriculum and examinations intensified teacher's heavy workload and contributed to a high level of occupational stress and emotional exhaustion (Gao, 2008; lee & Yin, 2011; Li, Zhang & Zhou, 2011; Liu & Onwuegbuzie, 2012). Thus, nurturing teachers' sense of resilience and commitment in such reality of teaching is in urgent need.

2. Conceptual framework

2.1 Conceptualizations of teacher resilience

Initially the term 'resilience' was used to explain the capacity of children to adapt and thrive despite experiencing adversity (Garmezy, 1974; Masten, Best, & Garmezy, 1990). However, it has been subsequently shown that resilience is not solely a personal attribute, but a complex construct resulting from a dynamic relationship between risk and protective factors (Benard, 2004; Luthar & Brown, 2007). As an emerging field of research, and in part due to the complex nature of resilience, teacher resilience has been conceptualized in the literature in a range of ways (Bobek, 2002; Gu, 2018; Le Cornu, 2009). For instance, from a professional role specific to teachers, Brunetti (2006) defined teacher resilience as "a quality that enables teachers to maintain their commitment to teaching and teaching practices despite challenging conditions and recurring setbacks'"(2006, p. 813). Moral courage and ethical values are found to provide important intellectual, emotional and spiritual strengths, which enable teachers to be resilient over the course of their careers (Day & Gu, 2010; OECD, 2005; Palmer, 2007; Gu & Day, 2013). Considering resilience as a sense of teacher efficacy, Oswald, Johnson, and Howard (2003) defined teacher resilience as ''capacity to overcome personal vulnerabilities and environmental stressors, to be able to 'bounce back' in the face of potential risks, and to maintain well-being'' (2003, p. 50). Rather than the capacity to 'bounce back' or recover from highly traumatic experiences and events, Gu and Day's (2013) demonstrated that teachers resilience was "the capacity to maintain equilibrium and a sense of commitment, agency and moral purpose in the everyday worlds in which teachers teach' (2013, p. 5). Additionally, teacher resilience is not solely individual characteristics but contexts specific. It was

‘‘a dynamic construct subject to influence by environmental, work-specific and personal contexts’’ (Sammon, Day, Kington, Gu & Smees, 2007, p.694) or ‘‘a mode of interacting with events in the environment that is activated and nurtured in times of stress’’ (Tait, 2008, p. 58).

In summary, teacher resilience is a dynamic process or outcome that is the result of interaction over time between a person and the environment (e.g. Bobek, 2002; Day &Gu, 2010; Sumsion, 2004; Tait, 2008). Built upon the above definitions of teacher resilience and our previous empirical findings on teacher resilience through exploratory factor analysis and qualitative data analysis (Gu & Li, 2013), this study demonstrated that resilient teacher quality shares three key components: (1) Professional commitment and motivation for teaching as emotional strength of resilience; (2) Self-efficacy was cognitive and motivational confidence as teachers encountered and overcame challenges in their teaching; (3) Job fulfilment or satisfaction in overcoming challenging was affective and social return for resilient teachers (see Fig.1). The three facets interact with each other to enable teachers to sustaining their passion, commitment and optimism in teaching profession. Next, we turn to each of separate components of teacher resilience: professional commitment and motivation for teaching, sense of self-efficacy, and job fulfillment.

Insert Fig. 1 about here

2.2 Components of teacher resilience

2.2.1 Professional commitment and motivation for teaching

Teacher commitment has been appropriately defined by Coladarci (1992) as the “degree of psychological attachment to the teaching profession.” Research shows that it is an important predictor of teachers’ work performance, absenteeism, retention, burnout and turnover, and that it has a significant influence on students’ motivation, achievement, attitudes towards learning and being at school (Firestone, 1996). Gu and Day (2007, p. 1311) found that having an inner

motivation to teach, ‘‘an important professional asset of teachers’’, was associated with “a strong sense of professional goals and purposes, persistence, professional aspirations and achievement.”

The previous literature identified components of teacher commitment such as commitment to students, school priorities, subject knowledge (Chio & Tang, 2010; Day, Elliot and Kington, 2005). The findings from experienced teachers in England and Australia suggest that commitment to teaching goes beyond these (Day, Elliot and Kington, 2005). Teacher commitment may be better understood as a nested phenomenon involving a set of core, relatively permanent values based upon personal beliefs, images of self, role and identity, which is socio-politically constructed and subject to change (Day et al., 2005). In addition, they found that teachers with sustained commitment worked consistently hard, set high standards of performance and behaviour, and demonstrated a continuing willingness to professional learning as well as intellectual and emotional engagement. Similarly, Gu and Li (2013) concluded in their study that commitment to children’s learning functions as a strong emotional drive that enables many Chinese teachers to remain meaningfully engaged in the profession over the course of their professional lives.

Professional commitment of Chinese teachers embodied a strong ethics of care for their students, a very close connection between their students and themselves, and a strong desire for continuing professional learning and development. These internal values and motivation fuelled teachers’ capacities to exercise emotional strengths and professional competence and subsequently provided them with the resilience that enabled them to meet the challenges of the changing environments in which they worked (Gu & Day, 2007). In sum, the current studies confirmed the centrality of commitment in sustaining teacher quality. Sustained commitment to teaching is an important emotional and motivational component of teacher resilience.

2.2.2 Sense of self-efficacy

Self-efficacy is grounded in the theoretical framework of social cognitive theory emphasizing the evolvement and exercise of human agency that people can exercise some influence over what they do (Bandura, 2006). Efficacy beliefs determine how environmental opportunities and impediments are perceived and affect choice of activities, how much effort is expended on an activity, and how long people will persevere when confronting obstacles (Bandura, 2006; Pajares, 1997). In educational settings, research has shown that the teachers' self-efficacy beliefs influence job satisfaction and mediate job stress (Klassen & Chiu, 2010). Teachers with low self-efficacy for classroom management may struggle to regulate classroom stress and be more likely to leave the profession (Jepson & Forrest, 2006). In contrast, teachers with a strong sense of efficacy have been found to work harder with struggling students (Gibson & Dembo, 1984), to be more willing to employ new strategies because of a reduced fear of failure (Ross, Cousins, & Gadalla, 1996), and to face challenges to influence student engagement and teachers' job commitment (Tschannen-Moran & Woolfolk Hoy, 2001). From this perspective, teachers who have a strong belief in their capabilities to make a difference to student learning set higher expectations, exert greater effort, and redouble their effort to master the challenges (Bandura, 2000; Tschannen-Moran & Hoy, 1998). Thus, we argue that the extent to which teachers are able to continue to teach to their best in the workplace is inherently influenced by the strengths of their efficacy beliefs.

2.2.3 Job fulfilment

Job fulfilment from overcoming challenges is an affective experience and brings about social return for resilient teachers. This positive experience enables teachers to sustain their passion, commitment and optimism in teaching profession. Ryan and Deci (2000) highlight that fulfillment and happiness are correlated most highly with an individual's ability to exercise

intrinsic motivation – which, in turn, nurtures efficacy beliefs and passion in one's work. Teachers' commitment was found to be reinforced by a personal sense of achievement, which played out differently among teachers in different professional life and career phases. Mid- and early-career teachers became more committed when they could ''try out what was learnt'' whereas the late-career cohort related increased/ sustained teacher commitment to ''goals being achieved'' and ''aspirations being fulfilled'' (Chio & Tang, 2010). Feeling able and having achieved in one's work could be a motivational drive for resilient teachers to learn to adjust themselves amidst challenges.

Gu and Li (2013) identified job fulfilment of Chinese teachers involving three broad areas: teachers' interest in the job, their perceived effectiveness, and their ability to sustain their sense of satisfaction as a teacher over time – all of which speak to a strong sense of moral responsibility and commitment to have a positive influence on children's growth and achievement. In addition, it is important to note that for the Chinese, the lay theories of *happiness* emphasises fulfilment of social role obligations and achieving a dialectical balance between happiness and unhappiness – which is in stark contrast to the Euro-American conception that emphasises 'personal accountability and explicit pursuit of personal goals' (Lu, 2010, p. 333). The element of 'feeling happy and fulfilled as a teacher' in our conceptualisation is grounded in a Confucian collective, moral discourse and must be understood as entailing teachers' pursuit of their moral duties for the society.

3. Research hypotheses

3.1 The nature of sense of teacher resilience

We have proposed that there exits three components of teacher resilience theoretically. The major hypothesis is：

H.1. The latent construct of teacher resilience comprises the three dimensions of vocational commitment and motivation for teaching, sense of self-efficacy, and job fulfillment.

We predicted that teacher resilience could be a second-order latent factor. The hypothesis is presented conceptually as a structural model in Fig.2

Insert Fig. 2 about here

3.2 Work conditions and teacher resilience

As indicated in the above, resilience was conceptualized as a complex and dynamic construct subject to influence by work-specific and personal contexts (e.g. Bobek, 2002; Gu & Day, 2010; Tait, 2008). Beltman et al (2011) found that these contextual factors may come from sources such as school administration, relationships with school leaders, colleagues, parents and students, professional work and family. For example, supportive school administrative culture means strong and open leadership, fair distribution of resources, and encouraging feedback and recognition. ‘‘Strong caring leadership’’ is a major source of personal support for teachers (Howard & Johnson, 2004, p. 412). In contrast, unsupportive school administration could push ‘‘high efficacy teachers’’ to move to another school where they felt a better fit between themselves and the philosophies and practices of the school (Yost, 2006, p. 70).

The most common professional work context challenge for teachers was lack of time due to heavy workloads and non-teaching duties such as paperwork or meetings (e.g. Castro, Kelly & Shih, 2009). High workloads, demoralising policy initiatives and lack of professional and leadership support could negatively influence the commitment of teachers across all phases of their professional lives (Day & Gu, 2010). Other contexts significant to teachers’ morale and capacity to teach to their best included their participation in schools’ decision making processes and access to opportunities for professional development (Day, Gu & Sammons, 2016), as well

as schools' physical facilities and resources for teaching (Olsen & Anderson, 2007; Prosser, 2008).In addition to these school-based contextual factors, constraints from family could also exert extra pressure on teachers to manage work and family commitments (Fleet & Kitson, Cassady & Hughes, 2007; Smethem, 2007) or to leave teaching (Olsen & Anderson, 2007) . Therefore, in our research we hypothesized that school leadership, teachers' workload conditions, and teaching resources and teacher participation and development are vital to teachers' capacity to sustain their resilience and commitment. Thus the following hypothesis is proposed.

H.2. Work conditions in schools significantly affect teacher resilience.

3.3 Relational trust and teacher resilience

Teachers work in multi-layered relationships with colleagues, principal, students and parents. A trusting relationship is conducive to the improvement of teachers' efficacy, commitments and resilience (Lee, Zhang &Yin, 2011). According to Hoy and Tschannen-Moran's (2003) definition, trust reflects how an individual or group is willing to risk vulnerability with regard to another party. The willingness is based on the individual's or group's confidence that the party is benevolent, reliable, competent, honest and open. Previous studies have found that relational trust is of great importance for building organizational learning atmosphere and resilience (Gu & Li, 2013).

Parents and students are a major source of support, as well as challenge, for teachers' capacity to sustain their resilience. The inner city teachers in Brunetti's (2006) study had a deep respect for the ways in which their students overcame difficult circumstances and reported a strong responsibility and commitment to supporting them. Trusting student–teacher relationships sustained teachers' vocational commitment in the face of challenges (Kitching, Morgan, & O'Leary, 2009). Research also shows that students in safe and trusting environments feel comfortable to take chances and learn from their mistakes, and that parents tend to believe that teachers are motivated

by their best interest in their students (Bryk & Schneider, 2002).

Supportive mentors and colleagues bring about hope and inspiration for teachers, helping them to cope with work difficulties and maintain their commitment, especially in highly challenging situations (Brunetti, 2006). Research on early career teachers has been consistently suggesting that positive mentor relationships and collegial colleagues are major sources of support for their professional learning and development which impact on their morale and importantly, their decision to stay or leave the school or profession (Howard & Johnson, 2004, Jarzabkowski, 2002).

To sum up, trusting relationships in colleagues, students and parents as a social, emotional and psychological atmosphere, are conducive to the learning and development of teachers' efficacious beliefs and commitment (Tschannen-Moran & Hoy, 2007; Yin & Lee, 2012). Hence, we hypothesize that:

H.3. Trusting relationships in schools are positively associated with teacher resilience.

3.4 Modeling the relationship of work conditions, trusting relationships and teacher resilience

One main purpose of this present study was to examine what factors contributed to teachers' enthusiasm, sense of commitment and fulfilment. Also, it used SEM analysis to investigate the relationships between work conditions and relational trust in schools and teacher resilience. To achieve this, it assessed the variance of each factor contributing uniquely and differentially to the prediction of teacher resilience. Based on previous research on teacher resilience in China (Gu & Li, 2013), this study hypothesized that both work conditions and relational trust in schools would make a salient and positive contribution to the three components of teacher resilience. Thus the following hypothesis is proposed.

H.4. Our fourth hypothesis is expressed as a structural model (see Fig. 2) in which work conditions and relational trust, directly and indirectly, influence resilience in teachers.

2. Method

2.1 Participants

Six hundred kindergarten, primary and secondary school teachers in Beijing participated in in the teacher survey in 2012. They were randomly selected from 30 schools in three districts in Beijing taking into account factors such as age, gender and years of experience in teaching. A total of 568 questionnaires were returned representing a response rate of 85%. Given the considerable difference in the nature and contexts of teachers' work between kindergartens and primary and secondary schools in China, this paper focusses on the analyses of the survey responses from 455 primary and secondary teachers. The respondents were predominantly female (80%) which largely reflects the composition of the teaching workforce in Beijing. Their years of experience in teaching ranged from a few months to 30 years (M=13.54, SD=6.35).

2.2 Measures

2.2.1 Teacher resilience scale

Teacher resilience was measured originally with 26 items based on empirical work on teacher resilience, commitment and effectiveness (e.g. Gu & Day, 2007, 2013; Gu & Li, 2013). After analyzing the validity using exploratory factor analysis, 13 items remained in the resilience scale. They measured three different dimensions of resilience including vocational motivation and commitment, self-efficacy, and job fulfillment and professional optimism. Each of the items was measured along a 6-point Likert-type scale from 1 ("strongly disagree") to 6 ("strongly agree"). The items include: "*I've been feeling interested in my job overall.*" "*I feel able to sustain your commitment to pupils.*" "*I feel able to generate enthusiasm for learning in your class*." The alpha coefficient of the three components of resilience scale ranged from .87-.93, suggesting that this measure was all reliably assessed.

2.2.2 Work conditions scale

This measure was built upon research on school leadership and school improvement (e.g. Gu, Sammons & Mehta, 2008; Gu & Johansson, 2013) and existing scales developed in the organizational health research that explore the impact of work conditions on employees' mental health and wellbeing (e.g. Griffiths, Cox, Karanika, Khan & Tomas, 2006). Original 26 items were designed to ask teachers to rate the extent to which they were satisfied with 1) leadership support (e.g. 'support from line manager'; 'feedback on my performance'); 2) teaching resources (e.g. 'clear school improvement goals'; 'physical facilities for teaching'); and 3) workload and variety (e.g. 'flexibility of working hours'; 'variety in different tasks'). Each of the items was measured along a 6-point Likert-type scale from 1 ("strongly dissatisfied") to 6 ("strongly satisfied"). Exploratory factor analyses indicated that the above three factors explained 63.67% variance of the measure of work conditions. The high value of the alpha coefficients of the three components of work conditions, ranging from .84 -.92, suggests a high reliability.

2.2.3 Relational trust scale

Relational trust in schools was measured upon research on school leadership and school improvement (e.g. Gu, Sammons & Mehta, 2008; Gu & Johansson, 2013) and also considered established measures for assessing trust in schools (Hoy & Tschannen-Moran, 1999; 2003). A total of 30 items were designed to measure the levels of relational trust in schools including trust in principals (e.g. '*Teachers in this school have faith in the integrity of the principal*.'), trust in colleagues (e.g. '*Teachers in this school trust each other*.'), trusts in students and parents ('*Students in this school can be counted on to do their work.*' '*Teachers in this school trust the parents.*'). Each of the items was measured along a 6-point Likert-type scale from 1 ("strongly disagree") to 6 ("strongly agree"). Exploratory factor analyses indicated that these above three factors explained 65.79% variance of relational trust in schools. The values of the alpha coefficients of the three components of relational trust, ranging from .85 -.92, suggest the measures displayed adequate

internal consistency. All the measures were piloted with a small group of Chinese teachers before they were finalized and translated into Chinese.

2.3 Procedure

Participants of this study completed three self-report scales assembled in a questionnaire with guidance of the researchers in participating schools. All participants completed the questionnaire within half an hour. They were assured that the data would be kept confidential, and would be used for research purposes only.

2.4 Data analysis

Data were analyzed by means of confirmatory factor analysis (CFA) and structural equation modeling (SEM) using the AMOS 7 program. SEM is a statistical methodology that takes a confirmatory approach to the analysis (Byrne, 2001). In this approach a hypothesized model of relations between variables is tested statistically to determine the extent to which it is consistent with the data, which is referred to as the goodness of fit. We evaluated model fit by using well-established indices such as CFI, IFI, TLI, and RMSEA as well as the chi-square test statistics. For the CFI, IFI, and TLI indices, values greater than .90 are typically considered acceptable and values greater that .95 indicate good fit to the data (Bollen, 1989; Byrne, 2001; Hu & Bentler, 1999). Furthermore, for a good fit, an RMSEA .06 or less are considered indicative of good fit, ≤.08 of fair fit, between .08 and .10 of mediocre fit and greater than .10 of poor fit (Hu & Bentler, 1999; MacCallum, Browne, & Sugawara, 1996).

3. Results

3.1 Test of hypothesis 1: the structure and measure of teacher resilience

In order to test hypothesis 1, we explored three theoretical models by means of confirmatory factor analyses. Model 1 defined one first-order factor only and tested if teacher resilience could be

treated as a one-dimensional construct. Model 2 defined three first-order factors (vocational commitment and motivation for teaching, sense of self-efficacy, and job fulfillment) corresponding to the three theoretical dimensions. Compared to Model 1 and Model 2 as the competing models, Model 3 defined three first-order factors and one second-order factor underlying the primary factors.

Model 1 did not fit the data (χ^2=1127.95.64, df=65, CFI=.90, IFI=.89, TLI=.72, RMSEA=.19). This indicated that teacher resilience was not one dimensional but a multiple dimensional structure. Model 2 had a marginally acceptable fit to the data (χ^2=244.64, df=62, CFI=.95, IFI=.95, TLI=.94, RMSEA=.08). The correlation coefficients of three latent variables in Model 2 indicated that the three first-order factors of vocational commitment and motivation for teaching, sense of self-efficacy, and job fulfillment had significant high correlations(r=.72, r=.73, r=.68). This showed that the three latent variables could have a second-order latent factor. We further tested Model 3 and found that it showed an acceptable fit to the data (χ^2=244.64, df=62, CFI=.95, IFI=.95, TLI=.94, RMSEA=.08). The analyses confirmed that teacher resilience would be treated as a multidimensional construct and may be treated as a latent variable indicated by the three factors. The second-order model with its standardized beta weights is shown in Fig. 3. As hypothesized, teacher resilience is a second-order factor composed of vocational commitment and motivation for teaching, sense of self-efficacy, and job fulfillment.

Insert Fig. 3 about here

3.2 Test of hypotheses 2 and 3: relationships of work conditions, relational trust and teacher resilience

The responses of the 455 survey participants to all measures were first aggregated to yield ten scores based on the work conditions, relational trust, and the three subscales of teacher resilience including vocational motivation and commitment, self-efficacy and job fulfillment and professional optimism. Table 1 shows the means, standard deviations, and the correlation matrix of these measures. Work conditions and relational trust in schools were significantly and positively correlated with teacher resilience, suggesting that the more supportive the school leadership, the more manageable the workload allocation, the better teaching facilities and resources, and the greater participation teachers enjoy in schools' decision making processes , the more likely they are to be committed and resilient at work. Also, trusting relationships that they have with colleagues, the headteacher, and parents and students contribute positively and highly significantly to their vocational motivation and commitment, self-efficacy and job fulfillment and optimism. It is important to note that the positive correlation between relational trust and teacher resilience is much stronger than that between the latent variable of work conditions and teacher resilience, highlighting the vital importance of relationships and trust in building and sustaining teacher resilience in workplace contexts.

Table 1 Means, standard deviations, and correlations of work conditions, relational trust and measure of teacher resilience (N=455).

Insert Table 1 about here

3.3. Test of hypothesis 4: Structural model of relations between work conditions, relational trust and teacher resilience.

One of the purposes of this study was to explore if and how teacher resilience was predicted by work conditions and relational trust. We tested a theoretical model with the three latent variables of

work conditions and the three latent variables of relational trust using the three latent variables of teacher resilience as the outcome measure (Fig. 3). The model had an acceptable fit to the data ((χ^2=78.55, df=23, CFI=.98, IFI=.96, TLI=.98, RMSEA=.07). All work conditions and relational trust variables were significantly related to teacher resilience. The stronger predictor of teacher resilience was relational trust (.63). Work conditions significantly predicted teacher resilience directly (.23), and also indirectly through relational trust as a mediating variable (.79).

Fig. 2 Structural model of relations between work conditions, relational trust and teacher resilience (N=455).

Insert Fig. 4 about here

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4. Discussion

This study investigated the construct of teacher resilience and the ways in which organizational and relational factors influence the resilience of Chinese teachers in their workplace contexts. Relational trust and work conditions as major school contextual factors embedded in teachers' work life correlated substantially and significantly with teacher resilience. They explained a substantial amount of variance in the prediction of teacher resilience. These findings and the especially higher contribution of relational trust in schools to teacher resilience point to the importance of developing collegial trust and support in school contexts for enhancing the resilience and commitment of teachers.

4.1 Teacher resilience: a multidimensional construct

The present study tested the conceptualization of teacher resilience as a multidimensional construct using a confirmatory factor analysis. The results demonstrated that teacher resilience was indeed a second-order factor comprised of three first-order factors: professional commitment and motivation in teaching, teacher sense of self-efficacy, and job fulfilment. This multidimensional construct encompasses cognitive, affective, and behavioural components of teacher resilience. Self-efficacy is a belief, and therefore cognitive. Teachers who are efficacious tended to demonstrate cognitive confidence when they encounter and overcome challenges in helping their student learn. Professional commitment and motivation in teaching plays an affective and motivational role in the resilience building process. Teacher with strong commitment to work and student learning tend to show stronger loyalty to their school, willingness to exert greater effort to support the improvement and performance of the school, and stronger dedication to giving their best to the achievement of the students, even in the face of challenging circumstance (Lee, Zhang & Yin, 2011). Job fulfillment entails a social and emotional return from their endeavor to make a positive difference to student development and achievements. As we have reported in our earlier publications (e.g. Gu & Li, 2013), teachers with a greater sense of job fulfillment tended to experience greater enjoyment and well-being at work. This is achieved through intellectually and emotionally rewarding interactions with their students over the course of their professional lives in teaching. All three elements of teacher resilience have transactional relations with one another and they interact to reinforce one another.

4.2 Building resilience in the trusting and collaborative relationships

Findings of the present study indicated that teacher resilience could be significantly predicted by relational trust in schools including trust in colleagues, and trust in students and parents. Relational trust in colleagues demonstrated the largest variance contribution in predicting each of the three components of teacher resilience. The results suggested that cultivating or building trusting and

supportive relationships in schools could lead to increased resilience qualities in teachers, manifested through enhanced vocational motivation and commitment, self-efficacy and job fulfillment and professional optimism in face of challenging or threatening circumstances (e.g. heavy workload, long working hours). These quantitative findings resonated with our qualitative observations of Chinese teachers. Gu and Li (2013) interviewed six Chinese teachers and found that open and trusting relationships with mentors and colleagues in teaching and research groups and collaborative lesson planning groups fostered their professional learning, increased their self-efficacy and secured a happy beginning for those early career teachers. At the same time, establishing a trusting relationship with the parents and "having them on your side" helped to pave the way for teachers' positive teaching experiences and students' positive learning opportunities. A positive, open and caring emotional connection between teacher and student were also crucial for maintaining teachers' job fulfillment and commitment in teaching.

Also consistent with the present results, Gu & Day (2013) reported in their study in England that a school environment characterized with trusting relationships between different stakeholders was found to have a significant influence on teachers' capacity to sustain their commitment and effectiveness. Recent research in Australia, USA, Canada, and other western counties has also explored environmental protective factors contributing to teacher collective resilience. The consistent conclusions were that the role of teaching contexts such as mentor support for new teachers, support of peers and colleagues and support of family and friends in providing affordances or constraints for resilience development contribute, powerfully and profoundly, teachers' resilience building processes (Brunetti, 2009; Freedman & Appleman, 2008; Howard & Johnson, 2004; Le Cornu, 2009; Yates, Pelphrey, & Smith, 2008).

Further, Bryk and Schneider (2002) explained that teachers' interpersonal worlds are organized around multiple role relationships: "teachers with students, teachers with other teachers, teachers with parents and with their school principal" (2002: 20). A trusting and collaborative relationship

between teachers was in particular of great importance in building teachers' collective sense of resilience, which in turn contributed to the strong associations between positive relationships, trust and student attainment in schools. The TALIS survey (OECD, 2012) also found that teachers who exchange ideas and co-ordinate their practices with other teachers in a trusting school climate report more positive teacher-student relations at their school. Positive teacher-student relations are not only a significant predictor of student achievement; they are also closely related to teachers' job satisfaction (OECD, 2012). This finding reinforces the important role of teachers' positive evaluations of the trusting and collaborative school environment in building and sustaining their capacity to remain resilient and committed at school.

Building a trusting and collaborative relationship between different stakeholders was of critical importance in fostering their collective sense of resilience in face of challenging circumstance. This is because trusting and open professional learning networks may act as act as social glue, helping people deal with the uncertainties of their changing world (Goodwin, 2005). Luthar (2006) suggests that 'resilience rests, fundamentally, on relationships' (2006, p. 780). Jordan also maintained that resilience resides not in the individual but in the capacity for connection. She argues that traditional models see an 'internal locus of control' as an individual characteristic which has often been associated with resilience whereas a contextual approach ''might reconsider the concept of internal sense of control, examining a person's engagement in mutually empathic and responsive relationships as the more likely source of resilience'' (Jordan, 2006, p. 80). In sum, there is no doubt that trusting and collaborative relationships and a sense of connectedness in which teachers engage enable them to build a sense of belonging and shared responsibility and sustain their passion, commitment and their resilience in teaching.

4.3 school Leadership as central to fostering teacher resilience

Evidence from many studies has demonstrated that, just as individual and relational resilience can increase and sustain teachers' motivation, resilience and effectiveness in teaching, so too can

resilient school organizational contexts develop a culture of resilience for teachers and build organizational resilience (Allison & Reeves, 2011; Everly, 2011; Hamel & Välikangas, 2003, Milstein & Henry, 2008). This kind of resilience in the organizational setting serves as a leaning community which helps to establish a supportive and belonging environment for increased teacher efficacy, job fulfillment and professional optimism. A culture of organizational resilience is built largely upon leadership which some researchers refer to as "resilient leadership" (Allison & Reeves, 2011). Henry and Milstein (2006) argue that teachers, students, parents, support personnel are the fabric of the school and that leaders are weavers of the fabric. Given this, it is perhaps then no surprise that this research showed that school leadership support had a significant influence on each of three components of teacher resilience. Around 75% of resilient teachers reported that they were satisfied with the feedback on their performance from their principals or frontline leaders . Another 70% of teachers reported that they were satisfied with recognition and appreciation of efforts from their school leaders.

This finding resonates with that of Brunetti (2006) who found, in his study of inner city American high school teachers, that what had kept them going was strong leadership. He concluded that support from school leaders was a powerful incentive which kept many teachers his study to remain in the classroom. Gu and Day (2007) demonstrated in their case studies of England teachers that strong leadership support provided teachers with strength, confidence and a sense of belonging, which enabled them to survive and successfully manage the complexities and tensions in their everyday professional life, and continue to make a difference to the learning and achievement of the pupils.

Over last two decades amid incessant waves of education policies and reforms in Mainland China, many teachers have experienced emotional drain and physical exhaustion in every school day (Chan, 2013). The major challenges included long work hours, heavy workload, too much demand from school managers, high expectation from parents and society, prescriptive teacher

evaluation based on student test scores , a lack of appropriate training, and low pay (Gao, 2008; Li, Zhang & Zhou, 2011; Liu & Onwuegbuzie, 2012). Tackling these problems is of critical importance for schools. Our finding in this study indicated that helping teachers to manage their workload volume and variety and a significantly predict their commitment, job fulfillment and optimism. As aforementioned before, resilience is not simply an individual trait, but a capacity that arises through interactions between people within organizational contexts. Hamel and Välikangas (2003) argued that key leaders function as a catalyst to increase group cohesion and dedication to the mission. Resilient organizations demonstrate four core attributes of optimism, decisiveness, integrity, and open communications, which are not only essential in enabling individuals to rebound from adversity, but also in providing the foundations of a resilient organizational culture that can further contribute to increased resilience throughout the organization (Everly, 2011). In the education setting, school leaders as central to building resources and developing strategies that enable teachers to collectively learn to solve problems and to teach to their best. It is those who sit in the principal's office who design and create the physical, intellectual and collegial environments where teachers feel nurtured to thrive and flourish socially and professionally (Gu & Day, 2007).

4.4 Limitations and future research

This study had three obvious major limitations. One major limitation had to do with the correlational nature of the data. Given that school contextual factors were found to contribute to the prediction of teacher resilience, the findings seemed to imply that enhancing school contextual factors would lead to increased teacher resilience and sustain commitments. Strictly speaking, the results only indicated that teachers within more trusting, collaborative and supportive school contexts tended to have higher sense of resilience in face of challenging circumstance or teachers with higher sense of resilience tended to have more trusting, collaborative and supportive school contexts.

The present findings were based on a sample of Mainland Chinese teachers only from Beijing,

which could be another major limitation. The fact was that there exist big gaps of the development in education whether between eastern and western areas or between urban and rural areas in Mainland China. These teachers recruited in Beijing could hardly be claimed to be representative of Chinese teachers. Therefore, any generalization of the present findings requires future cross-replication with larger and more representative samples of teachers in Chinese settings. In particular, compared to urban teachers in China, rural teachers face more adverse circumstance such as poorer working conditions, lower salary, fewer opportunities for promotion and heavier workloads because of teacher shortage. Thus, what keep rural teachers going in teaching profession should be an interesting research question in future studies.

Finally, one limitation in this present study could be the inclusion of the only one selected set of variables, namely school trust relationship and working conditions in prediction of teacher resilience. The need for further research is to consider multiple contexts that may influence teacher resilience. Beltman et al (2011) reviewed the contextual factors influencing teacher resilience and concluded the potential support group of family and friends outside teaching was surprisingly rarely mentioned in current studies and how best to harness this support and understand the role it may play in development of teacher resilience remains a challenge. Multiple contexts including future studies might include multiple contextual variables of family and workplace together to investigate the dynamic influences of individual, relational and organizational resilience and provide a solid empirical foundation in the development of effective intervention programs for the enhancement of resilience for teachers.

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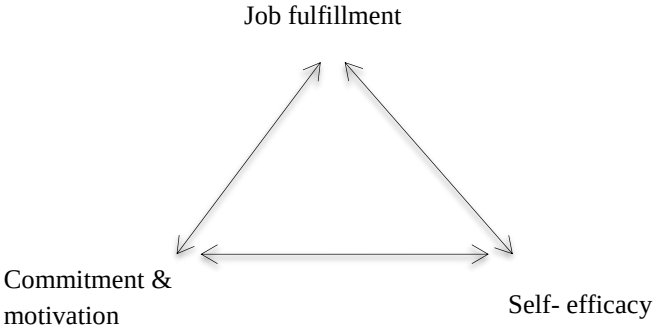

Fig.1. Triadic relationships of the elements of teacher resilience

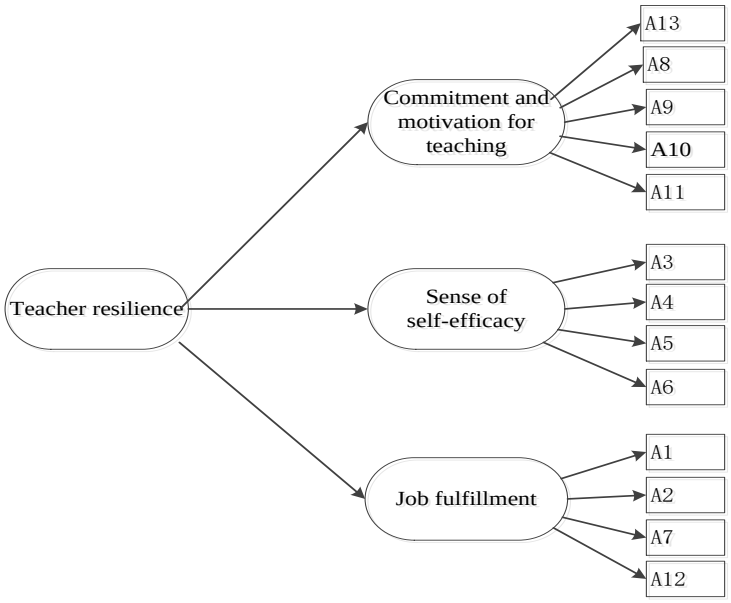

Fig.2 Hypothesized model of teacher resilience

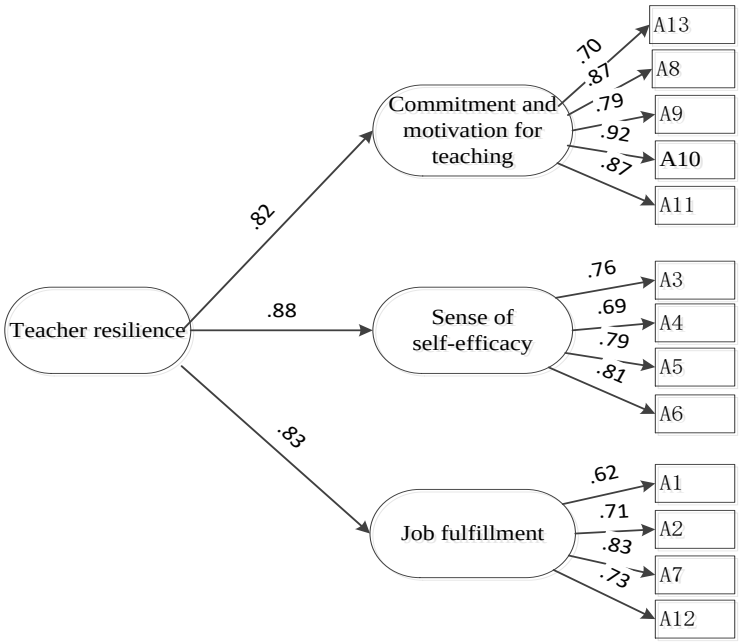

Fig.3 Confirmatory factor analysis for teacher resilience

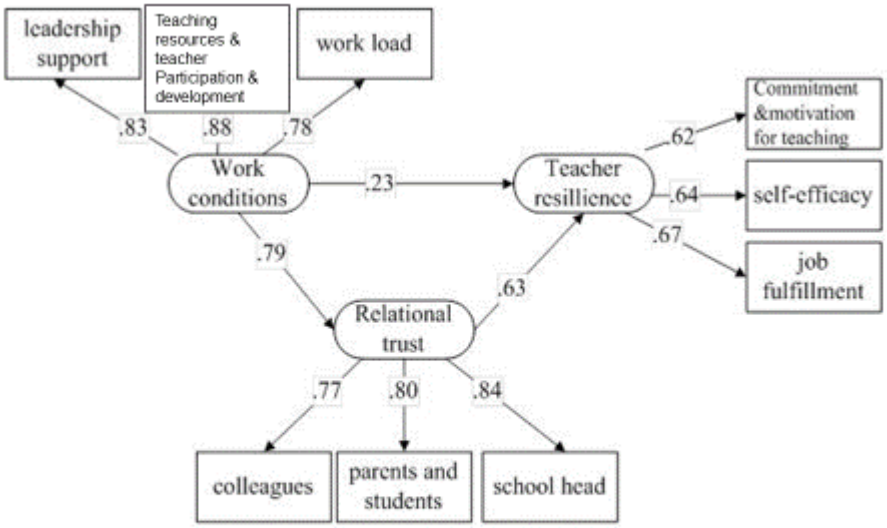

Fig.4 Structural model of relationship of work conditions trust and teacher resilience

χ^2=78.55, df=23, CFI=.98, IFI=.96, TLI=.98, RMSEA=.07

Table 1 Means, standard deviations, and correlations of work conditions, relational trust and measure of teacher resilience (N=455).

Measure	1	2	3	4	5	6	7	8	9
1. Trust in colleagues	-								
2. Trust in parents and students	.60**	-							
3. Trust in the head	.69**	.67**	-						
4. Leadership support	.51**	.51**	.62**	-					
5. School condition and empowerment	.51**	.54**	.63**	.76**	-				
6. Workload and variety	.37**	.51**	.48**	.66**	.74**	-			
7.Vocational motivation and commitment	.48**	.43**	.39**	.39**	.36**	.36**	-		
8. Self efficacy	.40**	.40**	.37**	.42**	.35**	.34**	.67**	-	
9.Job fulfillment and optimism	.52**	.58**	.57**	.58**	.52**	.52**	.65**	.66**	-
M	4.68	3.88	4.29	4.43	4.22	4.11	4.56	4.31	4.13
SD	.87	.97	1.12	.84	.78	.81	.78	.81	.92

*p < .05; **p < .01; ***p < .001