A Study of Teachers' Psychological Capitals and Supportive Behavior in Preschool Inclusive Education for Children with ASD

by

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A Thesis Submitted to

The Education University of Hong Kong

in Partial Fulfillment of the Requirement for

the Degree of Doctor of Education

August 2020

Statement of Originality

I, Shi Yin Ru, hereby declare that I am the sole author of the thesis. The material presented in this thesis is my original work except those indicated in the acknowledgement. I further declare that I have followed the University's policies and regulations on Academic Honesty, Copyright and Plagiarism in writing the thesis and no material in this thesis has been submitted for a degree in this or other universities.

Abstract

Inclusive education for students with Autism Spectrum Disorders (ASD) has increasingly received attention nationwide in China. Schools realize the problem that teachers are under stress and lack skills to handle daily interactions with these children. So far, few studies have directed effort to providing a remedy for the teachers to improve their daily work. This study aimed to train and investigate teachers' Psychological Capitals and their supportive behavior by adopting a mixed methods research design. In Study 1, a general survey (n =143) investigating Psychological Capitals was conducted among the targeted preschool teachers in preschool inclusive settings to validate the instrument among the Chinese sample. Study 2 was conducted to provide a 2-hour teacher training on Psychological Capitals in order to boost teachers' supportive behavior. Study 3, follow-up interviews were organized for those who had participated in Study 2. Their opinions and suggestions regarding the teacher training were recorded and their observation of how their learned Psychological Capitals can translate into supports for students, and how those students react accordingly. Results of confirmatory factor analysis supported the validity of Psychological Capitals in Chinese preschool teacher sample (Study 1). Pre- and Post- tests for the teacher training suggested that teachers showed a significant improvement of their perceived Psychological Capitals, and Psychological Capitals showed the positive correlation with their supportive behavior (Study 2). Finally, interview results demonstrated that most teachers provided positive feedback for the training, stating that they learned some useful skills to buffer stress and could consider more approaches to help their students (Study 3). Research findings of this study highlighted the importance to nurturing teachers to be more psychologically resourceful for combating stress, which further led to improved teaching with students in preschool inclusive education.

Keywords: Preschool inclusive education, ASD, Psychological Capitals, Supportive behavior, Workshop training

Acknowledgments

Here I would like to convey my gratitude to my supervisor Prof. Sin Kuen Fung and associate supervisor Dr. Jiang Da, who have put continuous effort in guiding me through my study. Their always insightful comments and suggestions provide opportunity for me to think deep, and dive deep into my research topics. With their support, I found that my research progress was more directed to my goals, and I was more productive on my research tasks guided by the clear research goals. Therefore, I thank heartfeltly to my supervisor and associate supervisor first for this valuable learning experience under their supervision.

Secondly, I also thank my parents, who are very kind to show emotional support all the time during my study in Education University of Hong Kong. Their care and love grow me into a strong and independent lady. Thank you for always standing by myside when I encounter setbacks and difficulties.

In addition, I am very happy to be surrounded with a group of brilliant friends with whom I can discuss research ideas and topics. Their feedback and suggestions are very useful, leading to a betterment of the theoretical conceptualization of my current study. Thank you for being there with me as always.

Finally, I would like to say ‘thank you’ to myself for not giving up and always hoping for the best during my study. It is not an easy one, especially during the Covid-19 outbreak, all my research plans had to be rescheduled. Luckily, I managed to go through all these changes and was glad to see my research outputs.

Table of Contents

List of Abbreviations

1. Autism Spectrum Disorders (ASD)
2. Psychological Capitals (PsyCap)
3. Conservation of Resources (COR) Theory

List of Figures

List of Tables

Chapter 1: Introduction

1.1 Inclusive Education for Autistic Children

Inclusive education receives a growing concern from international communities as increasingly more educational reforms have taken place in both developing and developed regions for a heightened understanding of education as a human right (Opertti & Belalcázar, 2008). With these reforms, more schools realize the needs to include students with special needs, which brings out new policies that are implemented to assist the education of children with different needs (Forlin, 2006). According to Moriña (2017, p.3), inclusive education is "an educational approach proposing schools in which all the students can participate and all are treated like valuable members…to improve the learning and active participation of all the students in a common educational content." However, even to date, the predominant attitude towards children with special needs is that they can hardly sit beside their same-age peers together in the classroom (Samadi & McConkey, 2018). Inclusive education is conceived as a great belief – that all students enjoy the benefits to participate in the high-quality education system – poses a challenge to any potential situation of exclusion and yet calls for great effort in full implementation at scale (Sapon-Shevin, 2003). In fact, children with special needs are often admitted to special schools, and the others will unluckily retained at home without much chance of education. Nevertheless, education is the very basic human right of every child who should have access to regardless of his physical or mental disabilities. Among the children with special needs, children with autism spectrum disorders (ASD) are a group of minorities that receive great attention from researchers and educators. A large number of children with ASD were diagnosed every day around the globe. According to the Centers for Disease Control and Prevention (CDCP) of the United States, children with ASD rose from 5000:1 in 1975 to 59:1 in 2018 (Centers for Disease Control and Prevention, 2018). These children show complexity of everyday needs, which is likely to cause the exclusion from full access to education and the

deprivation of some important aspects of human development (Maich, Davies, Penney, Butler, Young, & Philpott, 2019). Thanks to the growing acceptance of autistic children in the whole society, an increasing number of mainstream schools show the green light for the school admission of autistic children.

1.2 Teachers' Role in Effective Inclusive Education

Teachers play an important role in inclusive education because they charge with implementing and facilitating inclusive practices with all children in the classroom setting (Boyle, Topping, Jindal-Snape, & Norwich, 2012). Previous research studies showed that factors contributing to the quality of teaching do not exclusively depend on teachers' domain knowledge and teaching skills, but also largely depend on teachers' beliefs (Domović, Vidović Vlasta, & Bouillet, 2017). Fry and colleagues (Fry, Ketteridge, & Marshall, 2009) pointed out that affective aspects of belief play critical role in the information selection for storage and retrieval, therefore might consequently influence teachers' pedagogical approaches of teaching. Similarly, Forlin and Sin (2010) also found that teachers' attitudes towards inclusive education decide how successful its implementation by including a diverse range of children into the classroom (Forlin & Sin, 2010). The inclusive education setting is known to be very challenging in education today (Atta, Shah, & Khan, 2009) because it tries to accommodate students with a diverse range of culture and social-economic backgrounds, family structures, as well as a wide range of abilities, including children with different kinds of developmental disabilities, such as autism in this current study. To successfully implement the inclusive education practices, teachers are supposed to gain the solid understanding of domain knowledge and skills necessary for addressing the challenges in teaching as well as develop a positive mindset that is unprejudiced towards any students with special needs (Forlin, Sharma & Loreman, 2014; Domović, Vidović Vlasta, & Bouillet, 2017). Past research studies also provided supporting evidence for the influential role of teachers' attitudes and beliefs on

successful implementation of inclusive education among autistic children. For example, Foote, Piazza, Holcombe, Paul, and Daffin (1990) found significant relationships between hope and supportive behavior, self-esteem and supportive behavior, which consequently contribute to better adaptation and academic improvement of autistic children. On the other hand, lack of motivation and self-efficacy in teachers might be the major causes of ineffective teaching with autistic children, as these psychological attributes might strongly predict children's direct experience in inclusive settings (Cross, Traub, Hutter-Pishgahi, & Shelton, 2004).

1.3 Current Teacher Situation for Inclusive Education Implementation

Most educational leaders and practitioners show particular interest in how inclusive education for autistic students can be best implemented. Inclusive education is supposed to provide positive impacts on students both short and long term in a way it improves autistic children's adaptive functioning, language, social skills, meanwhile reduces challenging behavior and metal disorders (Rubenstein et al., 2019). However, Busby, Ingram, Bowron, Oliver, & Lyons (2012) pointed out that educators reported inadequate teacher preparation to teach children with ASD in inclusive settings. It is largely due to the lack of educational resources that are frequently reported in many countries and regions (Forlin, Sharma & Loreman, 2014, Forlin, 2012). Indeed, most schools lack specially designed educational pedagogy for autistic children, they lack a friendly atmosphere of integration, and more importantly they fall short of teachers who are professional trained and well prepared for autistic children in the class. The insufficient training of teachers for autistic children becomes the critical hurdles for inclusive classroom practices to be carried out smoothly in the classroom. Teachers who are not well prepared for this challenge of involving the autistic children in their teaching might fail to consider the particularity of autistic children in their pedagogical adjustment as well. As a result, autistic children are still marginalized, which is against the wishes of inclusive education. Moreover, unprepared teachers tend to experience more job

strain when accommodating the newly admitted autistic students, because they face radical changes in their teaching content and strategy in their class. Specifically, autistic students require more personal attention and care in order to catch up or fit in with their fellow peers. Thus, teachers might experience a growing level of stress when they try to cater for children with special needs while adjusting teaching accordingly for the hope of better adaptation of these children in class (Forcina, 2012). Similarly, past researchers (Opertti & Belalcázar, 2008, p.117) suggested that inclusive education with autistic children requires "…teachers and students interact with each other and generate mutual empathy and closeness..." In reality, daily interactions with autistic children at classroom settings poses pressing challenges for the teachers involved. It is indeed emotionally demanding particularly for teachers who are inadequately trained psychologically to deal with autistic children.

1.4 Psychological Capitals (PsyCap) for Teachers under Stress

Research on teacher stress has been well established (Klassen, Usher, & Bong, 2010). Knowledge of what factors causes teacher stress, as well as the understanding of which group of teachers are particularly vulnerable to high levels of stress are important (Forcina, 2012). However, knowing these do not guarantee effective stress moderation. As a matter of fact, most of the stress factors are unfortunately beyond an individual teacher's control. Thus, researchers started to explore personal characteristics of teachers that might effectively mitigate stress. Suggested by Forcina (2012, p.6), "hope for stress moderation lies within the individual teachers and their ability to manage the social and emotional demands of the profession." For preschool teachers who are exposed to a daily teaching routine of intensive interactions with autistic children in their class, we assumed that they were potentially under a high level of emotional demands. Psychological Capitals might be a good remedy for these preschool teachers to buffer their emotionally demanding interactions daily in class. This concept was initially proposed by Luthans and colleagues (e.g., see Luthans, Avolio, Avey, & Norman, 2007;

Luthans & Youssef, 2004; Luthans, Youssef, & Avolio, 2007). It has been defined as follows: "PsyCap is an individual's positive psychological state of development and is characterized by: (1) having confidence (self-efficacy) to take on and put in the necessary effort to succeed at challenging tasks; (2) making a positive attribution (optimism) about succeeding now and in the future; (3) persevering toward goals and, when necessary, redirecting paths to goals (hope) in order to succeed; and (4) when beset by problems and adversity, sustaining and bouncing back and even beyond (resilience) to attain success." (Luthans, Youssef, & Avolio. 2015, p.2).

Drawing on the conservation of resources theory (COR; Hobfoll, 2001), we assumed that teachers with these positive qualities are able to cope better at their work. Past studies supported that Psychological Capitals is indeed positively related to psychological health and job satisfaction (e.g., Luthans, Avolio, Walumbwa, & Li, 2005). In addition, researchers also evidenced that individuals with Psychological Capitals tend to buffer more effectively when they face job strain, such as stress, and emotional demands etc. (e.g., Bakker & Demerouti, 2017; Cheung, Tang, & Tang, 2011). Therefore, we concluded that Psychological Capitals could be an important factor for mitigating teachers' stress and therefore might be the valuable personal qualities that worth developing.

1.5 Statement of the Problem

The motivation behind this study was based on the fact that teachers are facing with a growing number of challenges brought up by inclusive education where they unfortunately find themselves lack adequate preparation to involve autistic students in daily interactions. Realizing the importance of psychological trainings and workshops provided to those teachers in hard time might effectively tackle challenges (e.g., lack of experience dealing with problematic behavior; emotional stress). Teacher training on Psychological Capitals was therefore proposed in the current research. Therefore, this study attempts to examine whether

the workshop on the development of Psychological Capitals will be a successful for those preschool teachers with autistic children in inclusive settings.

1.6 Significance of the Present Research

The current study might provide important contributions to inclusive education with autistic children from the following perspectives. Firstly, it could serve as a good example for potential teacher workshop trainings. As is known to all, teachers take the leading role of helping students to achieve knowledge, skills and social norms (Ozonoff, 1998). Therefore, trainings among teachers become critical because the well-trained teachers are more likely to exert positive influences on their students. This study emphasizes on the development of Psychological Capitals through a workshop training, which is so far the first study attempt to nurture hope, optimism, self-efficacy, and resilience in teachers who work with autistic kids. Previous studies evidenced that Psychological Capitals are important personal resources that can buffer negative stressors and therefore protect individuals from being stressed out (Bakker & Demerouti, 2017). More importantly, teachers who with higher levels of Psychological Capitals will also positively influence their students through the potential power of contagion (Barsade, 2002), that is, teachers who are trained for more self-efficacy, optimism, hope, and resilience might pass on their positive qualities to the autistic students through role modeling. Students who get those qualities might better adjust themselves at school. Thus, this study will contribute to the current inclusive education literature by providing more evidence of how psychologically empowered teachers will potentially foster the growth of autistic kids at school.

Moreover, Psychological Capitals can foster supportive behavior as evidenced by a large body of existing literature. Among the supports, teachers' emotional support to students can be particularly effective to promote students' self-efficacy, reduce their problematic behavior, achieve positive emotions, and develop prosocial behavior (Emam & Farrell, 2009). Thus, previous studies of autistic students in inclusive settings put great emphasis on the

investigation of emotional support from teachers. More importantly, Psychological Capitals can foster other supportive behavior apart from emotional support. More specifically, this study will investigate four different types of supportive behavior potentially provided by teachers, namely, emotional, informational, appraisal, and instrumental support. Previous literature showed that specific types of support are closely related to specific outcomes. Therefore, this study can also enlighten educators the importance of the specific supportive behavior for improving autistic students' school life.

Chapter 2: Literature Review

2.1 Autism and Contextual Development in China

Autism is a developmental disorder affecting the way that an individual perceives the world and connects with other people. Autism is not a single condition, but a spectrum disorder that results in impairments in social interaction and communication, and leads to restricted and repetitive patterns in behavior (American Psychiatric Association, 2013). The behavioral manifestation of children with ASD can vary greatly with different age groups and developmental stages. In general, there are three different levels of autism, ranging from mild to severe, requiring different levels of support needed. Thus, the unique needs of children with ASD need to be better understood to ensure appropriate educational service delivery.

A systematic worldwide review in 2012 on global epidemiological surveys revealed that the prevalence of autism and other pervasive developmental disorders has risen significantly, with an increased estimate that 1 in 160 children has an ASD over a decade from 2000 to 2012 (Elsabbagh, et al., 2012). Reasons for this increase might be due to changes in diagnostic criteria and methods (Sun & Allison, 2010), increased awareness among educational and clinical professionals (Williams, Higgins, & Brayne, 2006), improved screening and identification instruments (Kogan et al., 2009) as well as a genuine rise (Elsabbagh, et al., 2012). With regard to the west countries, autism prevalence converges at approximately 1% of school-age children in the UK (Baron-Cohen et al., 2009) and US even reaching 2% estimate in 2011-2012 (Centres for Disease Control and Prevention, 2013).

In contrast, the situation in Mainland China has been reported to be significantly lower than its western counterparts, indicating the possibility of under-diagnosis and under-detection given its large population of more than 13.7 billion (Sun & Allison, 2009, 2013; Wang et al., 2018). Several reviews consistently confirmed this underestimated prevalence situation in Mainland China. From their systemic review in 2013, Sun et al. found that the prevalence of

childhood autism in Mainland China was 11.8 per 10,000 individuals, which was later updated to be 39.23 per 10,000 by Wang et al. in 2018. Also, subsequent investigations were conducted in different cities, revealing a significant variation of autism across China. For example, in Tianjin, the prevalence of ASD was 27.5 per 10,000 among toddlers between 18-36 months old (Huang et al., 2014). In Shanghai, the prevalence of ASD was 8.3 per 10,000 among children aged 3-12 years old (Jin et al., 2018). Beijing was reported to have 119 per 10,000 of children with ASD, Jilin with 108 per 10,000, Shenzhen with 42 per 10,000 respectively. The significant variation of childhood autism in the Chinese population is believed to be affected by a variety of factors, including poor awareness and recognition of ASD among professionals, the lack of knowledge and acceptance of ASD among Chinese parents, discrepancies between diagnostic criteria, inconsistencies in screening and diagnostic instruments, etc. Therefore, researchers suggested that there is an urgent need to make more accurate diagnosis for children with ASD across diverse Chinese regions to achieve a fully robust national picture. More importantly, substantial improvement in healthcare and education systems are needed to support these children and their families to deal with difficulties and challenges when entering schools.

2.2 Implementation of Inclusive Education in Mainland China

The growing prevalence of ASD has contributed to an increasing number of children with ASD enrolling in mainstream preschool facilities (Simpson, de Boer-Ott, & Smith-Myles, 2003; Whitaker, 2002). The goal of the inclusive provision is twofold: (a) to advocate equality, human rights and diversity in a community where every child, including disabilities and those with ASD, should be given the opportunity to achieve and maintain an acceptable level of learning, without being segregated or marginalized (Armstrong et al., 2011; Florian & Black-Hawkins, 2011), and (b) to improve the quality of autistic children's social and communicative development through daily contact with their typically developing peers (McGregor & Campbell, 2001). Previous studies have indicated that children with ASD may benefit both

socially and educationally in inclusive classrooms (Strain & Bovey, 2011; Bauminger & Kasari, 2000; Chamberlain, Kasari, & Rotheram-Fuller, 2006). However, many advocators of inclusive education advised that inclusion is complex and challenging, and therefore considerable improvements remain to be implemented; (1) better school environment to reduce anxiety level of children with ASD (Humphreys, 2008), (2) increased peer understanding and attitudes to reduce bullying experience for this particular student population (Cappadocia, Weiss, & Pepler, 2012), (3) more positive teachers' attitudes towards this students population and inclusive education (Ferraioli & Harris, 2011; McGregor & Campbell, 2001), as well as (4) more empirical evidence and longer-term outcomes of effective and appropriate practices in inclusive education (Parsons, Guldberg, & MacLeod, 2011).

In general, the development of inclusive education in China is much slower than it is in the west. In China, the development of education for children with special needs on a nationwide scale began in the late 1970s when President Deng Xiaoping introduced the Reform and Open Door policy. Further development was then reinforced by the 1986 Compulsory Education Law (National People's Congress, 1986), stating that all children with and without disabilities are entitled to a 9-year compulsory education. However, given that mainstream schools were encouraged rather than mandated to accept children with disabilities, the enrollment rate for children without disabilities was much higher than children with disabilities (97% vs. 55%) from a National Survey on the Status of Disabilities in 1987.

In the mid-1980s, the majority of children with disabilities were educated in special schools run by local governments. The notion of integrating children with disabilities into general education classrooms was largely promoted by the introduction of the Law of the People's Republic of China on the Protection of Persons with Disabilities (National People's Congress, 1990) and the Regulations on Education for Persons with Disabilities (State Council, 1994). Despite the issue of the most comprehensive disability laws, education for children with

ASD or severe disabilities is not mentioned explicitly in these laws, causing inequality in providing educational opportunity for all students with disabilities (McCabe, 2002).

In response to the call for the equal right to education, the Chinese government amended the Regulations on Education for Persons with Disabilities which was first issued in 1994 (State Council, 2017). A great emphasis has been placed on prioritizing inclusive provision for children with disabilities prior to special school provision based on the severity and category of disability. Consequently, inclusive education has gain considerable attention in different cities across China, with more preschool facilities available to be in support of young children with ASD in particular. *Suiban Jiudu,* China's inclusion, is translated as "attending schools in mainstream classrooms". It started in rural and remote areas serving a purpose of providing 9-year compulsory education to children with disabilities particularly in economically poor areas where neither special schools nor other educational services for children with disabilities were available (McCabe, 2003). The major goal of *Suiban Jiudu* is to increase school enrollment and retention by integrating children with disabilities into mainstream schools, to ultimately achieve the universalization of compulsory education (McCabe, 2003). However, whether or not accepting children with disabilities is up to the discretion of each school because mainstream schools are encouraged rather than mandated to accept these children. Nevertheless, as *Suiban Jiudu* has become a common practice in Mainland China, children with ASD are provided with more educational opportunities (McCabe, 2003). One major reason of this growth is the establishment of several early childhood intervention programs at the preschool level that emphasize on educating children with ASD in inclusive settings, to improve the overall functional status of these children and to enable an easy shift for them to school life, both special schools and mainstream schools (McCabe, 2002). It is believed that more and more children with ASD will be accepted in mainstream schools and benefit from the inclusive learning experience. Despite the significant progress of early ASD inclusion in China, there are

still many challenges yet to face, such as family burden and teachers' readiness for inclusive education for children with ASD (Sun et al., 2013).

2.3 Teachers in Demand for Supporting Students with ASD

In order to ensure the realization of successful inclusive education experience for students with ASD, more attention should be redirected to what is influencing its success and effectiveness, rather than to placements alone (mainstream placement versus specialist placement) (Osborne & Reed, 2011; Zigmond, 2003). Indeed, successful inclusion requires collaborative efforts from a range of stakeholders including related service providers, administrators, schools, teachers, support personnel, parents and the students with ASD (Horrocks, White, & Roberts, 2008; Roberts & Simpson, 2016). Among these important parties, teachers are considered to be the most influential figure in students' school life. Consistent with this consensus is a substantial recommendation that teachers of students with ASD be knowledgeable about the characteristics of ASD and be skillful in a wide range of evidence-based intervention strategies that will facilitate successful inclusive classroom experiences for children with ASD (Dahle, 2003; Harrower & Dunlap, 2001; Odom, Boyd, Hall, & Hume, 2010; Odom, Collet-Klingenberg, & Rogers, 2010).

Despite a large demand of high-quality skillful teachers for inclusive education, concern for the lack of necessary knowledge and skills for teachers to work with such students in inclusive settings is growing (McGregor & Campbell, 2001; Segall & Campbell, 2012), and China is with no exception (Huang & Wheeler, 2007; Liu et al., 2016; Sun et al., 2013). In addition, Jennett, Harris, & Mesibov (2003) warned that teachers may be especially at risk for burnout in inclusive education, and show particular high work-related stress when they work with students with ASD, which may consequently lead to mental health problems, and reluctancy to work in inclusive education settings at the first place. Therefore, teachers with positive attitudes towards inclusion more readily change and adapt the ways they work in order

to benefit students with a range of learning needs (Ferraioli & Harris, 2011; McGregor & Campbell, 2001). This is particularly crucial due to the fact that autism is a highly heterogeneous disability with regard to level of functioning (e.g., ASD level 3 requiring more substantial support than ASD level 1), thus the level and intensity of supports needed for a given student can vary more greatly than the special supports for children with visual or sensory impairments. In sum, attention needs to be paid to foster teacher's positive attitude towards inclusion and children with ASD to ensure successful implementation of inclusion.

2.4 Psychological Capitals as the Potential Remedy

Past studies evidenced that Psychological Capitals could be very valuable resources protecting individuals from work strain, contributing to job performance, and organizational outcomes (Luthans, Luthans, & Luthans, 2004; Luthans & Youssef, 2004). In this case, teachers who possess Psychological Capitals are equipped with extra resources to buffer negative stressors which might lead to exhaustion and depression (Liu, Chang, Fu, Wang, & Wang, 2012). Psychological Capitals as a concept has been mentioned in various literature, such as economics, sociology, and organizational psychology, etc. According to Luthans and colleagues (Luthans et al., 2004; Luthans & Youssef, 2004), Psychological Capitals go beyond human capital (O'Leary, Lindholm, Whitford, & Freeman, 2002) and social capital (Adler & Kown, 2002). They suggested that Psychological Capitals at the individual level is personal resources that will boost growth and performance, while at the organizational level, Psychological Capitals may be the most critical competitive advantage through individuals' improved performance. In short, Psychological Capitals are considered as "a core psychological factor of positivity in general…that goes beyond human and social capital to gain a competitive advantage through investment/development of who you are." (Luthans, Avolio, Walumbwa, & Li, 2005, p.253). This study dwells on the conceptualization emerging from positive psychology movement (Seligman, 1999) for Psychological Capitals. Enlightened

by this movement, researchers started to bring a positive shift in organizational investigations. Psychological Capitals, suggested by Luthans et al. (2004, p.46), are positive capacities that can be "measurable, open to development, and can be managed for more effective work performance." Specifically, Psychological Capitals constitute four key components that are considered salient and useful to enhance individuals' positive qualities with a return of improved wellbeing and performance. They are (1) self-efficacy, (2) Hope, (3) resilience, and (4) optimism.

2.4.1 Self-efficacy

According to Stajkovic and Luthans (1998b) definition, self-efficacy refers to the "individual's conviction…about his or her abilities to mobilize the motivation, cognitive resources, and courses of action needed to successfully execute a specific task within a given context." There is a large body of theory and research support for efficacy as a positive psychological construct (e.g., Bandura, 2008). For example, multiple meta-analyses investigated efficacy and its considerable influence on performance outcomes (e.g., Stajkovic & Luthans, 1998a). Self-efficacy can be general and domain specific. This study addressed the individuals' general efficacious beliefs towards their own work. It is noted that individuals can be generally efficacious, but they could be not confident in a specific domain. It is true that a professional computer programmer can be very efficacious about writing an algorithm for testing the new program, but they might not be confident at all about playing chess.

2.4.2 Hope

Hope here is more about an "empowering way of thinking" that allows individuals to be more goal-oriented to accomplish their tasks. According to Snyder et al. (1991), hope is defined as a positive motivational state that is based on an interactively derived sense of successful (1) agency and (2) pathways (Snyder, 2000; Snyder, Rand, & Sigmon, 2002). Agency means individuals' motivation to accomplish the given goals even when they face

obstacles in goal pursuit (Snyder, 2000). In addition, agency also requires the willpower to execute a given route to goal attainment. Pathways thinking, according to Snyder (2000, 2002), is the ability to generate those necessary routes. Individuals with willpower and high ability of pathways thinking are usually considered more hopeful than their counterparts. Past evidence demonstrated the positive influence of hope on athletic, academic, and health outcomes. Hope is also found to be highly related to work performance outcomes in various studies (Youseff & Luthans, 2007, Luthans et al., 2005).

2.4.3 Resilience

Resilience is characterized by positive adaptation in the context of significant adversity or even dramatic positive changes, which is particularly helpful for individuals to bounce back effectively (Masten & Reed, 2002). Individuals who are resilient recover better and can move on faster than individuals who are not resilient. Suggested by some researchers (Richardson, 2002; Bonanno, 2004), those who are higher in resilience can bounce back psychologically, cognitively, and emotionally to the levels at, or even beyond, previous levels of equilibrium. Extensive literature from clinical and positive psychology showed that resilience can effectively contribute to individuals' work wellbeing and performance (e.g., Luthans et al., 2004).

2.4.4 Optimism

According to Carver and Scheier (2002, p.231), optimist individuals are those who "expect good things to happen to them; pessimists are people who expect bad things to happen to them". Optimists act differently from pessimists as they "differ in how they approach problems and challenges and differ in the manner with which they cope with adversity." In Seligman's (1998) attribution framework of optimism, he proposed that optimists make internal, stable, and global attributions of positive events and external, unstable, and specific attributions of negative events. On the other hand, Carver and Scheier (2002) conceptualized

optimism from an expectancy perspective, whereby optimistic process is the expectation of a desirable outcome. They found that individuals with this positive expectancy tend to continue to put effort in goal accomplishment even in the face of increasing adversity. Previous evidence showed that optimism have positive impact on various work outcomes, such as high job performance and retention rate (Jabbar, Nawaz, Rehman, Bhatti, & Choudhary, 2019; Johnson, Sanfilippo, Ohlson, & Swanson, 2019).

2.4.5 Psychological Capitals and its Validation

Psychological Capitals were originally development by Luthans and colleagues (Luthans, Avolio, Avey, & Norman, 2007) for business organizational contexts. In their research, they conducted two studies with multiple samples for validation of Psychological Capitals. More specifically, Study 1 used three samples of university students from business schools with an age range that can be considered as emerging adults. These authors reviewed the initial psychometric properties of Psychological Capitals using factorial analysis with sample 1. In sample 2, they further examined the nomological network for Psychological Capitals for its predictive validity, and in sample 3, they conducted test-retest statistics and discriminative validity. For Study 2, the authors used two different samples, one from service, and the other from high-tech manufacturing contexts. In this study, they tested hypotheses of Psychological Capitals with other related variables of interest. In general, the reliability of Psychological Capitals was acceptable across their studies and samples. The average Cronbach's alpha was .78. After the initial development and validation, researchers increased their endeavor in this topic and validated instruments of Psychological Capitals in their own research contexts. For example, Dollwet and Reichard (2014) developed Psychological Capitals in a cross-cultural research setting, and they reported a satisfying reliability for the overall instrument (.94). In Mónico, Pais, Dos Santos, and Santos' study (2014), they validated the instrument using Portuguese worker sample with satisfying reliabilities for self-efficacy

(α=.84), hope (α=.82), resilience (α=.81), and optimism (α=.70) respectively, and the overall reliability of the scale was .91. More recently, Lorenz, Beer, Pütz, & Heinitz (2016) further shortened the instrument from 24 items into 12-item Psychological Capitals using German samples with a Cronbach's alpha of .82. This shortened version of Psychological Capitals gained increasing popularities among researchers due to its satisfying reliability and relative simplicity. For example, Santana-Cárdenas, Viseu, Lopez Nunez, and Neves de Jesus (2018) used this short version to investigate a sample of Mexican workers (Cronbach's alpha was .90). Basinska and Rozkwitalska (2020) used this short version to study working individuals in multicultural work environments (Cronbach's alphas were .98 and .96 for two different samples).

2.5 Support of Psychological Capitals to Teachers

Psychological Capitals not only effectively buffer job stress, but also foster subsequent supportive behavior at work according to the previous literature (Li et al., 2014; Avey et al., 2011; Larson & Luthans, 2006). In essence, social support is defined as an individual's perception of supportive way that different people behave in his or her social network (e.g., parents, teachers, classmates, friends, colleagues, school, Demaray & Malecki, 2005). It has been indicated in the literature that social support has beneficial effects on physical well-being (House, Landis, & Umberson, 1988) and reduces psychological distress by buffering the adverse impact of stressors in life events (Cohen & Wills, 1985). Particularly in the teaching profession, Malecki and Demaray (2006) found that social support is potentially related to students' academic performance, especially for students of low socioeconomic status. More specifically, teachers' support is the crucial factor for the prediction of quicker adaptation, higher learning engagement, and better academic performance among students (e.g., Lee, 2012). The study adopted the social support type categorization developed by House (1981). According to him, four distinct types of support (emotional, informational, appraisal, and

instrumental) could be found in the existing literature.

Emotional support refers to empathy, trust, caring, listening, and belonging to a network of communication and mutual obligation. Emotional support can occur between teachers and students. A teacher can provide emotional support to children with ASD in his or her class by observing their behavior, communicating with them and showing them more care, which, in turn, can improve these children's social communication skills.

Informational support is characterized by the provision of guidance, information or advice on how to cope with personal and environmental problems. For example, in order to teach children with ASD how to count numbers, the math teacher needs to provide more real-life examples for the students and invest more effort in collecting information (e.g., supplementary materials for each unit) to facilitate the effective learning of the students.

Appraisal support involves providing evaluative feedback on behavior through a critical assessment of the positive and negative aspects of one's performance as well as suggestions for improvement. In inclusive environment, teachers need to conduct timely evaluation and assessment for their students with ASD to improve the quality of their teaching as well as their students' learning progress.

Instrumental support includes "resources such as spending time with someone or providing him or her with materials or money" (Malecki & Demaray, 2003, p.233). An example of this is the dissemination of good teaching practices and strategies, as well as clear guideline on effective teaching and learning in inclusive settings.

Malecki and Demaray (2003) found that students' value informational support from teachers more than other types of social support, given the major goal of schooling is to gain knowledge. Malecki and Demaray (2003) also found that specific types of support are closely related to specific outcomes. For example, emotional support from teachers seems to be largely associated with student success (e.g., greater school satisfaction, social skills and academic

competence), although the value of informational support, appraisal support and instrumental support should not be neglected. Additionally, Malecki and Demaray (2002, 2003) indicated that specific supportive behavior from teachers might be associated significantly with students' personal and school adjustment. Thus, it is meaningful to explore each type of support for a better understanding of how it could contribute uniquely to students' wellbeing and improvements.

2.6 Factors for Effective Teacher Professional Development

Effective teaching and learning approaches are needed to develop students' competence and enhance students' engagement in class. It is especially important for students with special needs. Therefore, teacher professional development is particularly valuable to help teachers learn necessary skills and expertise to refine the teaching approached in order to better cater for students' needs. According to Darling-Hammond, Hyler, and Gardner (2017), an effective professional development refers to structured professional learning that can lead to changes in teacher practices and improvements in students learning outcomes. These authors further identified seven widely shared features of an effective professional development based on an intensive systemic literature review of 35 methodologically rigorous studies that have evidenced the positive relationships between teacher professional development, teaching practices, and student improvement at school. These common features are summarized as follows (Darling-Hammond et al., 2017, p.5-6):

(1) ***In content focused.*** This means that teacher professional development should focus on teaching strategies that are associated with specific curriculum content in order to support teacher learning with their specific classroom contexts.

(2) ***Incorporates active learning.*** This means that teacher professional development involves active learning that allows teachers to design and try out different skills and strategies, providing then opportunities to engage in the development that is

beneficial for their students.

(3) ***Supports collaboration.*** This means that teacher professional development should provide a platform that allows teachers to share ideas and collaborate in job-embedded contexts.

(4) ***Use models of effective practices.*** This means that teacher professional development should provide some clear curricular models and instruction for teachers with a clear vision of what best practices should be implemented in their teaching contexts.

(5) Provides coaching and expert support. This means that teacher professional development should provide opportunities for coaching and expert support that allow the sharing of experience about the content and evidence-based practices.

(6) Offer feedback and reflection. This means that teacher professional development should provide adequate time and room for teachers to think about, receive input, access to information, and make changes to their practice by facilitating reflection and soliciting feedback.

(7) Sustained duration. This means that teacher professional development should offer adequate time to learn, to practices, implement, and reflect. With more time allowed, teachers can digest the knowledge, and achieve skill acquisition through real practice.

An effective teacher professional development is indeed very crucial. In this current study, we developed a teacher workshop on Psychological Capitals and tried to incorporate the above features as much as possible, so that the workshop might be more effective in nurturing teachers' psychological resources to combat negative work stressors in inclusive education. More importantly, teachers' positive changes could sooner or later transfer to their students and thus better in class behavior and

academic outcomes. Nevertheless, this study did not incorporate some of the features such as sustained duration due to time constraints and limitation (see more discussion in limitation section). However, most of the features were adopted for creating a basis for workshop development that aims to initiate a positive change in both teachers and students in this study.

Chapter 3: Research Design

3.1 Conceptual Framework in Supporting Teachers with ASD Students

As previously mentioned, teachers in inclusive settings are reported with lack of experience and professional qualities. What's more, children with ASD often exhibit indifference, lack feedback or desire, sometimes show intensive emotions and problematic behavior. Therefore, teachers are reported under high levels of stress due to intensive daily interactions with their students. This stress may contribute to mental health problems. Previous studies showed evidence that an adverse psychological environment at work significantly predict stress among teachers (Mahan, Mahan, Park, Shelton, Brown, & Weaver, 2010). For example, Shen and colleagues (Shen et al., 2014) pointed out that teachers are always asked to consider students' individual differences, and teach each of them according to their learning abilities. Therefore, teachers might feel very stressful as they are tasked with important duties of fostering the development of their students with continuous intellectual inputs. Some researchers attempted to identify positive resources for combating work stress, and they found that Psychological Capitals could be very valuable resources protecting individuals from work strain. In this case, teachers who possess Psychological Capitals are equipped with extra resources to buffer negative stressors which might directly contribute to exhaustion and depression (Liu, Chang, Fu, Wang, & Wang, 2012). Hence, Psychological Capitals might be particularly significant to the wellbeing of those teachers who are in demanding situations.

What's more important, previous studies demonstrated high associations between Psychological Capitals and supportive behavior. For example, Dougall, Hyman, Hayward, McFeeley, and Baum (2001) reported that optimism is related to social support. Foote et al. (1990) reported the presence of a significant relationship between hope and support, self-esteem and support. Similarly, teachers equipped with Psychological Capitals might show more supportive behavior to their students with ASD in class. Research in the area of social support

evidenced that the support provided to children plays an undeniable role in their outcomes (Demaray & Malecki, 2002). More specifically, this study will investigate four different types of supportive behavior provided by teachers, namely, emotional, informational, appraisal, and instrumental support. Previous literature showed that specific types of support are closely related to specific outcomes. Therefore, it is meaningful to explore each type of support for a better understanding of how the specific types of support could contribute to students' wellbeing and improvements. Also, previous research suggested that specific supportive behavior from teachers might be associated significantly with students' personal and school adjustment (Malecki & Demaray, 2003). Therefore, empowering teachers with Psychological Capitals is very meaningful in a sense that it can promote teachers' work wellbeing, and more importantly, it can potentially foster more teachers' supportive behavior so as to improve the school adaptation and performance of their students with ASD. Figure 1 shows the theoretical conceptualization of this study.

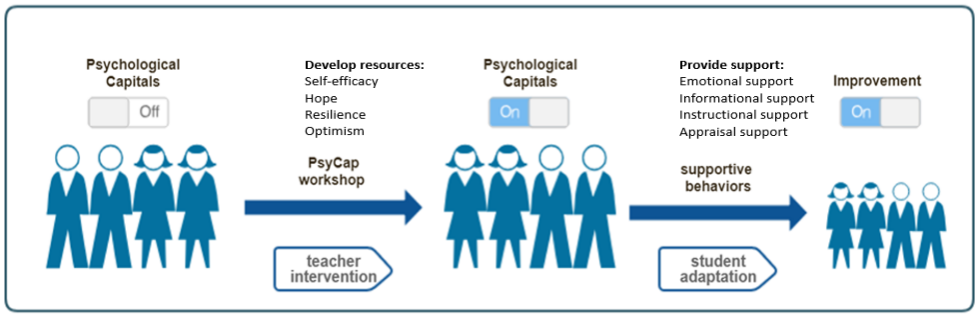

Figure 1. Theoretical Conceptualization

3.2 Overview of the Research Questions and Objectives

In this current research, three studies were conducted to investigate the preschool teachers' psychological capitals and supportive behavior in inclusive education settings. More specifically, Study 1 was a factorial validation study among Chinese preschool teachers from the inclusive setting. The validation study is very necessary because our key component of Psychological Capitals is rarely adopted in Chinese preschool teacher samples from inclusive education contexts. Validation analysis is often deemed important when instruments are

adapted form one culture context to another one. Thus, Study 1 guaranteed a reliable and valid instrument of Psychological Capitals before it was distributed for further investigation. Study 2 is a training workshop for teachers to develop their Psychological Capitals. This teacher training workshop was a combination of 1-hour online video training and 1-hour group reflection and practice with the principal investigator and her teaching assistant. Pre- and post-surveys measuring their personalities, Psychological Capitals, and supportive behavior were distributed among the participating teachers. In Study 3, follow-up interviews were conducted among these workshop participants after one week upon the completion of the workshop. Phone calls were scheduled to each of the participants in order to collect their feedback on the workshop, and their observation of how their learned Psychological Capitals can be translated into supports for students, and how those students react accordingly in the classroom setting.

This current research was composed of three studies in order to investigate preschool teachers with autistic students in inclusive education settings. More specifically, the three studies covered (1) validation on Psychological Capitals in Study 1, (2) the teacher training on Psychological Capitals in Study 2, and (3) teacher interview on Psychological Capitals Training in Study 3. These three studies were designed to achieve the following research objectives in order to fulfil the research questions proposed.

Research Objectives:

(1) To validate the instrument of Psychological Capitals in Chinese preschool teacher sample from the inclusive education context (Study 1).

(2) To examine the potential impact of Psychological Capitals on teachers' supportive behavior in class (Study 1).

(3) To develop and evaluate preschool teachers' Psychological Capitals through workshop in order to buffer job strain at work (Study 2).

(4) To examine the effectiveness of the workshop of Psychological Capitals on teachers'

supportive behavior to their students with ASD; and their students' classroom adaptation and behavior given the teachers are psychologically empowered (Study 3).

Research Questions:

(1) Is the adopted and modified Psychological Instrument adequately valid and reliable in this research context (Study 1)?

(2) Whether the workshop on Psychological Capitals is effective in nurturing Psychological Capitals in the teachers who deal with autistic students (Study 2)?

(3) Does the workshop on Psychological Capitals show positive influences on teachers' supportive behavior in class (Study 3)?

(4) Does the workshop on Psychological Capitals improve teacher performance and autistic students' classroom adaptation (Study 3)?

In total, there are six chapters in this current study. The following chapter is literature review, where various key concepts, such as preschool inclusive education, Psychological Capitals, and social support will be reviewed in great details. Next three chapters covers our three studies respectively. In each study chapter, several sections addressing different study issues are included. Basically, each study chapter will cover the description of sample participants, data collection procedures, data analytical method, and discussions of the results. Particularly in these three chapters, critical findings were reported and discussed in great details. Finally, in the final chapter, discussions on theoretical contributions, practical implications, and potential limitations and future research directions will be proposed.

Chapter 4: Study One

4.1 Study 1: Validation of the Instrument of Psychological Capitals

Study 1 was a factorial validation study among Chinese preschool teachers (N=143) from the inclusive setting. The validation study is very necessary because our key component of Psychological Capitals is rarely adopted in Chinese preschool teacher samples from inclusive education contexts. Validation analysis is often deemed important when instruments are adapted from one culture context to another one. Thus, Study 1 guaranteed a reliable and valid instrument of Psychological Capitals before it was distributed for further investigation.

4.2 Sample and Procedure

Surveys of Psychological Capitals were developed online using the form from a data collection platform (www.wenjuan.com) in Mainland China. Before distribution of the survey link, targeted teachers were contacted through personal email with an invitation for research participation. In this invitation, the research topic and purpose were explained (for more details, refer to Appendix A). A confirmation of participation directed the participants to the survey link with which they were granted access to the survey. In total, 200 teachers who worked in a coastal city of Mainland China, were invited for the study by email. 147 of them confirmed their participation. 143 questionnaires were submitted for data analysis, and 4 were never completed (e.g., participants quitted in the middle of the test, leaving the majority unanswered), thus the final response rate was 72% in this study. Power analysis conducted for the sample size of the current study using G*power software. Results indicated our sample size is adequate for the follow-up analyses.

Among the participants, most of them were female teachers (90.1%). For age, 47.6% of the preschool teachers fell into age category 21-30, 32.2% were within age category 31-40, 18.2% were within age category 41-50, and 2.1% of them did not specify their age category. Regarding educational level, the majority of them (84.7%) received university education, and

11.2 % of them received postgraduate degrees, and 4.2 % of them received high school education. Their work tenure ranged from 1 year to 30 years (SD = 8.40). The average age of the students they taught was 5.3 years old (SD = 1.88), and the average class size was 28 (SD = 7.85).

4.3 Instrumentation

In order to adapt this short version (12 items) scale of Psychological Capitals (Luthans, Avey, Clapp-Smith, & Li, 2008) into inclusive education settings for preschool teachers in Mainland China, we further modified the survey items for better fit into our own research context. Our targeted teachers were working in the educational setting, thus the original instrument developed for the business setting was not appropriate in this case. First, back-translation from English to Chinese was conducted for the instrument. Discrepancies were further discussed and revised. We then consulted one expert from educational psychology background to review the Chinese instrument of Psychological Capitals. Suggestions for potential modifications were given for adaptation to the educational context for teachers. After that, we conducted a pilot study among a few preschool teachers for face validity and content validity of the Chinese instrument. It was an in-depth interview in which these teachers were asked to provide their feedback and opinion about the clarity of the items and language use. Based on their suggestions, we further refined the Chinese instrument accordingly. The 12-item instrument of Psychological Capitals measures self-efficacy (3 items), hope (3 items), resilience (3 items), and optimism (3 items).

We also included teachers' classroom support and emotional stability in the survey questionnaire for testing predictive validity of Psychological Capitals. Classroom support behavior was included as one of the outcome variables, because the study hypothesized that Psychological Capitals could facilitate supportive behavior suggested by previous evidence from the past studies. In addition, one of the main research objective was to examine if

Psychological Capitals would have positive influence on teachers' classroom support to their students, therefore it was a good attempt to conduct a preliminary statistical analysis for the relationship between the two variables. Emotional stability was chosen as another outcome variable, because it was also included in the current study as a main criterion of participants recruitment for the workshop training. In the previous paragraphs, evidence already demonstrated that Psychological Capitals buffers emotions. It could be a potential outcome if individual can develop psychological resources. Therefore, it was tested as the outcome for predictive validity of Psychological Capitals. As a consequent, these three measures were used in the survey questionnaire for validation in Study 1 (See Appendix B for the complete Chinese questionnaire for Study 1).

1. ***Psychological Capitals:*** 12-item Psychological Capital Questionnaire (PCQ) was developed by Luthans and colleagues (, full version can be found in Luthans et al., 2007). This short scale achieved adequate reliability in previous studies (e.g., Luthans et al., 2008). This scale anchors from 1 (strongly disagree) to 5 (strongly agree). In Study 1, the reliability of 12-item Psychological Capitals was also satisfying. More specifically, the Cronbach's alphas were .78, .76, .87, .76 for self-efficacy, hope, resilience, and optimism respectively. The overall instrument of Psychological Capitals reached .92.
2. ***Emotional Stability:*** 10-item Emotional Stability scale was developed by Chaturvedi and Chander (2010). This scale achieved good reliability in their study. It anchors from 1 (strongly disagree) to 5 (strongly agree). In Study 1, the Cronbach's alpha was .86.
3. ***Classroom Supportive Behavior:*** Based on the original 60-item CASSS (Malecki et al., 2000), we further modified it into a short 16-item scale that measures four types of support from teachers (i.e., emotional, informational, appraisal, and instrumental

support). Each dimension of support was measured by 4 items. The modified short scale anchors from 1 (never) to 5 (always). In Study 1, the Cronbach's alpha was .97.

4.4 Analytical Procedures

This study aimed to validate the instrument in China sample in terms of its convergent validity, discriminant validity, and predictive validity. Sample statistics and Cronbach's alphas were computed for the study variables, and we conducted Pearson correlation for these variables in SPSS 25. Besides, confirmatory factor analysis (CFA) was used in AMOS 24 for validating Psychological Capitals among Chinese preschool teachers in inclusive education. In factor analysis, maximum likelihood estimation method was used. For CFA model fit indices, several statistics were used, including the chi-square ($\chi 2$) statistic, the root mean square error of approximation (RMSEA), the comparative fit index (CFI), and the Tucker-Lewis index (TLI). As suggested by Hu and Bentler (1999), CFI and TLI that are greater than .90 indicate a good fit, and that are greater than .95 indicate an excellent fit. For RMSEA, a cutting point of .10 indicates bad model fit.

4.5 Results

Table 1 shows the descriptive statistics, reliabilities, and Pearson correlations of the study variables. Data were checked for normality, outliners, and missing data. In Study 1, the majority of the teachers fell into age group 1 and 2. Specifically, 47.6% of them were in age category 21-30, and 32.2% percent were in age category 31-40. Regarding educational level, the majority of these teachers (84.7%) received undergraduate degrees from the university. The work tenure ranged from 1 year to 30 years (SD = 8.40). For the three key study variables, the mean of Psychological Capitals is 4.32 (SD = 60), the mean of emotional stability is 4.00 (SD = .61), and the mean of classroom support is 4.60 (SD = .59), indicating that teachers positively agreed with these survey statements made about them. In addition, the instruments of these three key variables were sound and stable according to the Cronbach's alpha (all above .70).

Table 1. Descriptive Statistics, Correlations, and Reliability [a] of the Variables (N = 143)

	Mean	SD	2	3	4
1. Psychological Capitals	4.32	.60	***(.92)***		
2. Emotional Stability	4.00	.61	.68**	***(.86)***	
3. Classroom Support	4.60	.59	.84**	.64**	***(.97)***

Note. *p < .05. **p < .01. ***p < .001.

[a] Cronbach's Alpha reliability coefficients are shown on the diagonal in parentheses.

Next, CFA was conducted to test the measurement structure of Psychological Capitals. As previously mentioned, one of the objectives of Study 1 is to validate the instrument of Psychological Capitals. Although Psychological Capitals was well researched and empirical validated across various research settings (e.g., Luthans, Avolio, Avey, & Norman, 2007; Luthans & Youssef, 2004; Luthans, Youssef, & Avolio, 2007), it is the first time that Psychological Capitals was conducted in the Chinese preschool teacher sample. Therefore, CFA is deemed necessary for validation across cultural settings. Figure 2 shows the measurement model of Psychological Capitals in our study. Results suggested that the second-order factor model of Psychological Capitals is good according to model fit ($\chi 2 = 98.14$, $df = 44$, CFI = .95, TLI = .93, RMSEA = .09), indicating the proposed structure of Psychological Capitals fits the data quite well. First-order factor loadings ranged from .51 to .89, and second-order factor loadings arranged from .91 to .97, which meet the criteria of item-level convergent validity (Table 2). For discriminant validity, we further conducted an alternative model analysis for all measuring items loading on one single factor of Psychological Capitals. Figure 3 shows the measurement structure of the alterative model. Results supported that Psychological Capitals with four components (i.e., self-efficacy, optimism, resilience, and hope) fits better than the alternative model which all these four components were forced to be one ($\Delta\chi 2$ [4] = 49.25, $p < .001$).

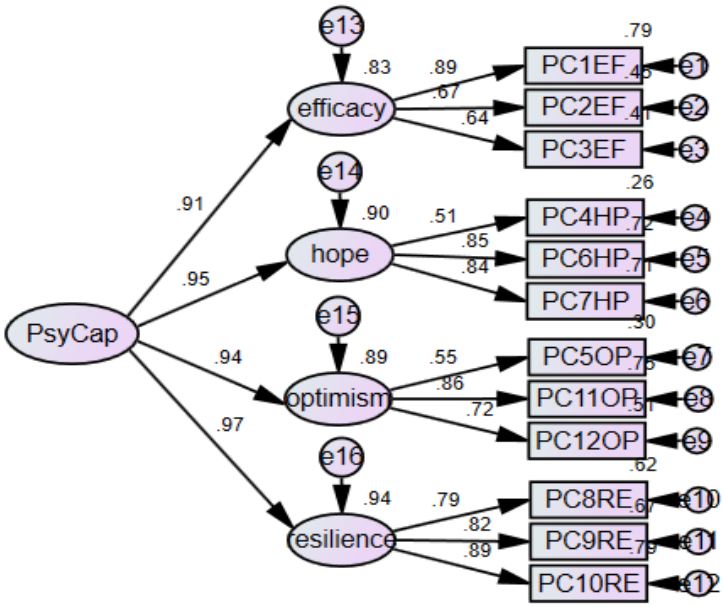

Figure 2. The Measurement Structure of Psychological Capitals

Table 2. Psychological Capitals Factor Matrix

Items	Self-efficacy	Hope	Optimism	Resilience
	.91	**.95**	**.94**	**.97**
PC1EF	.89			
PC2EF	.67			
PC3EF	.64			
PC4HP		.51		
PC6HP		.85		
PC7HP		.84		
PC5OP			.55	
PC11OP			.86	
PC12OP			.72	
PC8RE				.79
PC9RE				.82
PC10RE				.89

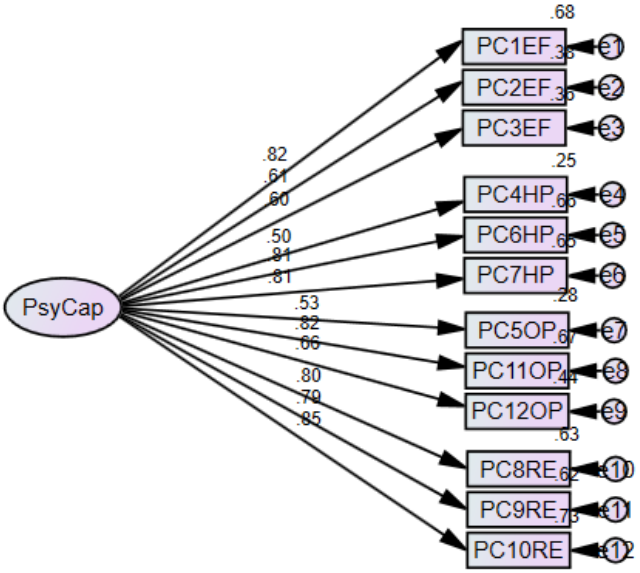

Figure 3. The Measurement Structure of the Alternative Model

Apart from the convergent and discriminant validity, we also conducted predictive validity tests for of Psychological Capitals. The predictive validity of the four components of Psychological Capitals was determined by examining their relationship with outcomes, namely emotional stability and teachers' classroom support. We assumed that self-efficacy, hope, optimism, and self-resilience all show positive relationships with the two outcomes. Figure 4 shows the structural model of Psychological Capitals and its outcomes. The model achieved a good fit according to the fit indices ($\chi 2$ = 3.49, *df* = 1, CFI = .99, TLI = .94, RMSEA = .13). Notably, RMSEA of the model is greater than .10, indicating bad fitting in most cases. However, in our case, a very low value of degree of freedom (*df* = 1) always contributed to high RMSEA. Suggested by Kenny, Kanishan, & McCoach (2015), the cut-off of RMSEA was too often falsely indicating a poor fitting model when the properly specified models are of small degree of freedom and small sample size. Thus, we used P-close as an alternative indicator for RMSEA (P-close = .11), which supported the null hypothesis that the population RMSEA is no greater than .05, further indicating a close fit of this model with the data. According to the path analysis, we found that teachers' self-efficacy is the most important predictor for both emotional stability (β= .28, SE = .09, p < .01) and Classroom support (β=

.33, SE = .06, p < .001) among these teachers. Teachers' hope moderately predicted emotional stability (β= .21, SE = .10, p < .05) and Classroom support (β= .18, SE = .07, p < .05). For optimism, it was found to be only a significant predictor for teachers' classroom support (β= .24, SE = .06, p < .001), but not for teachers' emotional stability (β= .17, SE = .08, p = .06). Similarly, resilience was also found to a significant predictor for teachers' classroom support (β= .22, SE = .07, p < .01), but not for teachers' emotional stability (β= .11, SE = .10, p = .29).

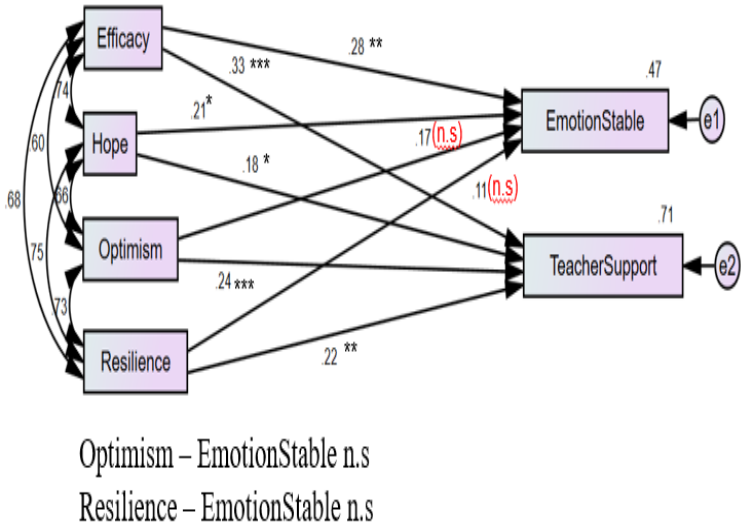

Figure 4. Path Model of Psychological Capitals

4.6 Result Summary

In short, the main purpose of Study 1 is the validation of the instrument of Psychological Capitals among a sample of Chinese preschool teachers in inclusive education. This instrument was initially developed in the US context. Though it was also adopted and validated in the Chinese context among various working samples by previous researchers (e.g., Luthans et al., 2005; Cheung, Tang, & Tang, 2011; Zhang, Zhang, & Hua, 2019), it has never been used in preschool inclusive education. Therefore, we consider it crucial to conduct the validation again for the adaptation of the instrument into our research context. Cronbach's alpha is satisfactory, and importantly CFA results supported that the instrument of Psychological Capitals performs well with our sample of preschool teachers in inclusive

education according to the various model fit indices previously discussed. Therefore, convergent validity is supported for Psychological Capitals in our study. Apart from that, competing models analysis also supported the discriminant validity of Psychological Capitals. Finally, we conducted multiple regression analysis for the predictive validity of Psychological Capitals. Emotional stability and more importantly teachers' classroom support were chosen as the potential outcomes. Results confirmed that Psychological Capitals (i.e., self-efficacy, hope, resilience, and optimism) show positive influence on emotional stability and classroom support. Thus, the predictive validity of Psychological Capitals is supported in our research context as well. With this validated instrument of Psychological Capitals, we are more confident to proceed with the study 2, in which teachers' Psychological Capitals are measured as a key indicator for the workshop effectiveness.

Chapter 5: Study Two

5.1 Study 2: Evaluation of the Teacher Training on Psychological Capitals

Study 2 is a training workshop for teachers to develop their Psychological Capitals. In total, 34 teachers participated in the workshop. This training workshop was a combination of 1-hour online video training and 1-hour group reflection and practice. Pre- and post- surveys were conducted to measure teachers' Psychological Capitals, and classroom supportive behavior before and after the workshop.

5.2 Recruitment of Participants

In Study 2, we targeted to recruit teachers from Study 1 who were potentially at risk at work for the trainings on Psychological Capitals. We followed the selection criteria for potential recruitment: (1) participants showed below average score of Psychological Capitals, or (2) participants showed below average score of emotional stability. More specifically participants who were recognized as the top 25% of the risky individuals were catered with first priority. According to our selection criteria, as long as participants fit one selection requirement as proposed either by (1) or (2), they would be contacted. We noted that some of the selected participants, though showing high Psychological Capitals as they stated, displayed very turbulent emotions at work. Thus, these teachers were also our target as emotional instability might cause stress and interpersonal conflicts at work. According to the results in Study 1, we learned that Psychological Capitals can effectively enhance teachers' emotional stability. Thus, we considered that by including teachers with unstable emotions in our workshop would benefit them to better deal with their emotions at work. We identified 51 teachers who might urgently need some trainings (see details of these participants in discussion session).

5.3 Sample Participants

After identifying the at-risk teachers (e.g. either low Psychological Capitals or low emotional stability), we contacted the participants through email for the invitation of teachers' training on Psychological Capitals. In the email, we further explained the details of the teacher training. We also included a training schedule that participants could pick, and the detailed address of avenue to carry out the training. Participants who agreed to join the study would return this training schedule with their preferred time slot and venue. In total, we got 34 teachers who confirmed the participation, thus the participation rate of the workshop was 68.0%.

Among the participants, a majority of them were female teachers (88.2%). 91.2% of the teachers were within the age range from 21 to 40. In addition, 89.3 of them received higher education (e.g., associate degree and bachelor degree). On average, the teachers had around 5 years tenure in their school (SD = 6.6). The average class size was around 27 students (SD = 8.55), and the average age of the students were five (SD = 2.01)

5.4 Design of Teacher Training on Psychological Capitals

The teacher training was designed with the purpose of improving teachers' psychological resources so that they could be more efficacious, optimistic, resilient, and hopeful at their work. More importantly, we designed the teacher training with the hope that they could grow their psychological strength with the tactics taught in the trainings and therefore could more effectively deal with daily stressful events and consequently benefit themselves as well as their students. The teacher training was generally designed with two parts, each part lasted for one hour. In the first part, participants were invited to watch a PPT animation video, which included 3 main sessions: (1) introduction session of the origin of Psychological Capitals and the key components, (2) how to develop Psychological Capitals and trainings on each of the key component, (3) summary of the workshop and key tactics to develop Psychological Capitals. In the second part, participants were asked to sit in circle with

the principal investigator for one-hour group reflection and practice of Psychological Capitals (see Appendix C for the sample slides of the workshop training).

A pre- and post-test approach was adopted to assess teachers' potential improvement in Psychological Capitals before and after the teacher training on Psychological Capitals. More specifically, pretest surveys were distributed among those teachers for measuring the initial level of Psychological Capitals and their supportive behavior. After the training, the participants were given posttest surveys together with a workshop evaluation form to collect their post-training improvements, attitudes, and feedback (A sample of pre-test questionnaire was in Appendix D; workshop evaluation form was in Appendix E). For more details of the teacher training, please refer to teacher workshop rundown in Appendix F.

5.5 Measures

We used two scales from Study 1 for the pre- and post- survey for the teacher workshop on Psychological Capitals. More specifically, they are Psychological Capitals and Classroom support. We include classroom support again in Study 2, because we considered it a critical outcome indicator for an affective training on Psychological Capitals. Therefore, we assumed that a successful workshop can not only result in enhanced post-scores of Psychological Capitals, but also lead to more classroom supportive behavior after the training.

5.6 Analytical Procedures

Study 2 aimed to conduct a workshop on Psychological Capitals for those teachers who were at risk of their work (i.e., low Psychological Capitals, low emotional stability). More specifically, pre- and post-tests using SPSS 25 were conducted for evaluating the effectiveness of the current workshop. More specifically, paired sample t-Tests were adopted for measuring the potential training effects among the same group of people before and after the workshop.

5.7 Results

In Study 2, data were also checked for normality, outliners, and missing data. Since our data were fairly normally distributed, we adopted parametric paired sample t-Tests for assessing the effectiveness of the workshop on Psychological Capitals. Table 3 shows the details of results. Generally speaking, after the workshop training, teachers showed significantly higher levels in their perceived Psychological Capitals ($t(33) = -8.10$, $p < .001$) and classroom support ($t(33) = -3.30$, $p < .01$) after the workshop. Furthermore, teachers showed improvement in all four components of Psychological Capitals, indicating that they felt more self-efficacious ($t(33) = -6.72$, $p < .001$), had more hope ($t(33) = -6.40$, $p < .001$), became more optimistic ($t(33) = -6.74$, $p < .001$), and resilient ($t(33) = -6.00$, $p < .001$) upon the completion of the 2-hour training on Psychological Capitals. Thus, we concluded that our workshop designed to foster teacher's Psychological Capitals seems to be quite effective.

Table 3. Results of Paired Sample t-Tests (N = 34)

	Pre-test		Post-test			
	M	SD	M	SD	MD	*t*
1. Psychological Capitals	3.59	.50	4.34	.55	-.75	-8.10***
1.1 Self-efficacy	3.63	.54	4.57	.64	-.95	-6.72***
1.2 Hope	3.63	.57	4.30	.70	-.68	-6.40***
1.3 Optimism	3.48	.60	4.36	.58	-.88	-6.74***
1.4 Resilience	3.62	.58	4.54	.77	-.92	-6.00***
2. Classroom Support	3.85	.66	4.12	.70	-.27	-3.30**

Note. $^{*}p < .05$. $^{**}p < .01$. $^{***}p < .001$.
M means Mean, SD means Standard Deviation, MD means Mean Difference.

In addition, we collected teachers' feedback of the workshop. Results showed that most of the teachers were satisfied with the workshop designed for them. Specifically, the majority of the participating teachers thought very positive about this workshop. 91.1% of them agreed or strongly agreed that the workshop was successful, 85.3% of them agreed or strongly agreed that it was attractive, and 82.3% of them considered the workshop helpful to them. Table 4 shows the details of teachers' feedback on the overall workshop we designed.

Table 4. Feedback on the Overall Workshop (N = 34)

	Strongly Disagree			⟷	Strongly Agree
	(1)	(2)	(3)	(4)	(5)
1. I think the workshop was successful.	0%	0%	8.8%	67.6%	23.5%
2. The workshop attracted me.	0%	0%	14.7%	58.8%	26.5%

3.	The workshop was helpful.	0%	0%	17.6%	52.9%	29.4%

We also collected teachers' feedback of the workshop quality by examining mentor's workshop implementation quality. Results showed that most of the teachers were satisfied with the content and considered the content of workshop was clear and thought-provoking. Specifically, the majority of the participating teachers thought very positive about this workshop. 94.2% of them agreed or strongly agreed that the workshop was lectured in a clear way, 97.1% of them agreed or strongly agreed that their questions and concerns were adequately solved by the mentor in the workshop, and all of the participants (100%) agreed or strongly agreed that the mentor provoked good reflections and discussions among them in the workshop. Table 5 shows the details of teachers' feedback on the workshop quality.

Table 5. Feedback on the Workshop Quality (N = 34)

		Strongly Disagree			⟷	Strongly Agree
		(1)	(2)	(3)	(4)	(5)
1.	The mentor lectured in a clear way.	0%	0%	5.8%	61.8%	32.4%
2.	The mentor showed patience when answering the questions.	0%	0%	2.9%	58.8%	38.3%
3.	The mentor provoked good reflections and discussions among us.	0%	0%	0%	61.8%	38.2%

Apart from the feedback for the workshop, we also collected teachers' opinion on how generally this workshop could change their teaching attitudes. More specifically, we would like to know if they show more self-efficacy, hope, optimism, and resilience at work in future (more details in Table 6). Similarly, most teachers held positive attitudes about the effect of the workshop. None of them doubted the meaningfulness of the workshop to enhance Psychological Capitals. Specifically, more than 80% of them agreed or strongly agreed that after the workshop, they considered themselves to be more self-efficacious, optimistic, and resilient in their future teaching, and almost 80% of them believed that they would have more hope in their job when teaching with students with ASD. These post-workshop evaluation

results were in line with the previous pre- and post-survey results, further supporting the effectiveness of the current workshop.

Table 6. Feedback on Teaching Attitudes in Future (N = 34)

	Strongly Disagree		⟷		Strongly Agree
	(1)	(2)	(3)	(4)	(5)
1. After this workshop, I believe that I can be more confident in teaching with students with ASD.	0%	0%	17.6%	41.2%	41.2%
2. After this workshop, I believe that I can be more optimistic with challenges when teaching with students with ASD.	0%	0%	14.7%	44.1%	41.2%
3. After this workshop, I have more hope in my teaching with students with ASD.	0%	0%	20.6%	50.0%	29.4%
4. After this workshop, I believe that I can be more resilient in teaching with students with ASD.	0%	0%	14.7%	58.8%	26.5%

Moreover, the smooth implementation of the workshop training on Psychological Capitals also contributed to its effectiveness. According to the feedback from the teachers, they seemed to show interest in, and passion for, further study in the topic of Psychological Capitals for the sake of their work wellbeing. Table 7 shows the details of teachers' attitudes toward future topics on Psychological Capitals.

Table 7. Comments for Future Workshop (N = 34)

	Strongly Disagree		⟷		Strongly Agree
	(1)	(2)	(3)	(4)	(5)
1. I want to have more similar trainings on these topics.	0%	0%	2.9%	47.1%	50.0%
2. I want to learn more details of the training on Psychological Capitals.	0%	0%	2.9%	38.2%	58.8%
3. I want to get extra materials about Psychological Capitals for self-training.	0%	0%	2.9%	47.1%	50.0%

5.8 Result Summary

In short, the main purpose of Study 2 is to conduct a teacher workshop on Psychological Capitals. Before the workshop, teachers with low baseline Psychological Capitals or emotional stability were identified from their general surveys completed in Study 1. We invited these at-risk teachers for participating in our workshop in hopes that they could benefit from our training and thus grow more psychological resources to buffer stress at work. In this study, we adopted pre- and post-test design for evaluating the effectiveness of the teacher workshop. Results

supported that this workshop was quite successful as it seemed to nurture Psychological Capitals to a higher level among the participating teachers upon the completion of the training. More specifically, all the four components of Psychological Capitals, namely self-efficacy, hope, resilience, and optimism, significantly increased according to the teachers' self-reports of the surveys. Moreover, we also collected teachers workshop evaluation after the training. Results showed that the majority of the teachers had very positive attitudes and feedback on (1) the overall workshop, (2) the workshop quality, (3) attitude changes in face of students with ASD, (4) intention to enroll in future relevant trainings on Psychological Capitals.

Chapter 6: Study Three

6.1 Study 3: Teachers' Perceptual View on Psychological Capitals

In Study 3, follow-up interviews were conducted among the 34 workshop participants after one week upon the completion of the workshop. Among them, 27 teachers joined the interview. Phone interviews were scheduled to each of the participants in order to collect their feedback on their observation of how their learned Psychological Capitals can be translated into supports for students, and how those students react accordingly in the classroom setting.

6.2 Sample and Procedure

One week after the teacher training on Psychological Capitals, we contacted those participants and scheduled a follow-up phone interview with them for a better understanding about their work life with the students with ASD. The teachers were informed that the interview was an important tool to have a better understanding of how to further enhance the future workshop trainings on Psychological Capitals in order to support at-risk teachers in inclusive education settings. The participating teachers gave their informed consent. They were also told that they could quit anytime from the interview. Among the 34 participants we contacted, 27 confirmed their availability of the interview. Thus, the level of participation was high (79.4%).

On average, each interview session was around 30-40 minutes for each participant. It was a semi-structured in-depth interview designed to prompt participants deeper views and values that might be hardly captured by qualitative tools, such as survey questionnaire. In this study, a semi-structured guideline was developed for the interview, where several specified major issues would be discussed. Prior to the interview, the principal investigator prepared the contents which were the major topics of interest of the study. Interview questions were carefully designed to guide the participants for a more in-depth narratives of their thoughts. In total, four sections were included in the interview: (1) section of self-introduction, (2) section of quick recap of previous teacher training on Psychological Capitals, (3) section of in-depth interview,

(4) section of other feedback. Appendix G shows more details of the interview sections. The scripts were transcribed verbatim for each participant during the interview by the research assistant temporarily hired such that the principal investigator could put more focus on the interview in terms of its flow, progress, and content quality. The research assistant was trained prior before the interview started to make sure that her documentation would be accurate for the textual analysis in Study 3. The interviews were all conducted in Chinese. For the purpose of the current study, we further translated these interviews into English. To ensure the anonymity of the interviewees, the personal information of teachers was not revealed.

Among the 27 participants who accepted the interview, the majority of them were female teachers (88.2%). 91.2% of the teachers were within the age range from 21 to 40. In addition, 89.3 of them received higher education (e.g., associate degree and bachelor degree). On average, the teachers had around 5 years teaching experiences in their school (SD = 6.6). The average class size was around 26 students (SD = 8.55), and the average age of the students were five (SD = 2.01).

6.3 In-depth Collaborative Interview

Interview is a very effective qualitative approach, which is particularly useful for exploring participants' experiences, despite that it might be very time-consuming and labor-intensive (Rowland, Dounas-Frazer, Ríos, Lewandowski, & Corwin, 2019). According to Weiss (1994), interview facilitates in-depth descriptions that make it possible to situate readers into the participants' shoes and thus develop a deeper understanding of participants' feelings and experience. Interview is a challenging skill because wrong interview methodology might induce recall bias, and also create poor rapport that prevents accurate narratives of phenomena under investigation. To avoid these issues during the interview, one potential remedy is to design the interview that can promote the participants' ownership over their narratives (Creswell & Poth, 2016). Thus, to guarantee the quality of interview, the modifications of the

conventional structured interview are encouraged to support collaborations between interviewer and the participants.

As the semi-structure nature of our interview design allowed for flexibility, artifact-approach could be incorporated during the interview for more in-depth exploration of participants' real feelings and experience. According to Rowland et al. (2019, p.2), "the use of artifacts during a narrative interview can serve to promote collaboration, help elicit detail, and direct the conversation". Artifacts can be in any visual forms, such as printed materials, photos, pictures, and other objects etc. In our study, to facilitate better implementation of our research objectives, we adopted this artifact-approach interview design. More specifically, we sent the personal profile report of the participant regarding his/her previous workshop training on Psychological Capitals right before the interview. The personal profile is a detailed analysis on this specific participant regarding his/her pre-training and post training qualities, such as psychological capitals, classroom supportive behavior, and comments and observations made by the principal investigator during the group reflection practice section in the workshop. In the personal profile, most of the analyses were visualized in a reader-friendly manner. Participants would not have much time reading through wordy profiles during the interview, thus pictures and graphs were better visual tools to facilitate the participants' narrative content, and importantly allowed more interactions between interviewer and participants.

We assumed that teachers after the successful completion of the workshop training would show enhancement in their Psychological Capitals. Further, due to personal differences, they might expect different effects in enhancing the four components of Psychological Capitals after the workshop. In addition, we considered that teachers with higher Psychological Capitals tend to show more classroom support behavior to their students with ASD than their counterparts with lower Psychological Capitals. Finally, we also considered whether the teachers' improvement after the workshop could make a positive change in their students with ASD and how.

6.4 Analytical Procedures

For the interview study, thematic analysis was adopted. According to Braun and Victoria (2012, p.57), thematic analysis is "an accessible, flexible, and increasingly popular method of qualitative data analysis. Learning to do it provides the qualitative researcher with a foundation in the basic skills needed to engage with other approaches to qualitative data analysis". First, we got familiarized with the content of the interview transcripts. In this phase, great effort was put into the data by reading and re-reading transcripts of interviews, responses to the previous qualitative surveys. Making notes on the data with whatever format that works for you (e.g., annotating transcripts, writing comments, underling portions of data) to highlight items potentially of interest and potentially aligned with your main research questions. Second, in this phase, we started to search themes from the textual data. A theme "captures something important about the data in relation to the research question, and represents some level of patterned response or meaning within the data set" (Braun & Clarke, 2006, p. 82). Then the interview contents were categorized into different themes. Another important element of this stage was the exploration of the relationships between these themes. We made sure that themes would work together to depict an overall story about the data. According to Braun and Clark (2006. p.63), "good themes are distinctive and, to some extent, stand-alone, but also need to work together as a whole." After analysis, 5 themes emerged. Third, a careful check was conducted to make sure the content under each theme was well-matched. Any mismatch was re-categorized into its proper theme. Some of the contents that belonged to none of the five themes listed were put into the miscellaneous category.

6.5 Results

In Study 3, interview scripts for the 27 participants were compiled and analyzed. The scripts were directly recorded by the research assistant during the interview, which were further refined and corrected after compiling the notes taken by the principal investigator. In total, 27

interview scripts were generated. Content analysis was conducted mainly based on the major interview questions designed for probing the deep narratives from the participants. The first interview question is *'What are the most valuable lesson you learned from this workshop?'*, the second interview question is *'What changes did the workshop on Psychological Capitals bring to you and consequently to your students in class?'*, and the third interview question is *'What suggestion and advice will you offer for the future workshop on Psychological Capitals?'* After content analysis of the interview scripts, 5 main themes emerged. Table 8 shows the summary table about the 5 themes generated from the analysis. In this current study, we listed the most typical samples from the interview scripts for the illustration purpose.

Table 8. Themes of Interview Generated from Content Analysis

Themes	Sample Extractions
Theme 1: general understanding about the workshop	Interviewee 5 Interviewee 7
Theme 2: teaching improvement	Interviewee 10 Interviewee 19
Theme 3: support for students and their performance improvement	Interviewee 2 Interviewee 3 Interviewee 9 Interviewee 11
Theme 4: fulfilling work life with more control and resources	Interviewee 1 Interviewee 12 Interviewee 15 Interviewee 21
Theme 5: concerns and suggestions	Interviewee 13 Interviewee 19 Interviewee 22 Interviewee 14 Interviewee 20 Interviewee 17 Interviewee 24

Theme 1: general understanding about the workshop

In the interview, the majority of the participants told us that they have learned new knowledge and skills during the workshop on Psychological Capitals. Some of them said that Psychological Capitals, such as self-efficacy, hope, resilience, and optimism, were exactly what they need in their daily life. They were impressed by the positive influences of the four components on various work outcomes and overall wellbeing. Some of the teachers expressed

their surprise to us when they learned that these psychological resources could be developed and nurtured in individuals for combating negative stressors in work life.

> ***Reviewee 5:*** *I think what impressed me most is that we can change something that was deemed unchangeable in our life. Most of us believe the Chinese saying, "The child is father of the man (三歲定八十)." We seemed to be very pessimistic about positive changes. However, the workshop showed me the possibility that we can even change something that we previously considered hard to change. And it is a hope for us to live more positively and cope with hardships in work and life.*

Theme 2: teaching improvement

All the participants agreed that Psychological Capitals is very beneficial to them mentally and emotionally. Some of them told us they not only learned the new concept of Psychological Capitals, but also gained some useful tactics to grow Psychological Capitals. In addition, most of the participants reached consensus that Psychological Capitals, to some degree, benefits their work as well. They tried to apply the tactics learned from the workshop to their daily work routines and achieved some desirable outcomes.

> ***Interviewee 10****: After the workshop, I tried to practice Psychological Capitals in my everyday work as suggested by the mentor. I found one significant improvement of my work routine because now I tried to break the work into small tasks and schedule them with priorities. In the workshop, the mentor taught us to achieve goals with hope… she said to break the tasks into subtasks and prioritize the most critical ones with doable approaches. I followed this practice, though it was not necessarily making me more hopeful, I was able to management my work within the schedule, and not get my work messed up.*

Interviewee 19*: I showed more confidence in my work these few days at school. In the workshop, we practiced the way to make ourselves feel more confident... to complete the small tasks one by one in order to feel confident that we can get things done. So, I set goals for myself in the teaching daily, and I didn't make them too challenging. For example, I tried to identify some most problematic students with learning difficulties, and I made learning profiles for these students to monitor their learning progress. I also told them about the goals. I worked more closely with them to accomplish these goals… sometimes I would even pay extra attention to them after class. I kept telling them that they would move on with new goals once they finished these. Because I used this approach, I felt my confidence grows together with my students' learning progress little by little, and meanwhile, we had more time stay together and work together, so that I could know them better, and intervene more timely when they faced setbacks.*

Theme 3: support for students and their performance improvement

Participants also asked about their perceived changes after the completion of the workshop. Some of them mentioned that this training on Psychological Capitals empowered them to be more supportive in class. In addition, some of them pointed out that feeling more optimistic and hopeful also leads to be more willing to offer support to their students with ASD. What's more, our participants also pointed out that students with ASD would also show some positive changes (e.g., willing to talk more, perform better, follow instructions more accurately) when they put more effort with them in daily interactions. More specifically, some teachers pointed out that instructional and informational support helped their students follow more accurately with their daily teaching, that is, students seemed to be perform their learning tasks better when their teachers put more effort in the way to provide instructions. On the other hand,

some teachers mentioned that if they offer more emotional and appraisal support, it seemed to be easier for them to establish the bonds with the kids, and more likely to encourage their students to involve with other peers while learning. Some of them mentioned to us that this is a virtuous cycle of teaching and learning among teachers and students.

> ***Interviewee 2****: In the workshop, the mentor trained us to develop our psychological resources, such as optimism, hope… We learned different skills and tactics to get ourselves more prepared with challenges in our daily work. One thing impressive is that the mentor mentioned to grow us to be more psychologically resourceful is the first step of many other meaningful changes, such as emotional copying, stress management, problem-solving, and more positive work behavior, such as helping and support. I agreed with her that if I personally feel more positive toward my work, I will have good mood to help and more involved in my work. In addition, she told us some detailed tactics to solve problems and achieve goals, which I think it could help me when I deal with my students in challenging situations. I will be more supportive in these cases because now I know more how to deal with them.*
>
> ***Interviewee 3:*** *I tried to be more supportive suggested by the mentor from the workshop. She previously taught us about the ways to tackle stressful situations at work. And also suggested to be more supportive when interacting with my students. To be honest, we all know that we need to be supportive…somehow, we just cannot fulfil that, probably because we are busy with our daily teaching schedules and other routine work. As a result, we actually neglected the important fact that kids with ASD needs more care than their ordinary peers. Thus, after the workshop, I tried to pay more attention to these kids in class. I tried to get more involved in their daily school life, talking to them, playing with*

them, and simply staying with them a bit more… they seemed to enjoy the accompany especially when you talked to them in verbal plain sentences.

Interviewee 9*: From the workshop, I learned as a teacher, our role is very critical to the young kids. Our support could foster their growth and development both emotionally and mentally. Previously I only knew that teacher support is a part of our teaching. But from the workshop, I learned there were several types of teacher supports that are particularly beneficial to students' development…like emotional support… this is what I often do at my work, like appraisal support, instructional support, and informational support... I tried to provide some other types of support to my students, and I found that instructional support and informational support are particularly useful during the teaching. My students showed clearer understanding and could follow my requests more precisely. I was very surprised to see these in my students.*

Interviewee 11: *I tried to provide more clear instructions to my students. I will break down long guidelines into short pieces so that the kids can follow what I mean. This is a tactic that I learned from the workshop. The mentor told us that we can break a big task into smaller ones so that we can implement them more smoothly. I realized that this also applies to my students. Most of my students with ASD show some difficulties when we communicate. Sometimes, they just cannot understand you very well, which could lead to frustration in them. They can talk to you, but they simply do not receive well what you want to convey. So I tried to break my instructions into smaller and simpler requests, and asked them to follow step by step…This is what I consider as my support and help to them… give clearer instructions so that the kids would avoid confusion and do better in class.*

Theme 4: fulfilling work life with more control and resources

The majority of the participants showed that they have a new understanding that some personal attributes can be trained and developed. They claimed that they previously never thought about the changes to be made to their emotion, affectivity, and psychological characteristics. But after the workshop training on Psychological Capitals, they seemed to get some control of themselves over external events, and they seemed to be learned optimistic about ways to handle their daily work.

> ***Reviewee 1:*** *After the workshop on Psychological Capitals, I learned that I can be a better teacher through effortful trainings. Previously, I thought individual's attributes can hardly be changed. For example, if I was born as a more nervous type, it would be a part of myself for the rest of my life. However, in the workshop, the mentor taught us how to cultivate hope as a positive resource in ourselves. And she confirmed with scientific evidence that we can deliberately develop hope with adequate trainings, such as positive thinking meditation.*
>
> ***Reviewee 12****: I think the workshop provided a good approach for stress management. We usually have a very intense schedule with the young kids at the daily work routine. To be honest, it is usually very tiring every day after the work. You feel like your strength and emotion are draining away. You know, sometimes these kids are really like little monsters, they cry, scream, and they cannot communicate well… which might greatly hamper my daily teaching. We just sometimes feel overloaded. In this workshop, the mentor taught us how to calm down and reset our emotions into balance. She shared stories and tactics to help us do emotion regulation in activities. I personally think, the deep breath practice is very easy-to-do and effective to slow down my heart rates.*

Interviewee 15*: The mentor provided a section that we can practice how to nurture Psychological Capitals. It is very useful, because I am empowered with the feeling that I can be better in controlling myself and the external events. Previously, I would be very frustrated when I feel I cannot get things under control. I do not want to face it, but rather I want to escape from it. For example, some kids can be very 'troublesome', and previously I just do not know how to deal with them… so I chose to avoid too much interaction with them, while focusing on students that I feel comfortable to work with…I know this is something not good, because I keep avoiding unpleasant experience. In this workshop, I learned how to be confident or the way to persuade myself to be confident to complete work tasks. I keep telling myself that I can handle my students, no matter what will happen… It is a wonderful tactic that I really become more calmed-down and confident to face the challenges.*

Interviewee 21*: Every day we worked with kids and some of them need special care. Sometimes it is really very challenging to cope with the kids with different developmental levels. They are different in terms of their learning abilities, and communication abilities etc. You have to take care of all of them, thus always leading to many extra teaching loads. Apart from the daily work routines, you need to consider all these because those 'special' kids need your extra effort…sometimes, it is really overwhelming. In the workshop, the mentor taught us about how to grow Psychological Capitals. I think it is very interesting, especially when she taught us about how to grow hope in ourselves. We need to list our goals and break the task into smaller pieces for completion step by step. Meanwhile, we need to brainstorm how to finish the task more effectively with possible approaches. I like this brainstorming, because it offers me more ways*

to reach my goal, which makes me feel secured and calm. This coping strategy is very useful to me especially when I am facing stressful situations. Getting things under control will eventually make me relax.

Theme 5: concerns and suggestions

Apart from all the positive comments and feedback from the interviewees, some of them also raised valuable suggestions for the betterment of the future workshop on Psychological Capitals.

Interviewee 3*: In future, the workshop on Psychological Capitals can be designed in separate topics. For example, future workshops can be conducted for self-efficacy, hope, resilience, and optimism respectively, so that each workshop can deal with a unique topic with more detailed trainings.*

Interviewee 8*: The teacher workshop on Psychological Capitals are very useful especially for people who work in stressful situations. I think it could be organized more often, so that our skills can be sharpened for a better survival at work. In addition, I also think it is necessary for the school leaders to know this topic and realize the importance of Psychological Capitals for their teachers. In future, schools can hold these trainings for their teachers so more teachers can benefit from it.*

Interviewee 16*: I would like to suggest that in future this workshop can set more time for practices in inclusive education settings. The workshop on Psychological Capitals…to me…was more like an introduction to the topic, so the knowledge and skills applied were quite general to most people. However, in future, a more specialized workshop on Psychological Capitals with a focus on how to improve teacher-student relationships can be organized. This is*

particularly valuable for teachers who are now in trouble with their students, and who want to remove the relationship barriers, but know little about how.

In addition, teachers also shared with us some concerns regarding (1) the long term effect of the workshop on Psychological Capitals, (2) difficulty in the development of some components of Psychological Capitals, (3) the possibility of developing Psychological Capitals in students with ASD, (4) the possibility of the scale-up for the teacher workshop on Psychological Capitals.

Interviewee 13: *The workshop was good. I learned things from it. But for a long-term impact, I think this workshop was too short and brief. Usually, when we took some professional development trainings, we usually would spend weeks, and even months for such training. I personally think if we want to achieve the impact and sustain the positive changes, we might need more intensive and longer duration trainings…I am not saying your workshop is not good. In fact, it is very interesting and helpful for our teachers. I only wonder if it could be developed into a more intensive training program for teachers to sustain Psychological Capitals in a long term.*

Interviewee 19: *From the workshop, we learned that Psychological Capitals can be developed and grew in individuals through effective trainings and interventions. But I consider it could be difficult to do so… or what I am trying to say is that growing Psychological Capitals might need professional trainings, and I am not sure that one short workshop can really help to develop the components of Psychological Capitals. To me, these four components are quite abstract. The mentor taught us the tactics for growing Psychological Capitals, but personally I might not have enough expertise to do so without any help. For example, in the workshop, we practiced about learned optimism… to perceive*

things from various angles… and to perceive them from a bright side…But I don't think this is an easy task…at least for me, I don't think that I can get used to learned optimism very easily… might need more trainings and practices to make it a habit.

Interviewee 22: *I like the idea that Psychological resources can be developed. But I just simply feel that the components of Psychological Capitals are not easy to develop. For example, the mentor told us the way to be more hopeful and optimist, and she told us that we can be trained to be more resourceful. I agree with her…but just think it may take more effort…especially, I am a person type who can hardly be described as hopeful and optimistic. I can easily get upset and anxious. Therefore, I tend to be used to get down when I encounter some bad things. I am just not used to be learned hopeful and optimistic even I know the tactics… It is difficult for me to change my temperament now…*

Interviewee 14: *The tactics I learned from the workshop was quite useful for me to deal with stressful events. I am not sure if these tactics can grow all the Psychological Capitals in me, but I really like the approaches to solve daily problems. I am wondering if I could teach these tactics to my students… will try to experiment on them.*

Interviewee 20: *From the workshop, the mentor taught us the ways to develop Psychological Capitals in us. This is very interesting that we have psychological resources, and we can grow these resources if we want. I am thinking if we can also develop students with these good qualities, such as resilience, and self-efficacy. These are important qualities for students in learning. But I am thinking the way to train Psychological Capitals among students, especially among these very young kids, might be difficult...at least, I think it is different*

from the way that the mentor trained us? Maybe in the future, students' workshop will be available as well.

Interviewee 17: *Personally, I think it is a very good workshop for us. I am wondering if you will train more teachers in the inclusive settings.*

Interviewee 24: *The Psychological Capitals are important for us teachers to manage our work life better. And I like the way to develop Psychological Capitals in myself. I feel it will be a great tool to train more teachers like us who face special students daily. It will help them to be more powerful in these situations.*

6.6 Result Summary

In short, the main purpose of Study 3 is to conduct some in-depth interviews among the teachers who participated in the workshop training on Psychological Capitals. Among the 27 teachers finally joined the interview with us, we conducted the phone interview with each of them according to their availability. We required teachers to attend the interview in quiet rooms so that our interviews could be smoothly implemented without distractions. In the interview, each of them shared with us their deeper understanding about the workshop on Psychological Capitals. After analyzing their viewpoints, several themes of discussion emerged, such as (1) general understanding about the workshop, (2) teaching improvement; (3) support for students and their performance improvement; (4) fulfilling work life with more control and resources; and (5) concerns and suggestions.

Chapter 7: General Discussion

7.1 Overview of the Findings from the Studies 1, 2 and 3

This research was composed of three studies in order to investigate preschool teachers with autistic students in inclusive education settings. More specifically, the three studies: (1) validation on Psychological Capitals, (2) the teacher training on Psychological Capitals, (3) teacher interview on Psychological Capitals Training, were designed to achieve the following research objectives of the research.

(1) To validate the instrument of Psychological Capitals in Chinese preschool teacher sample from the inclusive education context (Study 1).

(2) To examine the potential impact of Psychological Capitals on teachers' supportive behavior in class (Study 1).

(3) To develop and evaluate preschool teachers' Psychological Capitals through workshop in order to buffer job strain at work (Study 2).

(4) To examine the effectiveness of the workshop of Psychological Capitals on teachers' supportive behavior to their students with ASD; and how their students might adapt and behave in the class given the teachers are more psychologically empowered (Study 3).

7.1.1 Study 1 Discussion

Study 1 attempted to validate the instrument of Psychological Capitals in Chinese preschool teacher sample from the inclusive education context. In addition, it also explored the influence of Psychological Capitals on teachers' supportive behavior.

This study focused on preschool teachers in inclusive education settings from Mainland China. Various validity tests were conducted for the adaptation of Psychological Capitals to our Chinese preschool teacher sample. CFA results suggested both convergent and discriminant validity for Psychological Capitals. In addition, results of path analysis also

supported the predictive validity. Therefore, we can conclude that our adapted instrument of Psychological Capitals works adequately well in our research context. In addition, multiple regression analysis further suggested that self-efficacy is the most important component of Psychological Capitals to influence teachers' classroom supportive behavior when they deal with students with ASD at work. This finding is consistent with the previous literature of self-efficacy. For example, Depaepe and König (2018) investigated 342 pre-service teachers and found that self-efficacy of the teachers is highly related to their instructional practice in class. Previous researchers proposed three dimensions of teachers' instructional practice, namely cognitive activation, classroom management, and providing student learning support (e.g., König & Pflanzl, 2016). Among these, student support addressed teachers' supportive behavior such as encouraging students and provide adaptive learner support. Past studies further suggested that teachers' instructional practice can significantly enhance students' various learning outcomes (e.g., Kunter, Klusmann, Baumert, Richter, Voss, & Hachfeld, 2013). In our study, we therefore assume that Psychological capitals can influence teachers' instructional practices, leading to more support behavior in classroom settings. In addition, our results suggested that Psychological Capitals can enhance emotional stability among these teachers. More specifically, self-efficacy and hope are the two important components that account for teachers' emotion stability. Studies investigating teachers' self-efficacy found that self-efficacy is positively related to emotional well-being and job satisfaction etc. (Swider & Zimmerman, 2010, Moe, 2016). In addition, Nambudiri, Shaik, and Ghulyani (2019) pointed out that Psychological Capitals are important resources to mitigate emotional instability. Therefore, with more Psychological Capitals, teachers can more effectively buffer themselves from negative feelings and emotional up-and-downs, which consequently contributes to better welling at work and in life.

7.1.2 Study 2 Discussion

Study 2 aimed to develop and evaluate preschool teachers' Psychological Capitals through the teachers' workshop training in order to buffer job strain at work.

In Study 2, we conducted the workshop training on Psychological Capitals for at-risk teachers. We identified 51 teachers from Study 1, who might urgently need trainings on Psychological Capitals, as the analysis at personal level showed that they were either low in psychological resources at the baseline, or they reported low emotional stability. We cared about the teachers who suffered from a lack of psychological resources or experienced emotional up-and-downs at work. In order to avoid burnout and job strains in the future, we considered that these teachers should be supported with more professional trainings on the development of Psychological Capitals such that they can be more resilient and resourceful in the future. Table 9 shows the details of the 51 targeted participants for the inclusion of our workshop training. Finally, 34 teachers participated in the workshop. We tested their Psychological Capitals and classroom support both before and after the workshop training. Results demonstrated a significant growth in their perceived Psychological Capitals and classroom support upon the completion of the workshop. Moreover, all component of Psychological Capitals, namely self-efficacy, hope, optimism, and resilience, were reported to be enhanced upon after the teacher workshop. These findings suggested that our workshop might be effective for these at-risk teachers in our study, which further confirms with previous literature that Psychological Capitals trainings and interventions are generally effective to change individual psychological resources (e.g., Luthans, Avey, & Patera, 2008; Kalman & Summak, 2017). What's more, teachers' workshop evaluation also implied the effectiveness of the workshop. A majority of the participants (more than 80%) considered that (1) they can be more confident in teaching with students with ASD, (2) they can be more optimistic with challenges when teaching with students with ASD, (3) they have more hope in their teaching

with students with ASD, and (4) they can be more resilient in teaching with students with ASD. We consider the workshop is useful for the teachers, as the training results showed us the significant growth in all those four components among teachers. According to Cheung et al. (2011), self-efficacy, hope, resilience, and optimism were found as critical resources for teachers to buffer strain from emotional labor, leading to less burnout and better satisfaction at work. Nevertheless, we also consider some alternative explanations for the positive outcomes derived from the workshop training. The pre-, post- surveys and the workshop evaluation were all self-rated surveys by design. Therefore, there might be a problem that participants reported in a socially desirable way due to social norms or group pressure. In short, they tended to rate themselves more positively than negatively, which leads to a common method bias (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003) for the positive outcomes from the workshop. In addition, the participants generally showed a very positive attitude towards this workshop on Psychological Capitals, which is obvious from the results of the workshop evaluation. Suggested by attitudinal theories, "what makes an experience a pleasure is something about its relationship to the favorable attitudes of the subject who is having it: an experience is a pleasure in virtue of being, say, liked or desired by the subject who is having it, or in virtue of consisting of that subject's liking or desiring something" (Lin, 2020, p.510). In other words, if participants showed positive attitudes towards the workshop, they tended to enjoy the training, and rated the workshop experience more positively as a result. In the current study, the positive outcomes derived from the workshop might be a combined effect of both the effectiveness of the workshop and the positive attitudes that participants had for the workshop.

Table 9. Summary Statistics of the 51 Teachers

Part A: Demographic Information

Age (unit: person)			Gender (unit: person)		Education (unit: person)		
21-30	31-40	41-50	Male	Female	High school	Associate Degree	Bachelor
35	11	5	6	45	13	27	9

Tenure (unit: year)		Student age (unit: year)		Class size (unit: person)	
Mean	SD	Mean	SD	Mean	SD
6.57	7.21	5.49	2.25	27.57	8.59

Part B: Psychological Capital Score				
mean	SD	min	max	total
45.04	6.82	35	60	60

Part C: Emotional Stability score				
mean	SD	min	max	total
53.96	5.10	44	63	80

7.1.3 Study 3 Discussion

Study 3 aimed to examine the effectiveness of the workshop of Psychological Capitals on teachers' supportive behavior to their students with ASD; and how their students might adapt and behave in the class given the teachers are more psychologically empowered.

In Study 3, 27 teachers who previously participated in our workshop training indicated their availability and consent to attend the follow-up interview. Data were in textual format and were analyzed in order to provoke teachers' deeper insights of the workshop. The content analysis showed that 5 main themes emerged from the discussions in the interview. They are (1) general understanding about the workshop, (2) teaching improvement; (3) support for students and their performance improvement; (4) fulfilling work life with more control and resources; and (5) concerns and suggestions. The results of the interviews with the 27 teachers further supported that the workshop training on Psychological Capitals is effective, because (1) they seemed to reached consensus on the developmental nature of psychological resources through trainings, (2) Psychological Capitals is useful to handle work challenges, such as stress management, (3) positive work behavior are highly related to Psychological Capitals, such as classroom support, and (4) teachers' care and support can help students do better in class and school life. In short, these results also scaffold the quantitative analysis of Study 1 and Study 2, confirming that Psychological Capitals helps to nurture classroom support and enhance emotional wellbeing of the teachers in stressful situations. What's more, qualitative analysis of Study 3 provided further clues for the relationships between Psychological Capitals and

Classroom support. According to Malecki and Demaray (2002, 2003), specific supportive behavior from teachers might be associated significantly with students' personal and school adjustment. Thus, it is meaningful to explore each type of support for a better understanding of how it could contribute uniquely to students' wellbeing and improvements. From the interviews, teachers' instructional and informational support were especially beneficial for students to follow learning instructions and more involved in learning, while emotional and appraisal support were more relevant to teacher-student and student-student interactions in class. These findings were preliminary, nevertheless they were in line with previous research findings that specific supportive behavior from teachers might be associated significantly with various students' personal and school adjustment (Malecki & Demaray, 2002, 2003).

7.2 Practical Implication

The findings of the current research fulfilled the research questions and objectives in Studies 1, 2, 3. In addition, most of the findings were in line with previous research findings and added further insights to the existing literature of inclusive education. Our research has its unique contribution, because up till now very few studies have specifically examined the provision of trainings on Psychological Capitals in support of preschool teachers in inclusive classrooms in Mainland China. Findings from this study emphasized the need to improve teachers' psychological capitals when providing them with professional development training programs. To maximize the effectiveness of teacher training, the importance of knowledge and attitudes should be taken into account. Specifically, teachers in mainstream schools may best be knowledgeable about the characteristics of ASD and be skillful in a wide range of evidence-based intervention strategies (Odom, Boyd, Hall, & Hume, 2010; Segall & Campbell, 2012; Sun et al., 2013); on the other hand, teachers' psychological wellbeing, and emotional wellbeing, etc. should be trained to get them more prepared to work with children with ASD (Jennett, Harris, & Mesibov, 2003; Malecki & Demaray, 2006). Higher levels of teachers'

psychological and emotional wellbeing in the current sample implied that psychological capitals tend to empower them to buffer negative job stress (e.g., emotional distress, student-teacher conflicts, etc.) and have better emotional stability. This is of greater importance due to the fact that autism is a highly heterogeneous disability with regard to level of functioning, requiring different level and intensity of supports and care from teachers in their day-to-day work, which may be one of the main sources to increase pressure for teachers in mainstream schools (Ferraioli & Harris, 2011; McGregor & Campbell, 2001).

Increasing teachers' psychological capitals may have a direct effect on their awareness of strategies to support children with ASD in class. Higher levels of teachers' supportive behavior and better class implementation were reported after the training. Teachers showed tendency to stay along with students better and deal with students better, thus better teacher-student interactions at class. Therefore, school leaders and educational practitioners in the field of autism should work hand in hand to ensure necessary trainings that are accessible to teachers on a regular basis. In addition, schools are also encouraged to scale-up the training at the school level, thus involving more teachers to experience the positive changes brought up by the training. A deep evolution in teachers with more Psychological resources will definitely benefit teachers, students, and schools as well. Just as previous research suggested, teachers are the central figures to guarantee the successful course implementation in class, and play the influential role for predicting students' learning engagement and academic performance (e.g., Morrison, Frost, Gotch, McDuffie, Austin, & French, 2020; Ferguson-Patrick, 2018).

7.3 Limitation and Future Research

The current study presented several limitations and areas for future research. First, convenience sampling employed in this study might introduce selection bias. Teachers who did not participate might state different views from those who did. In addition, the method of subjective rating was applied to enable teachers to rate on key variables based on their

subjective reactions, opinions, feelings or desires. However, it is very likely that teachers chose to rate depending on their previous positive or negative experience educating children with ASD in the inclusive context, which may introduce common method bias in our data (Podsakoff et al., 2003). Thus, future studies are suggested to adopt more objective measures, such as classroom observations, and students' test scores etc.

Second, the results obtained in this study were limited geographically to some urban regions in Mainland China. Thus, caution needs to be taken when extending present findings to a broader population across China or in other countries. In future research, it would be interesting to encompass a more representative sample of teachers with different teaching years from various regions (e.g., urban and rural areas) across China. Alternatively, researchers are encouraged to replicate our research findings in other cultural contexts.

Third, during the interview sections, some participants did not agree to voice-record the interviews. Therefore, notes had to be written down manually. This inevitably caused some information loss during the interview sections. As a remedy, a trained research assistant was hired for the note taking. The scripts were transcribed and compared with the interviewer' notes (the principal investigator). Discrepancies were discussed and solved.

Fourth, it should be noted that the current workshop was one-off. While one-off workshops are useful in learning a new skill, or learning about a new reading scheme, they seem to be less effective when it involves a change in behavior, such as classroom behaviors of autistic students. The factors that determine the effectiveness of workshops for long-term results are the delivery strategy, intensity, and duration of the intervention (Yousafzai & Aboud, 2014). Therefore, in order to change students' classroom behavior, which is considered as a long-term process, we need to organize an extended program of seminars/workshops coupled with follow-up visits to the participant's classrooms. Meanwhile, we should visit the teacher and provide timely feedback and advice so that they can adapt teaching and learning to the

particular needs of the individual pupils. This is a main limitation for this study due to time and resource constraints. In addition, the outbreak of Convid-19 made the data collection and workshop implementation even more challenging since strict social distancing was practiced in Mainland China. In future, the workshop on Psychological Capitals should be conducted in series, and follow-up school visits and teacher seminars should be organized to enhance the positive impact of workshop on teachers, so that their positive changes can be directly or indirectly benefit the students in a long term.

Finally, the perspectives of children with ASD and their families were not included, so it is unknown how teachers who were trained with Psychological Capitals interact with children with ASD and whether the improvements felt by teachers are the same as the children with ASD and their families. It is common that different parties show different values and viewpoints even for the same event. Future research needs to investigate the perspectives of children with ASD and their parents/guardians as well, such that a more comprehensive picture will be obtained. Understanding different perspectives from a range of stakeholders will help determine if support strategies that real work to ensure the realization of successful inclusive education experience for children with ASD.

7.4 Conclusion

This study emphasized preschool teachers in inclusive education settings from Mainland China. It aimed to provide at-risk teachers with more psychological resources to buffer work stressors (e.g., emotional demands, exhaustion, and conflicts etc.) through the workshop on Psychological Capitals, such that teachers might be able to develop more self-efficacy, hope, resilience, and optimism in them, and consequently show more resources to be supportive for their students with ASD. The current study was composed of three relevant studies. Study 1 was conducted for the validation purpose of Psychological Capitals in the preschool teacher sample from Mainland China. Results demonstrated that the instrument of

Psychological capital we adopted was adequately well in our research context. In Study 2, we designed the workshop training on Psychological Capitals for the at-risk teachers, and used our adopted instrument of Psychological Capitals to monitor teachers' development of various psychological resources (e.g., hope and self-efficacy) upon the completion of the workshop. Finally, in Study 3, follow-up interviews were conducted among these workshop participants to gather their in-depth feelings and views about the perceived benefits of the workshop training (i.e., their perceived growth in these psychological resources), and more importantly, how their development in Psychological Capitals was related to their classroom supportive behavior and daily interactions with their students.

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Appendix A

This is a poster invitation sent to targeted participants for research recruitment. Teachers were contacted through email or WeChat with this invitation brochure. Anyone agreed to participate in this research was given access the survey questionnaire by clicking the survey link.

Appendix B1

总调查

背景资料（请圈出适当选项。）

1. 性别：	男 / 女
2. 年龄：	21-30 / 31-40 / 41-50 / 51-60 / 60 以上
3. 教育程度：	小学 / 中学 / 学士 / 硕士或以上
4. 工作年限：	（ ）年
5. 班级学生人数：	（ ）人
6. 班级学生平均年龄：	（ ）岁
7. 平均每天上课课时：	（ ）小时
8. 您的个人编码：	手机号**最后四位数**（ ） 例如：1391123***9571***手机号的老师的编码是 9571

I：我平时的情绪（请 √ 适当选项。）

	极不同意		⟷		**极同意**
	(1)	(2)	(3)	(4)	(5)
1. 我在绝大部分场合都能保持平静。					
2. 我能控制自己的情绪。					
3. 我能很快平静下来。					
4. 我能保持乐观向上，即使我遇到问题。					
5. 我的行为举止成熟稳重。					
6. 当我做错事，我会承认错误。					
7. 我这个人容易发脾气。					
8. 我常常忧虑。					
9. 我能处理生活中的困境。					
10. 我有时候会说话不经大脑。					
11. 我做事不会深思熟虑。					
12. 我会后悔自己做过的事情。					
13. 我会在小事情上发火。					
14. 我容易哭。					
15. 我抱怨所有事情。					
16. 我满足我现在拥有的一切。					

II：**心理资源**（请 √ 适当选项。）

	极不同意 ⟷ 极同意				
	(1)	(2)	(3)	(4)	(5)
1. 我有信心能做好自己特教工作范畴内的事情。					
2. 我有信心能为特教事业做出自己的贡献。					
3. 我有信心向自闭症的学生传递知识。					
4. 如果我在工作中陷入困境，我会想很多办法跳出困境。					
5. 现在我觉得我自己在特教工作中相当成功。					
6. 我能够想出很多办法达成自己设定的工作目标。					
7. 我正在努力达成自己设定的工作目标。					
8. 如果需要，我可以独立完成工作。					
9. 我通常能从容应对特教工作中的压力。					
10. 我能解决特教工作带来的挑战，因为我曾经遇到过相似挑战。					
11. 对自己的工作，我总是看到积极的一面。					
12. 我对将来工作中会发生的事情保持乐观心态。					

III：**教师支援**（请 √ 适当选项。）

	从不 ⟷ 总是				
	(1)	(2)	(3)	(4)	(5)
1. 当我的学生情绪不安时，我会耐心倾听。					
2. 我关心我的学生。					
3. 我公平对待每个学生。					
4. 我用心去理解每一个学生。					
5. 当我指出学生错误时，我会和他解释我为什么这么做。					
6. 我会亲自示范教导自己的学生。					
7. 我会给学生适合他们的建议。					
8. 当我的学生提出某个要求时，我会帮助他们。					
9. 我会帮助学生解决问题。					
10. 当我的学生在学习中尝试并且进步了，我会赞美他们。					

感谢您的参与！

Appendix B2

General Survey

Background information (Please answer properly)

1. Gender：	Male / Female
2. Age：	21-30 31-40 / 41-50 / 51-60 / 60 or above
3. Education：	Primary school / high school / bachelor / master or above
4. Tenure：	( ) years
5. Number of students in your class：	( ) people
6. Average age of your students：	( ) years old
7. Teaching hours everyday：	( ) hours
8. Your Unique ID：	Last 4 digits of your cellphone ( ) e.g.,1391123***9571,*** then your Unique ID is 9571

I: My emotion in general (Please answer properly)

	Strongly Disagree ⟷ **Strongly Agree**				
	(1)	**(2)**	**(3)**	**(4)**	**(5)**
1. I am calm in most situations.					
2. I control my emotions.					
3. I calm down quickly.					
4. I remain cheerful even when there are problems.					
5. I act in a mature manner.					
6. I admit when I am wrong.					
7. I get angry easily.					
8. I worry a lot.					
9. I can deal with difficulties in my life.					
10. I speak before I think.					
11. I do things without thinking too much in advance.					
12. I do things that I later regret.					
13. I get angry over minor issues,					
14. I cry easily.					
15. I complain about everything.					
16. I am pleased with what I have.					

II: Psychological resources (Please answer properly)

	Strongly Disagree ⟷ Strongly Agree				
	(1)	**(2)**	**(3)**	**(4)**	**(5)**
1. I feel confident to handle work tasks in inclusive education settings.					
2. I feel confident contributing to inclusive education.					
3. I feel confident presenting information and knowledge to my autistic students.					
4. I can think of many ways to get out of setbacks at work.					
5. Right now, I see myself as being pretty successful at work in inclusive education.					
6. I can think of many ways to reach my current work goals.					
7. I am working for the work goals that I have set for myself.					
8. I can be work on my own at work if I have to.					
9. I usually take stressful things at work in stride,					
10. I can get through difficult times at work because I have experienced difficulty before.					
11. I always look on the bright side of things regarding my work in inclusive education settings.					
12. I am optimist about what will happen to me in the future as it pertains to my work in inclusive education settings.					

III: Teacher support in class (Please answer properly)

	Never ⟷ Always				
	(1)	**(2)**	**(3)**	**(4)**	**(5)**
1. I listen to my autistic students when they get upset.					
2. I care about my autistic students.					
3. I treat fairly to every autistic student of mine.					
4. I understand every autistic student of mine.					
5. When my autistic student does something wrong, I will explain to them why it is wrong.					
6. I try to be a role model for my autistic students.					
7. I give good advice to my autistic students.					
8. I help my autistic students when they ask for.					
9. I help my autistic students solve problems.					
10. I praise my autistic students when they make progress in class.					

Thank you for your participation!

Appendix C1

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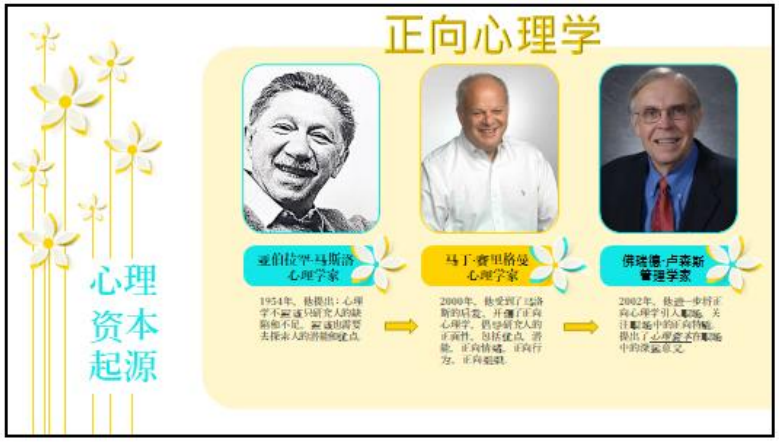
Appendix C2



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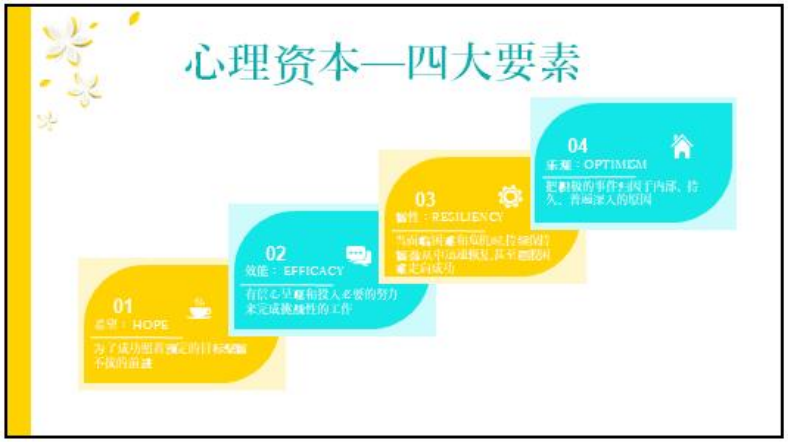
Appendix C3



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Appendix C4

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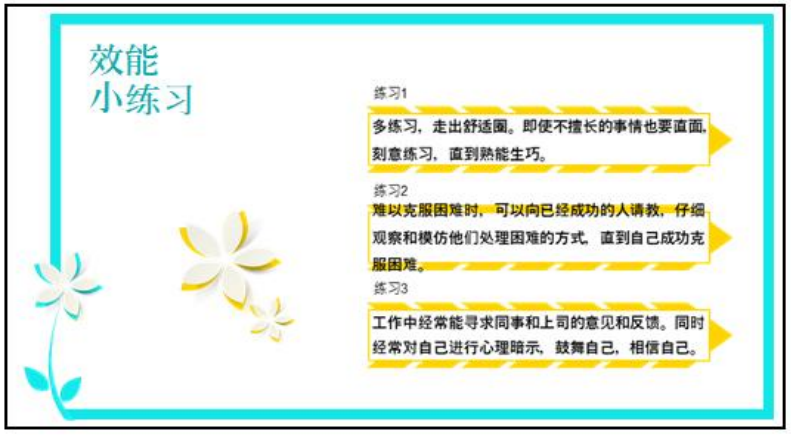

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Appendix C5

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Appendix C6

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Appendix C7

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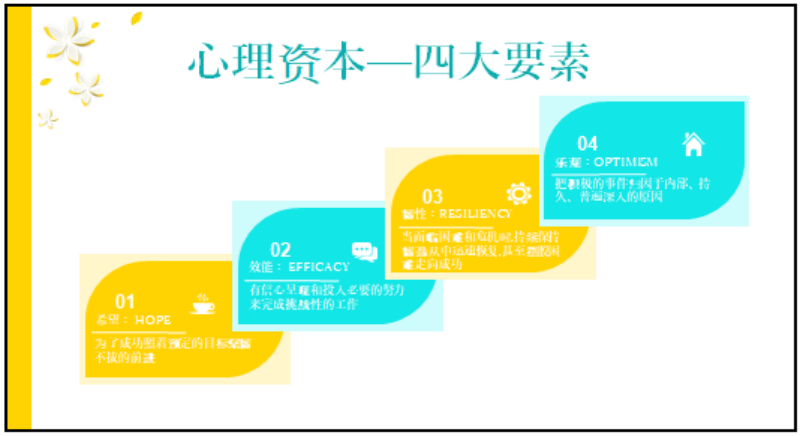

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Appendix D1

问卷调查（前测）

1. 您的个人编码：	手机号**最后四位数**（ ） 例如：1391123*9571*手机号的老师的编码是 9571

I：心理资源（请 √ 适当选项。）

	极不同意 ⟷ **极同意**				
	(1)	(2)	(3)	(4)	(5)
1. 我有信心能做好自己特教工作范畴内的事情。					
2. 我有信心能为特教事业做出自己的贡献。					
3. 我有信心向自闭症的学生传递知识。					
4. 如果我在工作中陷入困境，我会想很多办法跳出困境。					
5. 我觉得我自己在特教工作中相当成功。					
6. 我能够想出很多办法达成自己设定的工作目标。					
7. 我正在努力达成自己设定的工作目标。					
8. 如果需要，我可以独立完成工作。					
9. 我通常能从容应对特教工作中的压力。					
10. 我能解决特教工作带来的挑战，因为我曾经也遇到过相似挑战。					
11. 对自己的工作，我总是看到积极的一面。					
12. 我对将来工作中会发生的事情保持乐观心态。					

II：教师支援（请 √ 适当选项。）

	从不 ⟷ **总是**				
	(1)	(2)	(3)	(4)	(5)
1. 当我的学生情绪不安时，我会耐心倾听。					
2. 我关心我的学生。					
3. 我公平对待每个学生。					
4. 我用心去理解每一个学生。					
5. 当我指出学生错误时，我会和他解释我为什么这么做。					
6. 我会亲自示范教导自己的学生。					
7. 我会给学生适合他们的建议。					
8. 当我的学生提出某个要求时，我会帮助他们。					
9. 我会帮助学生解决问题。					
10. 当我的学生在学习中尝试并且进步了，我会赞美他们。					

Appendix D2

Workshop Survey（Pre-test）

1. Your unique ID:	Last 4 digits of your cellphone ( ) e.g.,1391123***9571,*** then your Unique ID is 9571

I: Psychological resources (Please answer properly)

	Strongly Disagree ⟷ Strongly Agree				
	(1)	**(2)**	**(3)**	**(4)**	**(5)**
1. I feel confident to handle work tasks in inclusive education settings.					
2. I feel confident contributing to inclusive education.					
3. I feel confident presenting information and knowledge to my autistic students.					
4. I can think of many ways to get out of setbacks at work.					
5. I see myself as being pretty successful at work in inclusive education.					
6. I can think of many ways to reach my current work goals.					
7. I am working for the work goals that I have set for myself.					
8. I can be work on my own at work if I have to.					
9. I usually take stressful things at work in stride,					
10. I can get through difficult times at work because I have experienced difficulty before.					
11. I always look on the bright side of things regarding my work in inclusive education settings.					
12. I am optimist about what will happen to me in the future as it pertains to my work in inclusive education settings.					

II: Teacher support in class (Please answer properly)

	Never ⟷ Always				
	(1)	**(2)**	**(3)**	**(4)**	**(5)**
1. I listen to my autistic students when they get upset.					
2. I care about my autistic students.					
3. I treat fairly to every autistic student of mine.					
4. I understand every autistic student of mine.					
5. When my autistic student does something wrong, I will explain to them why it is wrong.					
6. I try to be a role model for my autistic students.					
7. I give good advice to my autistic students.					
8. I help my autistic students when they ask for.					
9. I help my autistic students solve problems.					
10. I praise my autistic students when they make progress in class.					

Appendix D3

问卷调查（后测）

1. 您的个人编码：	手机号**最后四位数**（ ） 例如：1391123***9571***手机号的老师的编码是 9571

I：心理资源（请 √ 适当选项。）

	极不同意		⟷		**极同意**
	(1)	(2)	(3)	(4)	(5)
13. 完成工作坊后，我有信心能做好自己特教工作范畴内的事情。					
14. 完成工作坊后，我有信心能为特教事业做出自己的贡献。					
15. 完成工作坊后，我有信心向自闭症的学生传递知识。					
16. 完成工作坊后，如果我在工作中陷入困境，我会想很多办法跳出困境。					
17. 完成工作坊后，我觉得我自己在特教工作中相当成功。					
18. 完成工作坊后，我能够想出很多办法达成自己设定的工作目标。					
19. 完成工作坊后，我正在努力达成自己设定的工作目标。					
20. 完成工作坊后，如果需要，我可以独立完成工作。					
21. 完成工作坊后，我通常能从容应对特教工作中的压力。					
22. 完成工作坊后，我能解决特教工作带来的挑战，因为我曾经也遇到过相似挑战。					
23. 完成工作坊后，对自己的工作，我总是看到积极的一面。					
24. 完成工作坊后，我对将来工作中会发生的事情保持乐观心态。					

II：教师支援（请 √ 适当选项。）

	从不		⟷		**总是**
	(1)	(2)	(3)	(4)	(5)
11. 完成工作坊后，当我的学生情绪不安时，我会耐心倾听。					
12. 完成工作坊后，我关心我的学生。					
13. 完成工作坊后，我公平对待每个学生。					
14. 完成工作坊后，我用心去理解每一个学生。					
15. 完成工作坊后，当我指出学生错误时，我会和他解释我为什么这么做。					
16. 完成工作坊后，我会亲自示范教导自己的学生。					
17. 完成工作坊后，我会给学生适合他们的建议。					
18. 完成工作坊后，当我的学生提出某个要求时，我会帮助他们。					
19. 完成工作坊后，我会帮助学生解决问题。					
20. 完成工作坊后，当我的学生在学习中尝试并且进步了，我会赞美他们。					

Appendix D4

Workshop Survey（Post-test）

1. Your unique ID:	Last 4 digits of your cellphone ( ) e.g.,1391123***9571,*** then your Unique ID is 9571

I: Psychological resources (Please answer properly)

	Strongly Disagree ⟷ Strongly Agree				
	(1)	**(2)**	**(3)**	**(4)**	**(5)**
1. After the workshop, I feel confident to handle work tasks in inclusive education settings.					
2. After the workshop, I feel confident contributing to inclusive education.					
3. After the workshop, I feel confident presenting information and knowledge to my autistic students.					
4. After the workshop, I can think of many ways to get out of setbacks at work.					
5. After the workshop, I see myself as being pretty successful at work in inclusive education.					
6. After the workshop, I can think of many ways to reach my current work goals.					
7. After the workshop, I am working for the work goals that I have set for myself.					
8. After the workshop, I can be work on my own at work if I have to.					
9. After the workshop, I usually take stressful things at work in stride,					
10. After the workshop, I can get through difficult times at work because I have experienced difficulty before.					
11. After the workshop, I always look on the bright side of things regarding my work in inclusive education settings.					
12. After the workshop, I am optimist about what will happen to me in the future as it pertains to my work in inclusive education settings.					

II: Teacher support in class (Please answer properly)

	Never ⟷ Always				
	(1)	**(2)**	**(3)**	**(4)**	**(5)**
1. After the workshop, I will listen to my autistic students when they get upset.					
2. After the workshop, I will care about my autistic students.					
3. After the workshop, I will treat fairly to every autistic student of mine.					
4. After the workshop, I will understand every autistic student of mine.					
5. After the workshop, when my autistic student does something wrong, I will explain to them why it is wrong.					
6. After the workshop, I will try to be a role model for my autistic students.					
7. After the workshop, I will give good advice to my autistic students.					
8. After the workshop, I will help my autistic students when they ask for.					
9. After the workshop, I will help my autistic students solve problems.					
10. After the workshop, I will praise my autistic students when they make progress in class.					

Appendix E1

工作坊满意度调查

1. 您的个人编码：	手机号**最后四位数**（ ） 例如：1391123***9571***手机号的老师的编码是 9571

I：工作坊评估（请 √ 适当选项。）

	非常不同意 ⟷ **非常同意**				
	(1)	(2)	(3)	(4)	(5)
1. 我认为此次的工作坊很成功。					
2. 此次工作坊的内容很吸引我。					
3. 此次工作坊的内容对我有帮助。					
4. 通过此次工作坊，我相信我会更有自信地开展教学工作。					
5. 通过此次工作坊，我相信我会更加乐观地开展教学工作。					
6. 通过此次工作坊，我对我的特教工作寄有期望。					
7. 通过此次工作坊，我对我的特教工作坚持不懈。					
8. 工作坊的老师对内容的讲解很清晰。					
9. 工作坊的老师耐心解答我们的疑问。					
10. 工作坊的老师能引导我们深入思考问题。					

II：改善空间（请 √ 适当选项。）

	非常不同意 ⟷ **非常同意**				
	(1)	(2)	(3)	(4)	(5)
1. 我希望能有更多机会接受此类培训。					
2. 我希望能更详细地学习此次工作坊教授的内容。					
3. 我希望能得到更多此次培训内容相关的资料以便自学。					

Appendix E2

Workshop Evaluation

1. Your unique ID:	Last 4 digits of your cellphone ( ) e.g.,1391123***9571,*** then your Unique ID is 9571

I: Workshop evaluation (Please answer properly)

	Strongly Disagree ⟷ **Strongly Agree**				
	(1)	**(2)**	**(3)**	**(4)**	**(5)**
1. I think the workshop was successful.					
2. The workshop attracted me.					
3. The workshop was helpful.					
4. After this workshop, I believe that I can be more confident in teaching with students with ASD.					
5. After this workshop, I believe that I can be more optimistic with challenges when teaching with students with ASD.					
6. After this workshop, I have more hope in my teaching with students with ASD.					
7. After this workshop, I believe that I can be more resilient in teaching with students with ASD.					
8. The mentor lectured in a clear way.					
9. The mentor showed patience when answering the questions.					
10. The mentor provoked good reflections and discussions among us.					

II: Future improvement (Please answer properly)

	Strongly Disagree ⟷ **Strongly Agree**				
	(1)	**(2)**	**(3)**	**(4)**	**(5)**
11. I want to have more similar trainings on these topics.					
12. I want to learn more details of the training on Psychological Capitals.					
13. I want to get extra materials about Psychological Capitals for self-training.					

Appendix F

Rundown Teacher Workshop on Psychological Capitals:120 mins (1) + (2) + (3) + (4) + (5)			
(1) 10 minutes for pre- & post- surveys (1) + (5)			
(2) 50 minutes for workshop delivering (2)			
(3) 60 minutes for Group reflection & discussion & real practices (3) + (4)			
	task	Content	Preparation
(1)	Pre-surveys	• Teacher survey on Psychological Capitals, supportive behavior, and emotional stability	• Provide the valid online link in advance (***make sure the online link works***)
(2)	PsyCap workshop	• Introduction of knowledge & skills of Psychological Capitals with real life applications & quick demonstration of real practices	• Set the computer and projector (video quality check) • Internet check • Draft papers • Pencils for in-class practices and exercises
(3)	Group reflection & discussion & real practices	• Applied what have learned from the workshop to real life practices: Teachers' reflection & development on Psychological Capitals	• Prepare training portfolios for each participant • Use Growing PsyCap.doc for the training of Psychological Capitals • Use Stress Management.doc for the emotion training • Draft papers • Pencils for in-class practices and exercises
(4)	Workshop surveys	• Participants' quick feedback/ comments	• Provide the valid online link in advance (***make sure the online link works***)
(5)	Post-surveys	• Teacher survey on Psychological Capitals, supportive behavior, and emotional stability	• Provide the valid online link in advance (***make sure the online link works***)

Appendix G1

特教老师教学之深层访谈
心理资本工作坊

日期：_____
时间：_____
参与者编号：_____

I：自我介绍
1. 简介我是谁；为什么要和老师开展此次的深层访谈。
2. 在开始前，有什么疑问或者评论。

II：研究背景
1. 1 分钟的简短介绍：回顾研究的主题内容和开展工作坊的意义。
2. 1 分钟的简短心理资本个人报告。

III：深层访谈
探讨老师对此次研究目的开展的心理资本工作坊的真实想法和意见。

1. 此次的心理资本工作坊给你带来的最大收获是什么？

   --你觉得通过此次心理资本工作坊的培训后，你哪一方面的心理资本得到了提升？

2. 你觉得此次的心理资本工作坊给你和你的学生带来了哪一些实质的改变？

   --这些改变是什么？

IV：意见和建议
1. 如果将来我们再一次开展心理资本工作坊，你会给我们提什么建议和意见？

Appendix G1

In-depth Interview
Workshop on Psychological Capitals

Date： _____
Time： _____
Interviewee ID： _____

I: Introduction and Ice-breaking
1. Who am I; Why I need to have this in-depth interview with you?
2. Any questions or comments before the interview?

II: Research Background
1. One minute briefing on topic of this research; the significance of the teacher workshop
2. One minute briefing on the participant's workshop report

III: In-depth Interview
Your views and comments regarding the teacher workshop on Psychological Capitals

1. What are the most valuable lesson you learned from this workshop?
--Upon the completion of the workshop, what kinds of Psychological Capitals have you gained?

2. What changes did the workshop on Psychological Capitals bring to you and consequently to your students in class
--What are the changes?

IV: Suggestions
1. What suggestion and advice will you offer for the future workshop on Psychological Capitals?