2019

The Associations Between the Perception of Helpfulness of Teacher Induction Programs, Teacher Self-Efficacy, and Anticipated First-Year Teacher Retention in Shanghai Public Primary Schools

Xiaotian Han

University of the Pacific, x_han2@u.pacific.edu

Follow this and additional works at: https://scholarlycommons.pacific.edu/uop_etds

Part of the Educational Assessment, Evaluation, and Research Commons, and the Teacher Education and Professional Development Commons

THE ASSOCIATIONS BETWEEN THE PERCEPTION OF HELPFULNESS OF TEACHER
INDUCTION PROGRAMS, TEACHER SELF-EFFICACY, AND ANTICIPATED FIRST-
YEAR TEACHER RETENTION IN SHANGHAI PUBLIC PRIMARY SCHOOLS

by

Xiaotian Han

A Dissertation Submitted to the

Graduate School

In Partial Fulfillment of the

Requirements for the Degree of

DOCTOR OF EDUCATION

Gladys L. Benerd School of Education
Curriculum and Instruction

University of the Pacific
Stockton, California

2019

THE ASSOCIATIONS BETWEEN THE PERCEPTION OF HELPFULNESS OF TEACHER
INDUCTION PROGRAMS, TEACHER SELF-EFFICACY, AND ANTICIPATED FIRST-
YEAR TEACHER RETENTION IN SHANGHAI PUBLIC PRIMARY SCHOOLS

By

Xiaotian Han

APPROVED BY:

Dissertation Advisor: Rachelle Kisst Hackett, Ph.D.

Committee Member: Marilyn Draheim, Ph.D.

Committee Member: Heidi J. Stevenson, Ph.D.

Department Chair: Christina Rusk, Ed.D.

Dean of Graduate School: Thomas Naehr, Ph.D.

THE ASSOCIATIONS BETWEEN THE PERCEPTION OF HELPFULNESS OF TEACHER INDUCTION PROGRAMS, TEACHER SELF-EFFICACY, AND ANTICIPATED FIRST-YEAR TEACHER RETENTION IN SHANGHAI PUBLIC PRIMARY SCHOOLS

By

Xiaotian Han

DEDICATION

This dissertation is dedicated to my parents, Huiyi Han and Rongzhu Wu. Their love, encouragement, and understanding are what motivated me to complete this learning journey.

致谢

谨以此文献给我的父母：韩慧毅先生和吴蓉珠女士。是他们无私的爱，给予的理解和背后的鼓励支撑着我完成这一段重要的学习旅程。

ACKNOWLEDGMENTS

The Associations Between the Perception of Helpfulness of Teacher Induction Programs, Teacher Self-Efficacy, and Anticipated First-Year Teacher Retention in Shanghai Public Primary Schools

Abstract

By Xiaotian Han

University of the Pacific
2019

The purpose of the study was to: (a) determine to what extent the formalized teacher induction programs (TIPs) in Shanghai are perceived to be helpful for first-year public primary school teachers; (b) measure teacher self-efficacy and anticipated job retention of first-year teachers in Shanghai public primary schools; and (c) examine the degree to which these perceptions of helpfulness, teacher self-efficacy, and anticipated job retention are associated. In this study, retention is defined as remaining in a public primary school in Shanghai. Shanghai TIPs are one-year long, mandatory programs for first-year teachers in Shanghai public primary schools. The conceptual framework of TIPs includes four main components (orientation, mentoring, professional development, and teacher evaluations) as found in Horn, Sterling, and Subhan's (2002) high-quality teacher induction program component model.

An on-line survey was completed by 408 participants who held a bachelor's degree or higher along with a teaching credential and who were within their first year of teaching in a public primary school located in Shanghai. They provided their demographic information and responded to items on a perception of TIP helpfulness scale (on orientation, mentoring, professional development, and teacher evaluations), the Teacher Self-Efficacy Scale (TSES-SF; for student engagement, for instructional strategies, and for classroom management), and an

anticipated first-year teacher retention scale.

Results of the study include: (1) Overall, Shanghai public primary school teachers perceived the level of TIP helpfulness to be relatively high; however, the levels of helpfulness varied across the four components (orientation, mentoring, professional development, and teacher evaluation); (2) Teacher self-efficacy regarding instructional strategies was reported to be higher than efficacy regarding classroom management and student engagement; (3) The majority of first-year teachers expressed agreement with plans to stay in the same position; (4) Perceptions regarding TIP helpfulness, overall, were not found to significantly correlate with teacher self-efficacy, overall; (5) To a limited extent ($r = -.142$, $p < .01$) self-efficacy scores negatively correlate with anticipated retention such that those expressing higher levels of teacher self-efficacy are those with lower anticipated teacher retention (as a public primary school teacher in Shanghai) scores, whereas a positive association was hypothesized; (6) The perception of overall TIP helpfulness was a statistically significant predictor of anticipated teacher retention; and (7) There is insufficient evidence to suggest that teacher self-efficacy mediates the effect of Shanghai TIP helpfulness, overall, on anticipated teacher retention. Additional findings, explanations, implications, and suggestions for future research are also discussed for Shanghai public schools.

TABLE OF CONTENTS

LIST OF TABLES

Table

LIST OF FIGURES

Figure

Chapter 1: Introduction

In recent years, supporting and retaining teachers has become a critical issue worldwide due to the rising teacher attrition rate. Research pointed out challenges associated with high teacher attrition rates. In the most recent published longitudinal study in the U.S, "Public School Teacher Attrition and Mobility in the First Five Years," ten percent of U.S. first-year teachers in the public schools in 2007-08 did not return the following year (Gray, Taye, & O'Rear, 2015). The attrition rate increased to twelve percent within three years, fifteen percent within four years, and seventeen percent within five years. In England, 50,110 new-qualified teachers (representing a 10.5% teacher attrition rate) left the state-funded schools within 12 months (Foster, 2018). In China, the anticipated teacher retention rate has been decreasing over the past decade. Ding (2011) surveyed 11,190 public school teachers in China and reported that 62% of teachers considered leaving, with first-year teachers being the primary contributing group. First year teaching experiences are associated with teacher self-efficacy, job satisfaction, lifelong professional development, and anticipated teacher retention (Ren, 2014).

To support and further retain new teachers, Teacher Induction Programs (TIPs) were developed in western countries during the early 1960's and had become widely accepted by the 1980's. TIPs are "professional development programs and are designed to offer support, guidance, and orientation for beginning teachers during the transition into their first teaching job" (American Institutes for Research [AIR], 2015a, p. 5). It is "the period when teachers have their first teaching experience and adjust to the roles and the responsibilities" (Nielsen, Barry, & Addison, 2007, p. 15). TIPs can refer to a variety of activities involving new-qualified teachers, such as orientation, mentoring, professional development, collaboration with teacher networks, adjusting workload, and resource support (Clark, 2012; Harfitt, 2014; Huling, Resta, & Yeargain,

2012; Ingersoll & Smith, 2004; Ingersoll & Smith, 2012; Nielsen et al., 2007; Odell, 1992).

Research indicates that TIPs are influential in raising the quality and efficiency of beginning

teachers, improving teacher self-efficacy, and having the potential to keep teachers in the

profession (Alia, Muhammad, & Mishab, 2017; Allen, 2014; Dangler, 2007; Lemon & Garvis,

2017; Wong, Britton, & Ganser, 2005).

In Shanghai, growth in the percentage of teachers who are in their first year of teaching

has gained attention because of employee retirement rising, migrants increasing, the One-child

policy abolished, and new schools developing needs. The thirteenth Shanghai Education

Revolution and Development Plan (2016-2020) clarified that developing Shanghai's TIP is one

of ten crucial projects during the period of 2016-2020. To promote the plan, the Shanghai

Municipal Government and Shanghai Education Municipal Commission are providing essential

support in terms of organization, finance, policy, and resources (Shanghai Municipal People's

Government Office, 2016).

Another reason for supporting TIPs is that first-year teachers face multiple challenges due

to several factors. One challenge is that the standards for teachers in Shanghai public primary

schools have continued to rise since the Cultural Revolution ended. Shanghai Municipal

Education Colleges were re-opened in 1978. Training was initiated with 67,000 in-service

teachers to meet the teacher standards in 1981 (Zhang, 2016). In 1987, teacher evaluation

standards were widely implemented in each province because of the Three Orientation

Statements (that highlighted the future of education in China) and the decision to reform the

education system (Central Committee of the Communist party, or CCP) in 1985. To remain

qualified as an in-service teacher, all primary and secondary teachers were required to complete

at least 240 hours of training over five-year periods since 1989. After a decade of practice, the

Shanghai Educational Municipal Commission updated teacher career ladders in the teacher evaluation system so that teachers are evaluated and promoted according to their quality ratings instead of years of teaching experience. The contracts of teachers who do not qualify or achieve standards are suspended.

The second challenge is that the content of early-developed Shanghai TIPs do not meet first-year teachers' needs. Compared to TIPs in the United States and other countries in Europe, which have longer histories in supporting the first-year teachers, TIPs in China are relatively new. For example, the Shanghai TIP was developed in 1985, proposed in 1999 by the Shanghai Educational Municipal Commission, and instituted in 2001. The earlier versions of the TIPs suggested teachers complete more than 120 hours of school-based training and mentoring in the first teaching year; however, details about the content of programs and how to organize activities were blurred (Chen & An, 2016). A common reason given for perceptions that the TIPs were less helpful was that the content of early-developed TIPs was not meeting teachers' needs. Smith and Ingersoll (2004) proposed the top three topics that first-year teachers need to learn are instructional strategies (including differentiated instruction), emotional support, and classroom management via studying the U.S nationally representative 1999-2000 schools and staffing survey. However, the earlier Shanghai TIP did not include all these three topics. According to the Education Commission policy in Shanghai, the three main areas for first-year teacher development in the earlier TIPs were: (a) educational and professional ethics (mainly understood as learning about professional behaviors and ethics), (b) education and teaching theory (helping the first-year teachers to develop class activities and be responsible for students' academic achievement and mental health), and (c) education and teaching practical skills (chiefly to follow the curriculum guidelines and content, and to develop instructional plans for the class) (Shanghai

Education Committee, 1998). Also, first-year teachers complained that lecturing was the main activity in the earlier TIPs and it did not motivate teachers to contribute ideas and collaborate within networks.

The third challenge that Shanghai first-year teachers encounter is that they have relatively low teaching self-efficacy than experienced teachers as those first-year teachers in the other countries (Ding, 2014; Manzar-Abbas, Khurshid, & Rizvi, 2018). Teaching self-efficacy is "beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments" (Bandura, 1997, p. 3). Literature discloses that low teaching self-efficacy may lead to inferior student outcomes, lower job satisfaction, and decreased motivation for remaining in teaching (Mintzes, Marcum, Messerschmidt-Yates, & Mark, 2012; Wiesman, 2016; Zakeri, Rahmany, & Labone, 2016).

In response to the demands placed upon first-year teachers and policy changes, the Shanghai TIP was reformed in 2012. This formalized TIP version reorganizes and consolidates resources from Shanghai Educational Municipal Commission, school districts, and schools, utilizes rich activities and a reasonable teacher evaluation system (Chen & An, 2016). However, first-year teachers' perspectives of this new program and the evaluation of this program are mentioned but not systematically investigated. Also, few studies have addressed the potential variation in perceptions of helpfulness of the formalized TIP version for first-year teachers with different educational backgrounds.

Problem Statement

In China, the anticipated teacher retention rate has been decreasing over the past decade and first-year teachers are the leading group exiting the profession. Although there is few Chinese researches studied the effect of decreasing teacher retention rate, literature from other

countries indicated the problems associated with the high teacher attrition rate include difficulty maintaining a teaching force, financial costs waste, and negative effects on student academic outcomes (Alliance for Excellent Education, 2005; Duncan, 2009; Ingersoll & Smith, 2004). Due to the increasing number of students to be served as part of this period of compulsory education, teachers are in demand. According to Shanghai Financial Report, the financial support for teachers' professional development is increasing year after year, from 3,851 million yuan in 2017 to 7,772 million yuan in 2018. If the attrition rate of teachers continues to rise, the investment in education will be quickly reduced. In addition, high teacher turnover may harm students' academic achievement.

In Shanghai, the TIP is regarded as an essential part of lifelong professional development programs to both retain first-year teachers and keep improving the first-year teachers' teaching effectiveness. However, few studies discuss how helpful formalized TIPs in Shanghai have been, and few studies have explored the results from first-year teachers' perspectives. The formalized TIP has been implemented in Shanghai since 2012, but current studies about the program are limited to the induction program's organization and curriculum content (e.g., Chen & An, 2016; Zhang, Ding, & Xu, 2016).

Given that the teacher attrition rate of first-year teachers reflects, at least in part, the effectiveness of the formalized TIP, it is necessary for administrators and education policymakers to investigate the quality of the current formalized TIP from first-year teachers' perspectives and to adjust induction programs to better support their efficacy and anticipated retention.

Purpose of the Study

The purpose of the study is to: (a) determine to what extent the formalized teacher induction programs in Shanghai are helpful for first-year teachers; (b) measure teacher efficacy

and anticipated job retention of beginning teachers in Shanghai primary school; and (c) examine the degree to which these perceptions of helpfulness, teacher efficacy, and anticipated job retention are associated.

Significance of the Study

Shanghai is a metropolis in China with a population of 24.15 million people, and its educational philosophy is to "teach for every student's life-long development" (Shanghai Municipal Government, 2016). According to the statistics in 2015, Shanghai has 764 primary schools (from Grade 1 to Grade 5), and the number of students in primary schools is increasing from 70.16 million in 2010 to 79.87 million in 2015 (with 99.9% student enrollment). Because of the growth of the student population in recent years and its educational philosophy, training and retaining teachers is necessary and has become an essential issue.

Moreover, first-year teachers are the fresh blood in the teaching force. According to the data, 18% of Shanghai teachers are novice teachers (with teaching experience ranging between one to three years) and the number of first-year teachers is increasing (Wu, 2018). Also, the research literature indicates that the teachers' first year of experience of teachers is related to job satisfaction, sense of teaching efficacy, and anticipated job retention. First-year teachers with enough support and assistance are easier to have higher job satisfaction, higher teaching efficacy and are more likely to stay in the profession. Otherwise, they are likely to "sink" in the first teaching year (Smith & Ingersoll, 2004, p. 682).

Also, Shanghai has an extremely high teacher participation rate in TIP. Statistics show that all districts offer TIPs and principals reported that all their first-year teachers participated in TIPs in Shanghai (Zhang, 2014). However, few studies have discussed the helpfulness of the

current formalized TIPs in Shanghai, and few researchers have studied whether TIPs help with teacher retention.

Therefore, it is necessary to study the effectiveness of TIPs as perceived by Shanghai primary school teachers in terms of how helpful they find the TIPs. A study of the effectiveness how helpful are teachers in primary schools in Shanghai feeling the TIPs is necessary. Knowledge gained from this study may aid the government in reaching its goal while keeping funding to a reasonable level. The study may suggest how TIPs can be modified to better support first-year teachers and it may reveal gaps in the knowledge base that future research should address.

Research Questions

This study focuses on first-year teachers in Shanghai public primary schools. The research questions to be addressed in this study are both descriptive and correlational. Research questions four to six are used jointly to test for an indirect effect where teacher self-efficacy serves as a mediating variable between perceptions regarding the helpfulness of teacher induction programs and anticipated teacher retention. The identified paths (a, b, c, and c') are depicted in the model of the hypothesized mediation (see Figure 1).

Research Question 1 (RQ1): To what extent do teachers perceive TIPs to be helpful?

Research Question 2 (RQ2): To what extent do teachers feel efficacious regarding (a) student engagement, (b) instructional strategies, and (c) classroom management?

Research Question 3 (RQ3): To what extent do teachers' plans indicate an intent to remain in the public school teaching profession?

Research Question 4 (Path a): Is there an association between the helpfulness of teacher induction programs and teacher self-efficacy after controlling for gender, educational level, and major?

Research Question 5 (Path b): Is there an association between teacher self-efficacy and anticipated teacher retention after controlling for perceptions of TIP helpfulness, gender, educational level, and major?

Research Question 6 (Path c): Is there an association between the helpfulness of teacher induction programs and anticipated teacher retention after controlling for gender, educational level, and major?

Research Question 7: Is there an indirect effect of the helpfulness of teacher induction programs on anticipated teacher retention via teacher self-efficacy?

Teacher Self-efficacy

a   b

c'

The Helpfulness of Teacher   Anticipated First-year
Induction Programs   c   Teacher Retention

Figure 1: The Path Diagram of the Hypothesized Mediation

Conceptual Framework

The components of TIPs vary across schools and districts. Horn, Sterling, and Subhan (2002) identified that high-quality TIPs encompass four components: orientation, mentoring, professional development, and teacher evaluation. Their model is used as the conceptual framework of TIPs for the current study where first-year teachers' perceptions of the helpfulness of TIPs will be examined. In addition, associations between these perceptions of TIPs helpfulness, teacher self-efficacy, and anticipated teacher retention will be explored. Each component is listed and explained below.

Orientation. Horn et al. (2002) defined orientation as "intended to orient new teachers to the community, district, curriculum, and school" (p. 8). Orientations vary significantly from a

half-day to seven full working days, depending on the district schedule. The topics of

orientations include: welcoming new teachers, introducing the academic goals/learning and

learning philosophy of the districts, reviewing the policies, and addressing induction issues.

Mentoring. Mentoring is defined as "one in which the administration has a mentoring

program in place with specific guidelines, programs are funded, mentors are compensated in

some way, and there are specific expectations and policies regarding the mentoring process"

(Horn et al., 2002). Mentoring is regarded as a key element to help the first-year teachers'

transition from a university student learning to teach to a full-time teacher in the classroom

(Wallin & Boggan, 2015). Mentors are generally appointed by school administrators or

universities and participate in supervision (Lofstrom & Eisenschmidt, 2009).

Professional development. Horn et al. (2002) define professional development as

providing opportunities for the first-year teachers to achieve additional knowledge, skills, and

attitudes necessary for successful teaching. It is necessary for beginning teachers to continue the

professional role in a life-long teaching career. Professional development activities may address

a variety of topics, such as instructional strategies, back-to-school night, parent-teacher

conferences, research methodologies, and technology supports. Professional development can be

provided through workshops, seminars, conferences, observations, and collaborations.

Teacher evaluation. Analyzing new teachers' teaching practices periodically is

beneficial for mentors, administrators, and teachers. Through this analysis, they come to know

their strengths and weaknesses (Horn et al., 2002). Also, teacher evaluation determines whether

the first-year teachers are qualified to retain.

Delimitations

The survey data for this study will be collected from teachers who work in public primary schools (from the first grade to the fifth grade) in Shanghai, China. The study will be limited to full-time teachers, in their first year of teaching, who started formal teaching careers at the end of their first year of formal in-service teaching.

Definitions

The terms listed below will be used for the study:

First-year teachers. First-year/beginning teachers refer to teachers who are new to teaching.

Teacher self-efficacy. Teaching self-efficacy is a judgment of teacher capabilities to bring about desired outcomes of student engagement and learning, even among those students who may be difficult or unmotivated (Tschannen-Moran & Woolfolk Hoy, 2001).

Anticipated teacher retention. In this study, anticipated teacher retention refers to whether a teacher intends to stay in the profession as a teacher in the primary schools (Ding, 2011).

First-year teacher attrition. Teachers who have obtained one or more teaching roles in a primary school following graduation and have stopped teaching within 12 months of starting (Weldon, 2018). In this study, job attrition applies to cases where teachers change professions altogether as well as cases where they leave their teaching positions at public primary schools and go to work in private ones.

Teacher induction programs. Teacher Induction programs are "professional development programs and are designed to offer support, guidance, and orientation for beginning teachers during the transition into their first teaching job" (AIR, 2015). The goal of programs is to improve teacher quality and efficiency in classroom instruction and collaboration, which

eventually achieves its goal of raising the rate of new teacher retention (Smith & Ingersoll, 2004).

Direct effect. The term direct effect means "to quantify an influence that is not mediated by other variables in the model or, more accurately, the sensitivity of Y to changes in X while all other factors in the analysis are held fixed" (Pearl, 2005, p. 1572).

Mediation. Mediation means "the effects of stimuli on behavior are mediated by various transformation processes internal to the organism" (Baron & Kenny, 1986, p. 1176).

Indirect effect. "The amount of mediation is called the indirect effect" (Kenny, 2018).

Orientation. Horn et al. (2002) defined orientation as "intended to orient new teachers to the community, district, curriculum, and school" (p. 8).

Mentoring. Mentoring is defined as "one in which the administration has a mentoring program in place with specific guidelines, programs are funded, mentors are compensated in some way, and there are specific expectations and policies regarding the mentoring process" (Horn et al., 2002, p. 25).

Professional development. Horn et al. (2002) define professional development as providing opportunities for the first-year teachers to achieve additional knowledge, skills, and attitudes necessary for successful teaching.

Teacher evaluation. Analyzing first-year teachers' teaching practices periodically by teacher themselves, mentors, school administrators, district administrators, and the Shanghai Municipal Office of Teacher Education. It includes attending program activities, recording training manual, class observation evaluations, and teacher morality evaluation. As a part of TIP, evaluation is limited to the first-year teachers being evaluated. Through this analysis, they come to know their strengths and weaknesses (Horn et al., 2002).

Chapter Summary

This chapter introduced the idea that teacher induction programs can play a vital role in retaining first-year teachers. To achieve Shanghai's long-term education plan and goals, it is necessary for the government, administrators, and policymakers to explore first-year teachers' perspectives on induction programs and potential associations between such perspectives, teacher self-efficacy, and their intention to remain teaching in public primary schools. The research questions that guide the study were provided along with the delimitations and definitions. A more detailed review of the literature, along with an explanation of how teacher self-efficacy connects to the effectiveness of teacher induction programs and anticipated first-year teacher retention, is provided in the next chapter.

Chapter 2: Literature Review

This literature review includes three sections: retention and attrition of first-year teachers, teacher efficacy theory, and an introduction of Teacher Induction Programs (TIPs). The first section of this chapter discusses first-year teachers' attrition and the challenges they meet. The second section introduces literature on teacher efficacy theory, which was proposed by Bandura in 1977. The section covers the nature of teacher efficacy and its effects on teacher education. The last section of this chapter reviews TIPs in Shanghai, teachers' perception of the helpfulness of induction programs, and how TIPs influence the first-year teachers. In addition, the research gaps about how teacher efficacy has an indirect effect on the first-year teachers' perception of Shanghai teacher induction programs to teacher retention are explained.

First-year Teachers Retention and Attrition in Public Schools

First-year teachers are teachers who are new to teaching. The number of public school teachers is increasing in many countries and areas. In California, the number of public K-12 teachers has been increasing every year since 1985 (National Center for Education Statistics, 2015). In Shanghai, the number of public primary teachers has been increasing sharply since 2015. Compared to the number of teachers in 2010 (44,278 teachers), there were 51,481 and 52,321 teachers serving in Shanghai public primary schools in 2015 and 2016 (Shanghai Statistics Yearbook, 2017). The data indicate that more teachers are joining the profession.

Meanwhile, data also showed that some newly qualified teachers anticipate leaving or already left after the first year teaching. In the United States, researchers widely accepted a study result that forty to fifty percent of novice teachers (teaching experience from one to three years) quit within the first five years of teaching by analyzing federal data in 2003, which is a much higher rate than in any other occupation and it becomes a primary factor for the shortage of

teachers (DeAngelis & Presley, 2010; Ingersoll, 2004; Ingersoll, 2012; Ingersoll & Strong, 2011).

However, this first-year teacher retention rate approximation is critiqued by the U.S. Department

of Education's National Center for Educational Statistics because "the data included private

school teachers and excluded the 3% of teachers who left and returned to teach within the five-

year period" (Fensterwald, 2015). In the new U.S study, researchers used 2007-2008 federal

data from only public school teachers and calculated that ten percent of U.S. first-year teachers

in the public schools left the profession and did not return (Gray & Taie, 2015). Although the

data is changed, the first-year teacher attrition rate is concerned. In the United Kingdom, 12% of

newly qualified teachers are planning to leave their positions after their first year teaching and 43%

of teachers thought that teaching was not their life-long job (Bai, 2018; National Union of

Teachers [NUT], 2018). In China, a nation-wide survey discovered that first-year teachers

account for a major proportion of the 65% anticipated teacher attrition rate. In Shanghai, how to

retain new-qualified teachers and support their professional development is in the Shanghai

Government Plan (the period of 2016-2020).

Research indicated that high teacher attrition will lead to negative consequences. Two of

the negative consequences are financial crisis and low student achievement. The U.S.

government spent $1 billion on recruiting new teachers and $2.2 billion on replacing teachers in

2014 (Alliance for Excellent Education, 2005; Duncan, 2009). To renew teaching credentials

and support new teachers in their first two years, California's budget provided $66 million to

support over 12,000 beginning teachers in 1998 and $128 million to support 30,118 first-year

teachers in 2007-2008 (Report on New Teacher Induction, 2015). Similarly, the Shanghai

government has funded more teacher support in the current decade. According to the data from

the Shanghai Teacher Training Center, the funds for teacher professional development is

constantly increasing from 2,742.36 million yuan in 2015 to 3,851 million yuan in 2017, and to 7,772 million yuan in 2018 (Shanghai Teacher Training Center, 2015; 2016; 2017). If the attrition rate of first-year teachers is going to rise, the amount of funding will be wasted.

Generally, first-year teachers have high motivation for teaching and learning. As Brookhart and Freeman (1992) stated, "altruistic, service-oriented goals and other intrinsic motivations are the source of the primary reasons entering teacher candidates report why they chose teaching as a career" (p. 46). Also, researchers reported that beginning teachers have "a desire to work with children and adolescents," which stimulates their learning/teaching attitudes, expectations, and engagement in the first year (Löfström & Poom-Valickis; Watt & Richardson, 2008). However, first-year teachers do face various extrinsic challenges.

The challenges of first-year teachers in public schools. First, they are expected to build a professional teacher identity in a very short time. In other words, they need to transform from a student teacher to a teacher of students quickly. However, building and exploring teacher identity should be an ongoing process, developed over years of teaching experience and reflection, instead of a stable identity (Erikson, 1986; Moje, 1996). The procedure of this transformation includes a series of observations, imitations, explorations, reflections, and practices. In the process, teachers need to consistently explore and reflect on questions such as, "Who am I at this moment", "Who do I want to become", and "How and from where do teacher educators develop their understandings of what is means to do their work?" (Conway, 2001; Olsen & Buchanan, 2017). To answer these questions and develop a professional teacher identity in their first-year teaching is challenging and overwhelming (Beijaard, 1995; Zhang, 2014).

The second challenge is that first-year teachers are expected to skillfully apply teaching theories in real class practice; however, they are overwhelmed, most of time by the tasks of delivering instructions and managing class (Banville, 2015; McAnulty & Cuenca, 2014; Tsui, 2004). Moreover, Flores (2006) studied a group of beginning teachers in Europe and realized that they were struggling to achieve the expected performance -- "learning while doing", at school, so many beginning teachers switched from a student-centered classroom to traditional lecture (p. 2021).

The third challenge is that first-year teachers are expected to handle the same heavy teaching loads and responsibilities as experienced teachers (Banville, 2015). Renard (2003) argued that "schools often overwhelm new teachers by expecting them to juggle all the responsibilities and duties that veteran teachers do. Instead, we need to give new teachers to grow" (p. 62). Researchers suggested school and district administrators improve new teacher retention by adjusting their workloads in teacher induction programs such as avoiding to assign them to the most challenging grade level or students, avoiding to assign extra duties (i.e.: intervention, committee members, student council advisor), and assigning first-year teachers the same planning period with their mentors (Farrell, 2003; Renard, 2003). However, the reality is not ideal. According to Alliance for Excellent Education (2005), a Washington, DC-based national policy and advocacy organization, reported that, 60% of teachers transferred schools or left teaching because of too heavy a workload. In both England and Finland, new teachers experienced extensive national-level curriculum and assessment, which challenges them and becomes a main reason of turnover (Webb et al., 2004). Expecting new teachers to perform all responsibilities as experienced teachers is unrealistic (Allen, 2000). When first-year teachers meet these workloads as seasoned professionals, new teachers often fall into a feeling of

"demoralized and dispirited, anxious about their efficacy and their capability to cope" (Scott, 1995, p. 96). These experience and perceptions persuade them to leave the teaching profession (DeAngelis & Presley, 2010; Ingersoll, 2004; Ingersoll, 2012; Ingersoll & Strong, 2011).

The challenges of first-year teachers in Shanghai public schools. In addition to the above general first-year teachers' challenges, first-year teachers in Shanghai public primary schools have additional challenges. First, new-qualified teachers may not have enough training because teacher preparation programs are not mandatory in Shanghai public primary schools. Being a primary school teacher is only required to have a bachelor degree (four-year college/university degree) or a higher degree and a Shanghai teaching credential. Teachers in Shanghai public primary schools are all specialists rather than all-subject teachers in other countries. Based on their college majors, teachers can be categorized into three groups: general educations, core course majors (i.e., Chinese, Math, and English), and subsidiary course majors (i.e., science, arts, and physical education). For teachers who major in education, they experienced approximate 20 weeks a teacher preparation program/intern program in the four-year college setting so they are automatically issued the credential (Xia, 2018). However, for teachers whose majors were other than education (core course majors and subsidiary majors) and were willing to train into teaching, they did not experience any teaching practice but concentrated on all subject-based courses in their universities, they must take a teaching credential test (Xia, 2018). The credential test is a law and subject knowledge based written and oral test. It does not require class practice hours. Therefore, the latter group of first-year teachers may lack practice in classroom teaching when they are hired.

Second, first-year teachers are expected to build positive and stable relationships with colleagues, administrators, parents, and students (Ren, 2014). However, they always feel

powerless and isolated in the first years (Zhao, 2003). Cao and Zhou (2007) pointed out that dealing with student-teacher relationships is the greatest challenge first-year teachers meet. Knowing students well and having positive relationships with students are relative to course design, planning and organization, motivating students' interests, and delivering differentiated instructions. However, first-year teachers are not confident in building teacher-student relationships.

Third, Shanghai public school teachers are facing high competition and a workload. They are expected to show high student academic achievements via standardized exams and a series of government interventions than teachers in some other countries (Gao, 2008; Ministry of Education, 2010). To improve students' academic scores, they must bear heavy workloads -- their average working time is 9.16 hours per day without extra-time payment (Wu, 2018).

Considering by new qualified teachers' internal motivation and the external challenges they meet, first-year teachers are overwhelmed in dealing with these imbalances. If there is an imbalance, low job retention rate is one noticeable.

Teacher efficacy and job attrition. In addition to the challenges that first-year teachers meet, low teacher efficacy beliefs also contribute to teacher attrition (Borman & Dowling, 2008; Schaefer, Long, & Clandinin, 2012). Several studies show that teachers' sense of self-efficacy predicts low capabilities in dealing with the context of teaching and high attrition. Klassen and Chiu (2010) studied a sample of 1,430 practicing K-6 teachers and found that: (1) The higher teacher efficacy they have in classroom management and instructional strategies, the higher the job satisfaction teachers have, and (2) The more job-related stress (i.e.: classroom stress, workload stress) teachers have, the less teacher efficacy they hold. Babaei and Abednia (2016) studied 225 Iranian EFL teachers and found a significant, positive correlation between teacher

reflectiveness and teacher efficacy. Savas, Bozgeyik, and Eser (2014) studied 163 primary and secondary teachers and explored that teacher efficacy was significant, negatively associated with burnout levels. Yost (2006) discussed the potential cause-effect between teacher efficacy and their retention. He also pointed out that the opportunity of professional development is the key factor determining teacher efficacy. Canrinus, Helms-Lorenz, Beijaard, Buitink, and Hofman (2012) proved that teachers with greater classroom self-efficacy have a greater sense of their professional identity (i.e.: commitment, motivation, and job satisfaction), a finding from the data of 1,214 Dutch teachers as participants. In addition, the association between teacher efficacy and job burnout has been evident in Mainland China (Yu, Wang, Zhai, Dai, & Yang, 2015; Zhang & Schwarzer, 1995).

Teacher Efficacy Theory

Self-efficacy is explained as individuals' beliefs about their capabilities to perform a particular action successfully (Bandura, 1997). It means "can do" rather than "will do". In other words, self-efficacy is what humans believe they are capable of doing (Schunk, 2014). Self-efficacy should be distinguished from other similar constructs such as self-esteem and locus of control. Self-esteem is a judgment of self-worth. Locus of control is concerned with a belief that behaviors are largely guided by reinforcement such as rewards or punishments, and through these reinforcements, individuals come to hold beliefs about what causes their actions (Rotter, 1966). "A locus of control orientation is a belief about whether the outcomes of our actions are contingent on what we do (internal control orientation) or on events outside our personal control (external control orientation)" (Zimbardo, 1985, p. 275).

Bandura's (2006) study pointed out the following:

> Perceived efficacy plays a key role in human functioning because it affects behaviors not only directly, but by its impact on other determinants such as goals and aspirations,

outcome expectations, affective proclivities, and perceptions of impediments and opportunities in social environment. (p. 309)

In other words, efficacy beliefs influence human attitudes and anticipated actions. Attitudes include thinking through a problem erratically, strategically, optimistically, or pessimistically (Bandura, 2006). Anticipated actions could involve: whether human beings choose to pursue the challenging task, how long and how much effort people will put in, and how much stress and depression they can cope with when they meet difficulties. "Weak efficacy beliefs are easily negated by disconfirming exercises, whereas people who have a tenacious belief in their capabilities will persevere in their efforts despite innumerable difficulties and obstacles" (Bandura, 2006, p. 314). However, if a person has a strong sense of personal efficacy, he or she is more likely to successfully perform the chosen activity.

Based on Bandura's social cognitive theory and its effects on human behaviors, teacher efficacy is defined as "beliefs in one's capabilities to organize and execute the courses of action required to produce given attainments" (Bandura, 1997, p. 3). The definition has been accepted by researchers widely (Sandholtz & Ringstaff, 2014; Srivastava, Tiwari, & Srivastava, 2016; Uztosun, 2016;). Other researchers also provided alternative definitions of teacher efficacy. Tatar and Buldur (2013) defined teacher efficacy as "one's capabilities to organize and supervise the course of action needed for managing prospective situations" (p. 453). Tschannen-Moran and Hoy (2001) regarded teacher efficacy as a judgment of teacher capabilities "to bring about desired outcomes of student engagement and learning, even among those students who may be difficult or unmotivated" (p. 783). Skaalvik and Skaalvik (2007) emphasized teacher efficacy as teachers' beliefs about their ability to plan, organize, and deliver instructions to attain given educational goals. These definitions commonly underscored teacher efficacy as teachers' beliefs with correlations to teacher development and student outcomes.

In education, teacher self-efficacy affects student learning outcomes and teacher instructions. First, teacher efficacy impacts the extent to which they can positively influence students' performances and their learning outcomes, even though some students have challenges in learning (Ashton, 1984; Schunk, 2014). Liu, Meng and Zhang (2005) investigated 109 teachers and 3,066 students in primary schools in Mainland China (Beijing and Shanxi Province) and found that teacher efficacy is associated with student learning attitudes.

Second, teachers with high self-efficacy tend to have positive attitudes in teaching and goal setting, show high levels of planning, organization, and differentiated instructions, and create a positive instructional climate (Allinder, 1994; Cousins & Walker, 2000; Friedman & Kass, 2002; Fritz, Miller, Kreutzer, & macPhee, 1995; Tschannen-Moran & Hoy, 1998). Yin, Lee, Yin, and Zhang (2013) found that teacher efficacy has a mediator effect between colleagues' trust and teacher empowerment through surveying 1,646 teachers from six provinces primary and secondary schools in Mainland China. The research design of the study designates teachers' trust in colleagues as an independent variable, empowerment as a dependent variable, and teacher personal efficacy is the role of mediator. The research results revealed that: (1) Teachers' perception of trust in colleagues significantly affects their sense of school empowerment. (2) Controlling the impact of teacher efficacy on teacher empowerment, the study found that teacher efficacy significantly affects teacher empowerment in schools. (3) In the test of a mediation effect on teacher efficacy, it is a complete mediation effect of teacher efficacy on the association between teachers' trust in colleagues and teacher empowerment in schools. Therefore, teacher efficacy plays an important role in teacher development and retention.

Teacher efficacy measurement instruments. Teacher efficacy has been demonstrated as closely and powerfully related to educational outcomes such as students' achievement and

teachers' behaviors. Therefore, researchers such as Rotter's (1966), Bandura (1997; 2006), and Tschannen-Moran and Hoy's (1997; 2001) contributed their ideas and perspectives in the teacher efficacy scale development in the past several decades. According to Tschannen-Moran et al.'s (1997) research review, teacher efficacy measures can be reviewed based on two conceptual strands. The first conceptual strand is based on Rotter's social learning theory (1966). The idea of the theory is that teachers' perceptions of their abilities is vital. The theory claimed that "teacher efficacy as the extent to which teachers believed that they could control the reinforcement of their actions" (Tschannen-Moran & Hoy, 2001, p. 783). Based on this concept, teacher efficacy includes two items: external factors and internal factors. The external factors explore how environments impact students' motivations and outcomes, and the internal factors attempt to find out to what extent teachers are confident in their abilities to deal with difficulties and students with low-learning abilities in their daily teaching. Although the measure proved that teachers' sense of efficacy has a strong correlation to student performance and teacher behavior changes in the studies, the reliability and validity of the two-item scale has been critiqued. In addition, Rotter's social learning theory exclusively relied on theory of reinforcement and omitted other learning mechanisms such as how human beings learn spontaneously.

Bandura's (1977) social cognitive theory has been regarded as the second conceptual strand. The base of his theory is that human behaviors are impacted by the mutual interaction of three components: internal personal cognitive, external environmental factors, and behaviors. He claimed that, "Self-efficacy scales must be applied to activity domains and evaluate the multifaceted ways in which efficacy beliefs operate within the selected activity domain" (Bandura, 2006, p. 310). To respond to the other researchers, he created a new model and a new

measure of teacher efficacy. The model showed that teacher efficacy can be built through the cognitive process of four resources of efficacy information and then appropriate behaviors and decisions can be made. Four resources include: verbal persuasion, vicarious experience, physiological arousal, and mastery experiences. Behaviors include goal setting, efforts, and job retention. In the measure of teacher efficacy, Bandura involved components that are considerable and beneficial for raising internal reliability. It is a 30-item instrument with 7 subscales: Efficacy to influence decision making, to influence school resources, to enlist parental involvement, to create positive school climate, and to enlist community involvement, instructional efficacy, and disciplinary efficacy. A 9-point scale was used for each item, with anchors at 1-nothing, 3-very little, 5-some influence, 7-quite a bit, and 9-a great deal. However, there is no reliable and valid information on this teacher efficacy scale. Also, the factor structure and the correlations between the factors are questionable.

Based on Bandura's theory and his teacher efficacy measure items, Tschannen-Moran and Hoy improved the nature of the teacher efficacy model in 1998 and then developed teacher efficacy measures (a 36-item long-term scale and a 12-item short-term scale) in 2001 with higher reliability and validity. It was formerly called the Ohio State Teacher Sense of Efficacy Scale (OSTSES). In the cyclical nature of teacher efficacy beliefs, Tschannen-Moran and Hoy retained Bandura's (1977) theoretical framework and explained how the cognitive process working between perceiving sources of efficacy information and building teacher efficacy beliefs. The cognitive process shows that after teachers receive sources of efficacy information, they analyze the teaching tasks and their contexts, and assess their personal teaching competence, which are the essential processes to build teacher efficacy beliefs. To respond to this adopted theory, they reaffirmed that teacher self-efficacy is a judgment of teachers' capabilities to bring about desired

outcomes of students' engagement and learning, even among those students who may be difficult or unmotivated. The short-item scale (Table 1) generates 3 subscale scores: for instructional strategies (4 items), for classroom management (4 items), and efficacy for student engagement (4 items). Instructional strategy items reveal whether teachers believe they have capabilities on items such as providing a variety of assessment strategies, giving an alternative explanation or example when students are confused, asking good questions of students, and implementing alternative strategies in the classroom. Classroom management items explore teachers' beliefs on controlling students' disruptive behavior in the classroom, getting children to follow classroom rules, and establishing classroom management systems. Student engagement items aim to find out how much teachers do to motivate students to learn and do well in schoolwork. In the following experiments and assessments, the scale showed high reliability. The overall internal consistency of OSTSES was 0.90. For each teacher efficacy subscale, the reliabilities were: 0.86 for instruction, 0.86 for management, and 0.81 for engagement. Furthermore, it showed solid construct validity by evaluating the correlation of this measure and other existing measures of teacher efficacy. The detailed reliability and validity information are placed in Chapter 3. Overall, this teacher efficacy measurement transformed from concerning Behaviorism (i.e., Rotter's) to Cognitive Behavior Theory (Bandura's, and Tschannen-Moran et al.'s), which is widely accepted (Klassen, Bong, Usher, Chong, Huan, Wong, & Georgiou, 2009; Savas et al., 2014).

Table 1: Factors of Tschannen-Moran and Hoy's Short-term Teacher Efficacy Measure

Factor 1: Efficacy for instructional strategies	Items: 1. To what extent can you use a variety of assessment strategies? 2. To what extent can you provide an alternative explanation or example when students are confused? 3. To what extent can you craft good questions for your students? 4. How well can you implement alternative strategies in your classroom?
Factor 2: Efficacy for classroom management	1. How much can you do to control disruptive behavior in the classroom? 2. How much can you do to get children to follow classroom rules? 3. How much can you do to calm a student who is disruptive or noisy? 4. How well can you establish a classroom management system with each group of students?
Factor 3: Efficacy for student engagement	1. How much can you do to get students to believe they can do well in schoolwork? 2. How much can you do to help your students' value learning? 3. How much can you do to motivate students who show low interest in schoolwork? 4. How much can you assist families in helping their children do well in schools?

Adopted from Tschannen-Moran and Hoy's Short-term Teacher Efficacy Measure (2001). p. 800.

High teacher efficacy is essential in teacher development and retention. Further, researchers pointed out that another variable, the helpfulness of teacher induction programs, is vital in new qualified teachers' development and retention in their first teaching year (Allen, 2014; Huling, Resta, & Yeargain, 2012).

Teacher Induction Programs (TIPs)

Defined. The definitions of TIPs vary in different countries. "The term induction is used to describe the period when teachers have their first teaching experience and adjust to the roles and the responsibilities" (Niesen et al., 2007, p. 15). TIPs, which were also known as the Beginning Teacher Support and Association (BTSA) programs in the United States, were

learning to teach programs. They were also regarded as bridges that transform "student teachers to teach students" (Smith & Ingersoll, 2004, p. 683). TIPs are "pre-planned, structured, and short-term assistive programs offered in schools for beginning teachers" (Lawson, 1992, p. 163). In the United Kingdom, TIPs were called Teacher Induction Scheme (TIS). TIS preferences deal with a range of issues such as "the structure of their induction into teaching, the traits of their induction supporter, and their development needs… in their future support and development" (Rippon, 2006, p. 4). Shanghai Municipal Education Committee (2013) regards TIPs as the beginning of teachers' life-long career of professional development. Each definition arrives at a common understanding that beginning teachers should be offered support with qualified mentors in the beginning years to improve teacher quality and efficiency in classroom instruction and collaboration, which eventually achieves the goal of raising new teacher retention (Report on New Teacher Induction, 2015; Wong, et al, 2005).

Brief historical development of TIPs in western countries. The idea of TIPs, containing some recommendations for beginning teacher support, in the United States was published in 1963 in the Conant Report (Feiman-Nemser, Schwille, Carver, & Brian, 1999). Then, TIPs gained attention in the 1980s, flourishing in the early 1990s and declining in the late 1990s in the U.S (Niesen, Barry, & Addison, 2007; Weiss & Weiss, 1990). Research showed that Florida was the only state that had mandated an induction program prior to 1980 (Feiman-Nemser et al., 1999). In the past two decades, the number of induction programs has dramatically increased, including many Local Education Associations (LEA) and some universities (Report on New Teacher Induction, 2015). The number of program participant teachers is also consistently increasing. For example, the number of program participants has doubled from 1990 to 2000, from 41% to 79% (Ingersoll & Smith, 2004). From 2007 to 2008,

the percent of beginning teachers participating in induction programs reached 91% (Ingersoll, 2012). Despite the growing number of TIPs and participants, TIPs experienced three "waves" in history (prior to 1986; 1986-1989, 1990-1996) (Feiman-Nemser et al., 1999, p. 24).

TIS in the United Kingdom was proposed as a formal system of induction in 1965 in The Teaching Council Act, the first aim of which was to ensure no "uncertificated teachers" (Rippon & Martin, p.85). In 1971, the Teacher Training Inquiry Committee was established to increase the quality of teacher inductions; however, these plans were not implemented until 1977 because of the budget cuts after the worldwide financial crisis. The main components of TIS included adjusting beginning teachers' workload, providing professional development, and mentoring support. In the 1980s and 1990s, school-based mentoring programs were popular, and on-the-job-training was widely accepted; however, the differentiated school resources and the quality of school-based trainings were critiqued. In 1999, TIS was reformed, mandating that all new qualified teachers must complete a one-year induction program within the first five teaching years.

Historical development of TIPs in Shanghai. Compared to TIPs in the United States and other countries in Europe, which have longer histories in supporting first-year teachers, TIPs in Shanghai are relatively new. Shanghai TIPs have experienced two versions. The old version of TIPs was used prior to 2012 and the formalized one was implemented in 2012 (Chen & An, 2016). Shanghai TIPs were proposed in 1985, developed in 1999 by the Shanghai Education Commission, instituted in 2001, and reformed in 2012. As mentioned in Chapter 1, the initial aim of creating TIPs was to provide on-job-training for 67,000 unqualified teachers. The old-version inductions suggested that first-year teachers complete more than 120 hours of school-based training and mentoring in the first teaching year; however, the details about the content of

the programs, the extent of the trainings, and how to organize activities were blurred (Chen & An, 2016). Moreover, since the TIPs were varied between schools and districts, first-year teachers received trainings with different quality, which according to many researchers (Chen & An, 2016; Chen, 2003; Ji, et al, 2011). To balance the quality of differentiated TIPs, the Shanghai Education Commission declared a new induction program system in 2012 (Table 2). Compared to the old system, the new one involved more resources such as district trainings, base schools, and schools where the first-year teachers work. The content of TIPs was standardized. They covered four sections: professional identities and ethics, instructional strategies, classroom management and moral education, and research methodology and professional development. The features of TIPs changed from only school-based mentoring to multiple facets: orientation, mentoring, professional development, and teacher evaluations. In terms of teacher evaluation, the new system offered a teacher evaluation system, and then averages the scores from district, base schools, and the first-year teachers' schools. If teachers passed the program, they were given TIP certificates, which are partial requirement to renew their teaching credentials (Order No. 55, Shanghai Education Commission, 2013).

Table 2: Comparisons of Shanghai Formalized and Old Teacher Induction Program Systems

Variables	Formalized system (2012)	Old system (2001)
Organization and Management	Shanghai Education Commission proposed Teacher Induction Programs Commitment and Standards, designed the key program elements, and issued certificate. Districts organize and implement the program activities and evaluate teachers. Schools provide mentors, organize	School-based training

	classroom practice, and provide feedback to districts.	
Content	Orientations; Mentoring; The standardized professional development covers four sections: professional identities and ethics, instructional strategies, classroom management and moral education, and research methodology and career development; Teacher evaluations	No-standardized content The major content includes: knowing school resources/staff/students, class practices, classroom management, etc., which is dependent on school administrators.
Agencies	Districts; base schools that have strong teacher force and apply instructional strategies, in which the first-year teachers can visit and observe classes; and schools where the first-year teachers work	Districts and schools where the first-year teachers work
Trainers	For each first-year teacher, there is 1 subject mentor from base school and 1 mentor from school where the first-year teacher works.	Mentor from the schools where first-year teachers work
Implement	New teacher orientation Mentoring Professional development (such as class observation, instructional strategies competitions, planning, etc.), Teacher evaluations	Mentoring
Evaluation	Teacher self-evaluation; Base school and the school that hired the first-year teacher provide feedback and evaluations; The district provides an overall evaluation and feedback. Shanghai Education Commission Office issues certificate if qualified.	There was no standards or requirements for evaluations. First-year teachers are evaluated by school administers and mentors.
Strategies and result	Formative assessments. Summative assessments rely on the data from formative assessment. If passed, offer certificate and renew teaching credential.	

Adopted from Chen and An's (2016) Comparisons of Shanghai Formalized and Old Teacher Induction Program Systems.

Based on the data, school administrators reported that all the newly qualified first-year teachers have access to TIPs in local schools or districts and 97% of teachers with less than 3 years of teaching experience reported they completed TIPs in their first teaching year (Zhang, Ding, & Xu, 2016).

Key components in TIPs. Many research studies discussed the various components of TIPs that are useful in supporting first-year teachers. TIPs included seminars and workshops, mentoring, collaboration sessions with colleagues and administrators, program evaluation and teacher evaluations (Clark, 2011; Gaikhorst et al., 2015; Hope, 1999; Ingersoll & Smith, 2004 & 2012). Kimbrel (2005) identified that the factors of teacher induction activities were mentoring, new qualified teacher in-service activities, class observations, providing curriculum guides, instructional materials/resources support, on-going new teacher meetings, and collaborations between colleagues. Meristo and Eisenschmidt (2012) generalized that the content of TIPs includes supporting activities for beginning teachers, mentoring and analysis, and implementation. Banville (2015) focused on learning the teaching context, designing a responsive instructional program, creating a classroom learning community, enacting a beginning repertoire, and developing their professional identity. Lofstrom and Eisenschmidt (2009) pointed out that TIPs should integrate general studies such as cultural and social competencies, specialty studies such as combining human beings with the surrounding community, and pedagogical strategies. Horn et al.'s (2002) model was a comprehensive way to synthesize high-quality TIPs and served as the basis of evaluation. Also, the components in Shanghai TIPs highly match the Horn et al. (2002) model. The four components were orientation, mentoring, professional development, and teacher evaluations.

Orientation. Orientation is an essential part of introducing new teachers to the community, district, curriculum, and school before the school year begins (Horn et al., 2002). The orientations in Shanghai TIPs are in summer (5 days) before the new school year. The content of district orientation include introducing educational policies and laws, professional career development, and morals (Shanghai Educational Municipal Commission, 2017). The content of school orientation includes meeting the on-site administers, teachers and staff members, declaring mentors and mentees, and discussing the current educational issues and tasks (Ren, 2016).

Mentoring. Horn et al.'s (2002) research defined mentoring as "one in which the administration has a mentoring program in place with specific guidelines, programs are funded, mentors are compensated in some way, and there are specific expectations and policies regarding the mentoring process" (p. 24). Mentors are generally appointed by school administrators or universities and have participated in supervision (Lofstrom & Eisenschmidt, 2009). In Shanghai TIPs, mentors are experienced teachers, selected by on-site school principals, providing first-year teachers "new apprentices with guidance on course preparation, coursework evaluation, organization of student activities and so on" (Zhang et al., 2016, p. 14).

Mentors play roles as buddies, trainers, listeners, and supervisors to support beginning teachers who are new to the school, the grades, and the subjects (Ingersoll, 2011; Nielsen, Barry & Addison, 2007). The top three mentoring areas that beginning teachers identified included: instructional coaching, differentiated support, and classroom management coaching (Bradley-Levine & Mosier, 2016). Clark and Byrnes (2012) also addressed that beginning teachers expect that their mentors are good listeners, encouraging them during times of self-doubt, and providing mentor-modeled professional behaviors. Therefore, mentors are required to have not only high

teaching capability and professional knowledge, but also skills in motivation, listening, and

reflection (Harrison et al., 2006; Main, 2016).

In Shanghai TIPs, the role of mentors is more as an instructional coach, handing over his

or her experience to the first-year teachers (Chen & An, 2016; Shanghai Municipal Education

Committee, 2012). According to Shanghai TIP Handbook (Edited in 2017), mentors have the

following rights and duties.

Mentor's rights are as follows:

(1) To ensure the normal handling of mentoring affairs by mentors who the district
grants stipends monthly.

(2) To encourage mentors to provide directions and critiques to mentees on their
instructional strategies, teacher identity, and mental status.

(3) To provide opinions on determining whether or not the mentee passes the program.

(4) By the means of consultation, to achieve an agreement on goals with signatures of
participants.

Mentor's duties included:

(1) Following Shanghai Formalized Teacher Induction Programs Content and Request, a
mentor has to follow new teachers' professional growth in the school year in the four
sections of professional identities and ethics, instructional strategies, classroom
management and moral education, and research methodology and career development.

(2) A mentor has to implement and record mentoring activities (including objectives,
procedures, and evaluations).

(3) A mentor has to support a mentee on understanding curriculum and standards, writing
lesson plans, providing a feedback and suggestions on instructional strategies and
class management, observing classes and offering feedback, and doing formative
evaluations periodically.

(4) A mentor has to follow, implement, and fill in Shanghai TIP Handbook.

(5) A mentor should accept supervisions to the school, the district, and Shanghai
Educational Commission. Mentor should participant mentor-mentee collaborations.

   Professional development. Horn et al. (2002) define professional development as providing opportunities for the first-year teachers to achieve additional knowledge, skills, and attitudes necessary for successful teaching. In Shanghai TIPs, first-year teachers spend two days in on-site schools with mentors and the other three days on professional development: (1) a half-day per week district-level professional development activity, and (2) 2.5 days per week of professional development at the base school (Chen & An, 2016).

   The professional development activities could be workshops/seminars with experts and professors from the local universities (Shanghai Normal University and China Eastern Normal University), case studies, peer observations, group discussions, and first-year teacher collaborations. The topics of professional development cover four sections: Teacher identities and ethics, instructional strategies and class practice, class management and moral education, and research techniques (Shanghai Municipal Education Committee, 2017). The detailed tasks are shown below (Table 3).

Table 3: Professional development in Shanghai TIPs

Topics	Tasks	Activities
Teacher identities and ethics	1. Make individual learning plan 2. Read books about teacher identities and ethics and write a study note. 3. Complete six teaching sketches and reflections. 4. Write a TIP summary.	Workshops/seminars with experts and professors; case studies; peer observations; group discussions; Mini-talks, and first-year teacher collaborations; mentors-mentees collaborations.
Instruction strategies and class practice	5. Study curriculum and standards and prepare a presentation. 6. Learn differentiated instructional strategies, learn class technology, and evaluate planning-delivering-assessment, etc.	
Class management and moral education	7. Organize a class committee meeting class meeting. Have a parent conversation. 8. Organize a class theme meeting 9. Build teacher-student relationship, and parent-teacher communications.	
Research techniques	10. Discuss current issues in education and class practice, make research plan, and investigation.	

Teacher evaluations. Horn et al. (2002) thought the purpose of teacher evaluations is to

know first-year teachers' strengths and weaknesses via teacher themselves, mentors, school

administrators, and districts. Moreover, Shanghai TIP evaluations are regarded as an essential

path determining whether they are able to stay in the profession. Ren (2014) also discussed that

the reasons for teacher evaluations are: (1) evaluating the implementation of the program, and (2)

evaluating teachers' achievements. In Shanghai TIPs, first-year teachers are evaluated by

teacher themselves, their mentors (in base school and on-site school), administrators (in base

school and on-site school), and the districts through program activities, attendance and level of

completion of the extent program they completed. The detailed evaluation forms are attached below (Table 4). In the attached evaluation form, first-year teacher fills in background information and summarizes the one-year TIP experience (approximately 1,500 words). The base school mentor (subject mentor) writes comments and gives scores according to the scoring criteria. If the first-year teacher also works as a classroom teacher, the classroom teacher mentor also needs to provide comments. Just like the same as base school mentor(s), an on-site school mentor should provide comments and give an overall evaluation. Once new teachers and mentors complete the forms, the district will determine whether the first-year teacher completed TIP in the level of "Exemplary", "Fair", "At Standard", or "Below Standard".

According to the TIP handbook, first-year teachers are required to attend all of the TIP activities. If participants completed the TIP with the overall evaluations above ("Exemplary" and "Fair") or at standards, they are qualified to receive a certificate that is used for teaching credential renewal. Qualified teachers could apply the master of education programs in Shanghai Normal University or China Eastern Normal University. The percent needed for "Exemplary" is 20% or lower. If participants miss more than 72 periods, which is 10% of the training time (including sick leave, emergency leave, and other leave of absence) or did not achieve evaluation standards, they are not qualified to receive a certificate. They will no longer be able to continue teaching in Shanghai public schools without this certificate. In some rural area schools where lack teachers, they may be allowed to apply one more TIP training year as an option. Samples of forms in the TIP processes are provided in the following Table 4.

Table 4: Shanghai TIP Evaluation Forms

1. Mentee Background Information

First and Last Name		Gender		Birthday		Photo (2 inches)
Teaching School		School Address		Phone		
				Zip code		
Base School		School Address		Phone		
				Zip code		
Home Address		Cell phone		Zip code		
		Email				
Graduated University		Major		Degree		

Working Experience	Timeline	Employer	Title/Position

2. New Teacher Summary (Approximately 1500 words). You may attach a doc if needed.

3. Base School Comments (Applied by mentors).

Subject Mentor Comments					
Grade and Classe		Subject		Class periods per week (average)	
Signature: _____ Date: _____					
Class Teacher Mentor Comments (Applied if the first-year teacher is also assigned as a class teacher)					
Grade and Classe			Class periods per week (average)		
Signature: _____ Date: _____					

4. Base School Comments and Evaluations (Applied by Base School Administrator).

	Category	Scoring Criteria				Score
		Exemplary	Fair	At Standard	Below Standard	
1	Professional identities and ethics	18-20	15-18 (Not included 18)	12-15	Below 12	
2	Instructional strategies	18-20	22.5-26 (Not included 27)	18-22.5 (Not included 22.5)	Below 18	
3	Classroom management and moral education	18-20	22.5-26 (Not included 27)	18-22.5 (Not included 22.5)	Below 18	
4	Research methodology and career development	18-20	15-18 (Not included 18)	12-15	Below 12	
	Total points	90-100	75-90 (Not included 90)	60-75 (Not included 75)	Below 60	
Overall evaluation and other comments		Overall evaluation: _____ Base School administrator (Signature): _____ School stamp: Date: _____				

5. On-site School Comments (Applied by On-site Mentor/Administrator).

On-site School Comments					
Grade and Class		Subject		Class periods per week (average)	
Classroom Teacher Or Not			Other assignments		
Comment					

Overall evaluation: _____
On-site School mentor/administrator (Signature): _____
School stamp:

Date: _____

6. District Verification

District Verification

Overall evaluation: _____
Signature: _____
Stamp:

Date: _____

The effects of TIPs. Ingersoll (2011) demonstrated that providing a package of teacher support (such as TIPs) is more powerful than only one component (such as mentoring programs). Researchers have discussed the relationships between the TIPs and teacher retention, professional development, and student outcomes. Many researchers proved that TIP participants developed skills and capabilities in positions and had higher retention rates than non-participants. Huling and colleagues (2012) compared the retention rates of 954 beginning teachers in Texas and concluded that "Participants in the induction program have higher retention rates than other teachers from across the state and within their same regions of the states" (Huling et al., 2012, p.142). Allen (2014) examined the effect of supporting novices during the university-based induction years on teacher development and teacher retention through both quantitative and qualitative methodologies. The results of the study showed that induction programs positively affect maintaining professional networks, teacher efficacy, curriculum writing, and high teacher retention (Allen, 2014). Nielsen and his colleagues (2007) researched 826 new teachers across three years and discovered that the TIP has a positive impact on teacher development, and that individual resources training and collaboration with teacher networks were the two most beneficial elements for novice teachers' growth.

However, this positive relationship is also being challenged. Williams and Gillhan (2016) generalized that the first-year teachers not only have positive perceptions of induction programs such as having favorably assessed mentors, interdisciplinary teams, and administrative support in the programs, but also have mixed and negative experiences. Mixed experience means that program participants favored induction program activities but did not receive enough support from administrators. Negative experience illustrates that participants received insufficient support and overwhelming workloads. Moreover, Gaikhorst and colleagues (2015) argued that

there is no association between induction programs and job motivation or teacher retention although the programs have a positive impact on teacher competence and self-efficacy (Gaikhorst, Beishuizen, Zijlstra, & Volman, 2015).

Gaps in the Literature

Although the relationships between the effectiveness of induction programs, teachers' growth and their anticipated retention have been discussed, some deep questions are raised, such as: how are these components correlated? Is there a mediator between these components? Saffold (2005) writes, "The perception that one's teaching has been successful increases efficacy beliefs, thus raising expectations that future teaching performances will be successful. In contrast, failure, especially if it occurs early in the learning experience, undermines one's sense of efficacy" (p. 1). Moreover, Shearn (2007) identified the effectiveness of induction programs as "the most influential predictor of sense of efficacy" through the study and rich description of the sample of 225 first-year teachers (p. V). Other researchers also demonstrated that the helpfulness of induction programs raise teacher efficacy beliefs (Alia et al., 2017; Allen, 2014; Dangler, 2007; Lemon & Garvis, 2017). However, there are researchers who have critiqued the positive relationship between these two variables and indicated that there is no relationship between the types of induction program and teacher efficacy (Crain, 2000; Lowrey, 2012). In addition, there is no empirical study that examines the helpfulness of these components associated with teacher self-efficacy and/or first-year teacher retention.

Chapter Summary

Teachers' efficacy can determine teacher development over the course of teachers' lives. In this chapter, the author explained teacher efficacy as a mediator in this study, and how it connects to the effectiveness of teacher induction programs and teacher anticipated retention.

The author reviewed the challenges and situations that Shanghai primary school teachers meet, identifying the research gaps as: (1) the need for empirical studies to explore the effectiveness of the first-year teachers in induction programs, (2) the need for research about teacher anticipated retention in Shanghai primary schools, and (3) the need for empirical studies to examine the potential role of teacher efficacy in the helpfulness of teacher induction programs and teacher anticipated retention in the context of Shanghai primary schools.

Chapter 3: Methodology

The purpose of the study was to: (a) determine to what extent the formalized teacher induction programs (TIPs) in Shanghai are perceived to be helpful for first-year public primary school teachers; (b) measure teacher self-efficacy and anticipated job retention of first-year teachers in Shanghai public primary schools; and (c) examine the degree to which these perceptions of helpfulness, teacher self-efficacy, and anticipated job retention are associated. While focusing on first-year teachers in Shanghai public primary schools, the research questions addressed were both descriptive and correlational. The seven research questions are listed below along with four hypotheses.

Research Question 1 (RQ1): To what extent do teachers perceive TIPs to be helpful?

Research Question 2 (RQ2): To what extent do teachers feel efficacious regarding (a) student engagement, (b) instructional strategies, and (c) classroom management?

Research Question 3 (RQ3): To what extent do teachers' plans indicate an intent to remain in the public school teaching profession?

Research Question 4 (Path a): Is there an association between the helpfulness of teacher induction programs and teacher self-efficacy after controlling for gender, educational level, and major?

Research Question 5 (Path b): Is there an association between teacher self-efficacy and anticipated teacher retention after controlling for perceptions of TIP helpfulness, gender, educational level, and major?

Research Question 6 (Path c): Is there an association between the helpfulness of teacher induction programs and anticipated teacher retention after controlling for gender, educational level, and major?

Research Question 7: Is there an indirect effect of the helpfulness of teacher induction programs on anticipated teacher retention via teacher self-efficacy?

Hypothesis 1 (H1): The extent to which the TIP is perceived to be helpful is positively associated with the level of teacher self-efficacy.

Hypothesis 2 (H2): The level of teacher self-efficacy is positively associated with the level of anticipated teacher retention.

Hypothesis 3 (H3): The extent to which teacher induction program is perceived to be helpful is positively associated with the level of teacher anticipated retention.

Hypothesis 4 (H4): Teacher self-efficacy mediates the association between the extent to which the TIP is perceived to be helpful and anticipated teacher retention among first-year teachers.

Research Design

The study employed a non-experimental, correlational design and used survey responses from teachers to address the research questions. The teachers provided information about their backgrounds, perceptions of how helpful they found the TIPs to be, their sense of teaching efficacy, and plans regarding remaining in teaching. The study, therefore, did not involve longitudinal data collection although that would more easily lend itself to causal inferences. Recognizing that interpretation must proceed cautiously, the logic of the study, nevertheless, is that the teachers' responses having to do with prior, current, and future events allow exploration of the possible impact TIP components may have on teacher retention (see Figure 2).

Prior Experiences / Backgrounds of First-year teachers in Shanghai public primary schools
(Gender, majors, education level)

↓

Perceptions of the Helpfulness of Teacher Induction Programs
(Orientations, mentoring, professional development, and teacher evaluation)

↓

Teacher Self-efficacy
(for instructional strategies, classroom management, student engagement)

↓

Anticipated First-year Teacher Retention

Figure 2: Research design framework

Teachers' ratings of the helpfulness of TIPs can be thought of as the influence (or independent variable), the level of teacher self-efficacy as the mediator, and teachers' plans regarding remaining in teaching (anticipated teacher retention) as the outcome (or dependent variable). The path diagram of the hypothesized mediation is shown in Figure 3 below.
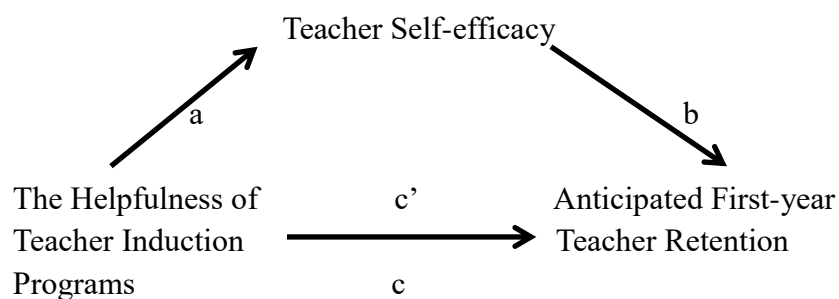
Figure 3: The Path Diagram of the Hypothesized Mediation

Population and Samples

The target population was first-year teachers in Shanghai public primary schools. With 16 districts in Shanghai, the population of public primary teachers was 52,321. Although the percentage of teachers from this target population who were in their first teaching year was not available, Wu (2018) reported that the percentage of novice teachers (with at most three years of teaching experience) is 18%. Thus, it is estimated that there were at least 3,000 teachers meeting the desired criteria.

The selection criteria was that participants had a bachelor's degree or higher along with a teaching credential and that they were within their first year of teaching in a public primary school located in Shanghai. Focusing on these teachers was warranted given that the need for qualified teachers in primary public schools is growing fast in Shanghai. According to the

Shanghai Statistics Yearbook (2016), the public primary teacher population grew from 4.52

million in 2010 to 5.23 million in 2015. Also, first year teachers were chosen because teachers

can participate in a TIP during their first year of teaching, and they would therefore be able to

offer their perspectives regarding the helpfulness of TIPs. A TIP is the main path for beginning

teachers' surviving and contributes to teacher retention (Zhang et al., 2016).

A convenience sample is defined as "a group subject is selected on the basis of being

accessible or expedient" (McMillan & Schumacher, 2010, p. 137). Due to practical constraints,

this sampling method was employed. As explained by McMillan and Schumacher, although

generalization is more limited, the findings will still be useful when considering teachers like

those studied. Thus, care was taken to gather demographic background information from the

respondents to ensure a careful description of the participants.

To determine how many teachers to invite to participate in the study, the following was

considered. After dummy coding the control variables (gender, education level, major), there

would be five predictors plus the two main variables (the helpfulness of teacher induction

programs and teacher self-efficacy) for a total of seven predictors in the most complex model

being tested. The software G*Power 3.1.9.3 was utilized by specifying the alpha level to be .05,

the desired power to be .80, and one predictor tested for the increase in R squared estimate.

Assuming the effect size was small, the needed sample size would be 395. Assuming a 70%

response rate, at least 564 teachers needed to be recruited for the study.   If the effect was larger

or the response rate was higher, the statistical analyses would achieve a power even higher

than .80.

Instrumentation

The data for this non-experimental study was collected through a web-based survey (Survey Monkey). The contents of the survey included four sections: (a) demographic information (i.e., gender, education level, and majors); (b) the perceptions of helpfulness of TIP scale (on orientation, mentoring, professional development, and teacher evaluations); (c) the teacher self-efficacy scale (for student engagement, for instructional strategies, and for classroom management); and (d) anticipated first-year teacher retention.

In this study, three instruments were applied for data collection and analyses addressing the research questions. A summary of these instruments, the scales they generated, the response options provided, and score meanings are provided in Table 5 below. The instrument for measuring teacher self-efficacy was the short-form of the Teacher Sense of Efficacy Scale developed by Tschannen-Moran and Woolfolk Hoy (2001). The instruments measuring teachers' perceptions regarding the helpfulness of TIPs and teacher anticipated retention were developed by the author.

Table 5: Summary of Instruments, Scales, and Score Meanings

Instruments	Scales	Response Options	Score Meanings
The Helpfulness of Formalized Teacher Induction Programs Scale (researcher-developed)	Components: Orientation, Mentoring, Professional Development, and Evaluation; Overall Helpfulness of TIP	A 5-point scale is used for each item, with anchors at 0-not at all, 1-of little help, 2-somewhat helpful, 3-helpful, and 4-very helpful	Calculate overall mean, standard deviation, minimum, and maximum. The possible total scores range from 0 to 12 overall and 0 to 4 for each component rated. The higher the score is, the more helpful teachers perceive TIPs.
Teacher Sense of Efficacy Scale- Short Form (TSES-SF; developed by Tschannen-Moran & Woolfolk Hoy)	Overall TSES scores (based on 12 items); Three subscales: Efficacy for student engagement (4 items), Efficacy for instructional strategies (4 items), and Efficacy for classroom management (4 items).	A 9-point scale is used for each item, with anchors at 1-nothing, 3-very little, 5-some influence, 7-quite a bit, and 9-a great deal.	Calculate overall mean, standard deviation, minimum, and maximum. The possible total scores range from 12 to 108 overall and 4 to 36 for each subscale. The higher the score is, the higher teachers' sense of efficacy.
Teacher Anticipated Retention Scale (researcher-developed)	An overall score based on responses to five items (two reflect plans to remain in public primary schools; three reflect plans to change to a private setting or different profession).	A 5-point scale was used for each item, with anchors at 1-strongly disagree, 2-disagree, 3-undecided, 4-agree, and 5-strongly agree.	Calculate overall mean, standard deviation, minimum, and maximum. After reverse scoring, the possible total scores range from 5 to 25. The higher the total is, the more the first-year teacher is planning to remain a public primary school teacher.

Teacher Sense of Efficacy Scale. The Teacher Sense of Efficacy Scale (Tschannen-Moran & Woolfolk Hoy, 2001) is designed to measure how much teachers believe they have capabilities to bring about expected student outcomes. A shorter 12-item form was developed and later translated into Mandarin by Hsin-Chieh Wu, a student of Woolfolk Hoy. Permission to use the Teachers' Sense of Efficacy Scale and the Mandarin-version of it are provided in the appendix. The Teachers' Sense of Efficacy Scale generates 3 subscale scores: efficacy for instructional strategies (item 5, item 9, item 10, and item 12), efficacy for classroom management (item 1, item 3, item 6, and item 8), and efficacy for student engagement (item 2, item 4, item 7, and item 11). Efficacy for instructional strategies tests whether teachers believe they are able to provide a variety of assessment strategies, give an alternative explanation or example when students are confused, ask good questions of students, and implement alternative strategies in the classroom. Efficacy for classroom management explores teachers' beliefs about being able to control students' disruptive behavior in the classroom, getting children to follow classroom rules, and establishing a classroom management system. Efficacy for student engagement concerns teachers' beliefs in their ability to motivate students to learn and do well in school. The scale uses a 9-point response option for each item, with anchors at 1-noting, 3-very little, 5-some influence, 7-quite a bit, and 9-a great deal.

The internal consistency reliability of the 12-item English version was reported in Tschannen-Moran and Woolfolk Hoy (2001). The overall reliability for this 12-item scale was 0.90. Reliabilities for the teacher self-efficacy subscales were 0.86 for instructional strategies, 0.86 for classroom management, and 0.81 for class engagement. The reliability and validity information for the version translated into Mandarin is not available from its author.

Tschannen-Moran and Woolfolk Hoy (2001) examined the construct validity of the scale

by assessing the correlations between the three subscales. The total scores of the subscales are positively correlated, from 0.79 to 0.85. Also, they examined the correlation of this scale with other existing measures such as items used by the RAND corporation, and Gibson and Dembo's general teacher efficacy (GTE) and personal teacher efficacy (PTE) subscales. The total TSES score is positively related to the RAND items ($r = 0.52$, $p < 0.01$) as well as to the PTE factor of the Gibson and Dembo measure ($r = 0.61$, $p < 0.01$).

The Helpfulness of Formalized Teacher Induction Programs Scale. This scale is based on the conceptual framework of high-quality induction programs offered by Horn, Sterling, and Subhan (2002). The scale aimed to assess how helpful the first-year teachers perceive the TIP was overall, as well as each of the components (orientation, mentoring, professional development, and evaluation). The items were translated from English to Mandarin by one person, and back-translated to English by a separate individual. The scale used a 5-point response option for each item, with anchors at 0-not at all, 1-of little help, 2-somewhat helpful, 3- helpful, and 4-very helpful. Higher scores corresponded to perceptions of the TIP being more helpful. Reliability and validity would be investigated using the dissertation data itself and are reported in the results chapter. Prior to its use in the dissertation study, the survey would be piloted with a handful of teachers who participated in a TIP in Shanghai in recent years. Definitions of four TIP components were included in the survey as adjustments.

Anticipated Teacher Retention Scale. The teacher retention scale was developed to assess the extent to which teachers have considered various career options: (1) staying in the same teaching position, (2) relocating to a different public primary school, (3) relocating to a private school, (4) relocating to a private institution other than private schools, and (5) changing to a different profession. The items were translated from English to Mandarin by one person,

and back-translated to English by a separate individual. The scale used a 5-point response option

for each item, with anchors at 1-strongly disagree, 2-disagree, 3-undecided, 4-agree, and 5-

strongly agree. After reversing scoring items 3, 4, and 5, the higher the score was, the more

likely the first-year teacher plans to remain a public Shanghai primary school teacher.

Reliability and validity would be investigated using the dissertation data itself and are reported in

the results chapter. This scale would also be piloted along with the helpfulness scale, as

described above.

      Demographic background questionnaire. In addition to the three scales explained

above, the survey included a demographic background questionnaire section. Questions such as

the participant's age, gender, education level, major, subject, salary, and workload were asked.

The data were used in describing the participants and some of this information served as control

variables in the main analysis. Detailed items are offered in the appendix.

      Control variables. This study applied three control variables: gender, college major, and

degree level. Research studies demonstrated the influences of gender, major, and degree level on

teacher efficacy and anticipated retention (Ding, 2010; Klassen et al., 2009; Klassen & Chiu,

2010a; Klassen & Chiu, 2010b; Struyven &Vanthournout, 2014; Wu, 2018; Zhen, 2004).

Female teachers reported having higher levels of teacher efficacy than male teachers (Klassen et

al., 2009; Klassen & Chiu, 2010a). Ding (2010) and Zhen (2004) also found similar results when

measuring teacher self-efficacy in Mainland China. Moreover, research studies revealed that

female teachers are more likely to stay in teaching positions than male teachers (Ding, 2010;

Struyven &Vanthournout, 2014). The developers of the Teacher Self-efficacy itself (Tschannen-

Moran & Woolfolk Hoy, 2001) included major and degree level in their analysis. Ding (2010)

and Wu (2018) also used both variables in exploring teacher self-efficacy, teacher professional

development, job satisfaction, and anticipated job retention in Mainland China and Shanghai, respectively.

Not all categories were considered individually for each of the control variables. For example, there are two gender categories (male and female) so that gender was one dummy variable (e.g., females coded "1" and males coded "0"). There were two degree level categories (bachelor's and above bachelor's) so that "Graduate" (master's and doctorate) were coded for "1" and "0" for bachelor's. Also, majors were collapsed into two categories: education majors were coded as "0" and non-education major (Chinese, English, mathematics, science, music, arts, and others) were coded as "1".

Data Collection Procedure

Approval by the Institutional Review Board (IRB) at the University of the Pacific was gained before collecting data. The IRB-approved Informed Consent Form (Appendix C) is attached in the appendix. The informed consent includes a brief introduction to the study's purpose, the length of time required to complete the survey, possible risks and benefits, the researcher's contact information, etc. It also clarifies to the potential respondent that the survey is voluntary and anonymous. SurveyMonkey (www. surveymonkey.com) was used to deliver the survey.

The data were collected in the middle-March, which was when about two-thirds of the school year was completed. Using existing connections the author had various educators in Shanghai, an initial group of first-year teachers who met the criteria were located and informed about the study. Participants were provided the survey link and advised through WeChat. Those expressing interest in the study and able to help recruit participants further assisted the author in what is referred to as "snowball sampling." Once the participants opened the survey link, they

saw the informed consent letter. Participants were asked to take a screen shot of the letter for

their records before responding to the survey. If they agreed and then pressed "next", they would

start the survey. Participants were asked three questions for the researcher to determine whether

they met the selection criteria corresponding to the target population. The questions were, "Are

you a first-year teacher in a Shanghai public primary school?", "Do you have a bachelor's

degree?", and "Do you have a Shanghai teaching credential?" If their answers were all "yes",

they would start the actual survey. If not, the survey would branch to a page that thanked them

for their interest and time and explained that the study is designed to focus on first-year teachers

in Shanghai public primary schools who hold bachelor's degrees and a Shanghai teaching

credential. Completing and submitting the online survey electronically constituted their consent

to participate. As explained on the introductory page, regardless of whether the teachers

answered all items on the survey, after pressing submit, teachers were provided a link to a

separate survey where they could enter their email address for a chance to win a $10 Starbucks

gift card (the value of $10 is equivalent to 70RMB in China).

Data Analysis and Presentation

Descriptive analyses provided information as to teachers' perceptions of TIP helpfulness,

their level of teacher efficacy and their plans regarding remaining in the teaching profession.

The study also used correlational analysis methods to identify whether perceptions of helpfulness

of TIPs were associated with the sense of teacher efficacy and first-year teachers' anticipated

retention in Shanghai public primary schools. The direct effects of the perception of TIP

helpfulness on teacher efficacy and anticipated teacher retention were evaluated. The term direct

effect means "to quantify an influence that is not mediated by other variables in the model or,

more accurately, the sensitivity of Y to changes in X while all other factors in the analysis are

held fixed" (Pearl, 2005, p. 1572). The indirect effect in this study was the perception of TIP

helpfulness on anticipated teacher retention through teacher efficacy. Indirect effect refers to the

amount of mediation (Kenny, 2018). In this study, simultaneous regression was applied to

determine the extent of the influence of the perception of helpfulness of Shanghai formalized

TIPs on the sense of teacher efficacy and first-year teachers' anticipated retention.

"Simultaneous regression estimates the direction effects of each independent variable on the

dependent variable" (Keith, 2015, p. 80). In this study, the dependent variables were the sense of

teacher efficacy and first-year teachers' anticipated retention, the independent variable was the

perception of helpfulness of TIP, and the predicted mediator was teacher efficacy. To test the

role of mediation, the study followed Baron and Kenny's (1986) approach. Mediation means

"the effects of stimuli on behavior are mediated by various transformation processes internal to

the organism" (Baron & Kenny, 1986, p. 1176). The data analyses addressed the research

questions and hypotheses. SPSS 25.0 was used to analyze the collected data using an alpha level

of .05 for identifying statistically significant results.

To answer RQ1, descriptive statistics (mean, standard deviation, minimum rating, and

maximum rating) were reported for the first-year teachers' perspectives on formalized TIPs

overall and each type of induction component, as identified by Horn et al. (2002).

To answer RQ2, descriptive statistics (mean, standard deviation, minimum rating, and

maximum rating) were reported for the first-year teachers' level of teacher efficacy overall and

for each subscale (instructional strategies, classroom management, and student engagement).

To answer RQ3, descriptive statistics (mean, standard deviation, minimum rating, and

maximum rating) were reported for the first-year teachers' anticipated retention.

The remaining research questions employed multiple linear regression analysis. As is customary for the main variables involved in the models, a table of descriptive statistics and correlations were provided. The analyses focused on the overall perceptions regarding TIP helpfulness, teacher self-efficacy, and anticipated teacher retention, rather than the more specific components of TIPs and subscales of teacher efficacy.

To answer RQ4, the sense of teacher efficacy was regressed on the overall perceived helpfulness of formalized TIPs, after controlling gender, educational majors, and degree levels. It examined whether the first-year teachers' perceived helpfulness of formalized TIPs overall was associated with their overall level of teacher efficacy. The results are displayed as shown in Table 4 below.

To answer RQ5, anticipated teacher retention was regressed on the perceived helpfulness of formalized TIPs overall and level of teacher efficacy, after controlling gender, educational majors, and degree levels. This research question examined whether their overall teacher efficacy was associated with anticipated teacher retention.

To answer RQ6, anticipated teacher retention was regressed on the perceived helpfulness of formalized TIPs overall, after controlling gender, educational majors, and degree levels, but without level of teacher efficacy in the model. This research question examined whether the overall first-year teachers perceived helpfulness of formalized TIP was associated with their anticipated teacher attention.

To answer RQ7, the regression analysis for RQ5 was again utilized, as it provided a measure of the association between anticipated retention and perceived helpfulness of TIPs after controlling for teacher efficacy in addition to gender, educational majors, and degree levels. Using the procedure outlined by Baron and Kenny (1986), paths c and c' were compared to

determine whether there was complete or partial mediation. In addition, the Sobel test was employed to see whether the indirect effect of perception of helpfulness on anticipated retention was significant (that is, there was a mediating effect of teacher efficacy).

Assumptions

Considering that TIPs are a type of treatment the teachers undergo as they learn to teach, fidelity to the plans as specified by the government is assumed. In other words, Shanghai TIPs include the relevant action plans based on theory; TIP providers in Shanghai are properly delivering and implementing TIPs as designed; TIP participants receive the relevant designed TIP "active ingredients" and put new skills and behaviors into practice (Bellg et al., 2004). Also, Horn et al.'s (2002) conceptual model of teacher induction program is assumed to fit to this study.

Limitations

Based on threats to internal, external, construct, and statistical conclusion validity, as summarized in McMillan and Schumacher (2010), the following limitations of this study are acknowledged. First, since data were self-reported by participants, subject effects may operate whereby the answers they provided may not reflect how they really felt or behaved. Second, the study used a convenience sample rather than a teacher database consisting of all Shanghai first-year teachers; therefore, the population external validity was limited to those teachers with characteristics like those who responded. Third, the study investigated the anticipated first-year teacher retention rather than actual teacher retention. Therefore, some respondents may choose to remain despite their stated intentions. Last, although care was taken to generally phrase the research questions in terms of association rather than effects, a limitation of the study is that correlational design limit our ability to draw causal inferences.   The results may be suggestive,

but further research is needed in order to draw conclusions about TIP impacts.

Chapter 4: Results

The purpose of the study was to: (a) determine to what extent the formalized teacher induction programs (TIPs) in Shanghai are perceived to be helpful for first-year public primary school teachers; (b) measure teacher self-efficacy and anticipated job retention of first-year teachers in Shanghai public primary schools; and (c) examine the degree to which these perceptions of helpfulness, teacher self-efficacy, and anticipated job retention are associated.

The logic of the study is that the helpfulness of induction programs would increase teacher self-efficacy, which then would raise anticipated teacher retention. Thus, the extent of perceived induction program helpfulness can be thought of as the independent variable, the level of teacher self-efficacy as the mediator, and anticipation of teacher retention as the dependent variable.

Table 6 below provides demographic information regarding the respondents. Nearly 70% of the participants' ages were in the range of 23-25. The percentages of females and males were nearly 85% to 15%, respectively. The percent of participants who held Bachelor's and Master's degree was 91.4% and 8.6%. No one held a Doctoral degree. Regarding major, about 20% of participants were in education, 40% were in core course majors (Chinese literature arts, applied mathematics, or English), and 40% were in elective course majors (sciences, music/arts, or others). Nearly half of participants taught core courses (Chinese Literature Arts, Applied Mathematics, or English) and the other half taught elective courses (Music/Arts, Physical Education, Science, Technology, or Others). The primary salary range was 5,001-7,500 RMB monthly before taxes. Also, about 60% of participants reported that their average actual teaching workload with students present was 21-25 class periods per week (where one class period lasts 35 minutes).

Table 6: Demographics of the Respondents (N=408)

Variable	Response Categories	Frequency	Percentage %
Age	23-25	274	67.2
	26-30	47	11.5
	31-35	32	7.8
	36-40	25	6.1
	41-45	18	4.4
	46-50	12	2.9
Gender	Male	62	15.2
	Female	346	84.8
Education Level	Bachelor's	373	91.4
	Master's	35	8.6
	Doctoral	0	0.0
Major	Education	87	21.3
	Chinese Literature Arts	49	12.0
	Applied Mathematics	59	14.5
	English	50	12.3
	Science	127	31.1
	Music/Arts	11	2.7
	Others	25	6.1
Subject	Chinese	85	20.8
	Mathematics	68	16.7
	English	52	12.7
	Music/Arts	13	3.2
	Physical Education	5	1.2
	Science	139	34.1
	Technology	18	4.4
	Others	28	6.9
Salary	Below 3,500 RMB	1	0.2
	3,500-5,000 RMB	18	4.4
	5,001-7,500 RMB	302	74.0
	7,501-10,000 RMB	65	15.9
	Above 10,000 RMB	22	5.4
Class periods per week	5-10	33	8.1
	11-15	81	19.9
	16-20	54	13.2
	21-25	237	58.1
	26-30	2	0.5
	31-35	0	0.0
	36-40	1	0.2

Keith (2006) outlined four basic underlying regression assumptions: (1) checking multicollinearity, (2) checking the errors for each person are independent from those of others, (3) checking the residuals appear normally distributed, and (4) checking for homoscedasticity. All assumptions were checked except for that of independent observations, which seemed reasonable given that cluster sampling was not used and that the teachers completed the surveys independently. For a discussion of the steps used to evaluate the assumptions, associated statistical output, and findings, please see Appendix D.

Research Question 1: Description of Overall TIP Helpfulness

Research Question 1 (RQ1) examines the extent to which teachers perceive TIPs to be helpful. Table 7 below shows the descriptive statistics for the measure of TIP helpfulness overall and its subscales. Higher scores indicate that teachers perceive TIPs to be more helpful with responses of 0-4 representing "not at all," "of little help," "somewhat helpful," "helpful," and "very helpful," respectively. Overall, across the four aspects of TIP helpfulness (orientation, mentoring, professional development, and teacher evaluation) the mean of 3.34 indicates that teachers, on average, viewed the TIP as "helpful." Teachers perceived the TIPs to be the most helpful in terms of mentoring (mean = 3.49) and the least in terms of teacher evaluation (mean = 3.22). Still, based on the means for all 4 subscales, the teachers report the TIPs to be helpful.

Table 8 shows the frequency and perception of helpfulness for each TIP component. The majority of teachers thought that mentoring (60.3%) and professional development (53.2%) was "Very Helpful." Forty percent of teachers perceived that professional development and teacher evaluation were "Helpful." Less than 8% of first-year teachers reported that the TIPs were of no or little help in terms of any of the four components.

Table 7: Descriptive statistics for the overall scores and subscales of the measures of TIP helpfulness

	M	SD	Min	Max
TIP Helpfulness (Overall)	3.34	0.750	0	4
Orientation	3.25	0.953	0	4
Mentoring	3.49	0.784	0	4
Professional Development	3.41	0.794	0	4
Teacher evaluation	3.22	0.961	0	4

Table 8: The Frequency and Perception of Helpfulness in TIP components

	Not at all	Of Little Help	Somewhat Helpful	Helpful	Very Helpful
›Orientation	10	20	27	153	198
Percentage (%)	2.5%	4.9%	6.6%	37.5%	48.5%
Mentoring	7	8	8	139	246
Percentage (%)	1.7%	2.0%	2.0%	34.1%	60.3%
Professional Development	7	8	13	163	217
Percentage (%)	1.7%	2.0%	3.2%	40.0%	53.2%
Teacher Evaluation	12	18	27	163	188
Percentage (%)	2.9%	4.4%	6.6%	40.1%	46.1%

Research Question 2: Description of Overall Teacher Self-efficacy

Research Question 2 (RQ2) examines the extent to which teachers feel efficacious regarding (a) student engagement, (b) instructional strategies, and (c) classroom management. Table 9 below shows the descriptive statistics for the measure of teacher self-efficacy overall and for its three subscales. Higher scores on this measure of teacher efficacy indicate teachers believe they have more capabilities to bring about expected student outcomes (Tschannen-Moran & Woolfolk Hoy, 2001) with responses of 1 for "not at all" to 9 for "a great deal." The results revealed that the three elements of teacher efficacy had an overall mean of 79.78 (corresponding to an item average of 6.65, which corresponds to "quite a bit.") The scores of each subscales are

very similar and, again, correspond to teachers reporting that they feel "quite a bit" of efficacy

with respect to instructional strategies, classroom management, and student engagement.

Table 9: Descriptive statistics for the overall scores and subscales of the Teacher Sense of Efficacy Scale (TSES)

	Cron-bach's Alpha	M	SD	Min	Max	Number of Items	Average Per Item
TSES (Overall)	.938	79.78	10.44	41	108	12	6.65
Instructional Strategies	.888	27.02	3.73	11	36	4	6.76
Classroom Management	.862	26.54	4.01	15	36	4	6.64
Student Engagement	.822	26.17	3.64	12	36	4	6.54

As shown in Table 10, for items on the subscale of instructional strategies, the majority

of teachers (more than 57%) responded "Quite A Bit" or higher for each item. In measuring

classroom management, however, under half the teachers responded "Quite A Bit" or higher for

two of the four items (45% for item #1 and 48% for item #3) while the majority reported "Quite

a Bit" or higher for the other two items (item #6 and item #8). In regard to the items measuring

student engagement, again under half the teachers responded "Quite A Bit" or higher for two of

the four items (39% for item #2 and 47% for item #11). Thus, across the 12 items of the TSES,

the teacher responses suggest that confidence in classroom management and engaging students is

less solidified.

Table 10: Frequencies and percentages of responses to individual items on the Teacher Sense of Efficacy Scale

Item		Not at all	2	Very Little	4	Some Degree	6	Quit A Bit	8	A Great Deal
Instructional Strategies Items										
5. To what extent can you craft good questions for your students?	n	0	2	0	1	41	131	168	31	34
	%	0%	.5%	0%	.2%	10.0%	32.1%	41.2%	7.6%	8.3%
9. To what extent can you use a variety of assessment strategies?	n	0	0	4	1	48	103	188	41	23
	%	0%	0%	1.0%	.2%	11.8%	25.2%	46.1%	10.0%	5.6%
10. To what extent can you provide an alternative explanation or example when students are confused?	n	0	1	0	0	33	88	200	49	37
	%	0%	.2%	0%	0%	8.1%	21.6%	49.0%	12.0%	9.1%
12. How well can you implement alternative strategies in your classroom?	n	0	1	1	0	55	95	173	52	31
	%	0%	.2%	.2%	0%	13.5%	23.3%	42.4%	12.7%	7.6%
Classroom Management Items										
1. How much can you do to control disruptive behavior in the classroom?	n	1	0	0	0	136	87	91	51	42
	%	.2%	0%	0%	0%	33.3%	21.3%	22.3%	12.5%	10.3%
3. How much can you do to calm a student who is disruptive or noisy?	n	0	0	1	2	72	138	118	37	40
	%	0%	0%	.2%	.5%	17.6%	33.8%	28.9%	9.1%	9.8%
6. How much can you do to get children to follow classroom rules?	n	1	0	0	0	27	133	158	50	39
	%	.2%	0%	0%	0%	6.6%	32.6%	38.7%	12.3%	9.6%
8. How well can you establish a classroom management system with each group of students?	n	0	1	3	0	47	117	162	49	29
	%	0%	.2%	.7%	0%	11.5%	28.7%	39.7%	12.0%	7.1%
Student Engagement										
2. How much can you do to motivate students who show low interest in schoolwork?	n	1	0	4	2	110	135	101	36	19
	%	.2%	0%	1.0%	.5%	27.0%	33.1%	24.8%	8.8%	4.7%
4. How much can you do to help your students value learning?	n	0	1	3	2	73	122	140	38	29
	%	0%	.2%	.7%	.5%	17.9%	29.9%	34.3%	9.3%	7.1%
7. How much can you do to get students to believe they can do well in schoolwork?	n	0	0	2	1	37	119	179	44	26
	%	0%	0%	.5%	.2%	9.1%	29.3%	43.9%	10.8%	6.4%
11. How much can you assist families in helping their children do well in school?	n	0	1	2	1	50	116	162	49	27
	%	0%	.2%	.5%	.2%	12.3%	28.4%	28.4%	12.0%	6.6%

Research Question 3: Description of Anticipated Teacher Retention

Research Question 3 (RQ3) examines the extent to which teachers' plans indicate an intent to remain in the public school teaching profession. Likert-scaled items were used to measure anticipated teacher retention; the response options for all items were "strongly disagree" (coded 1) to "strongly agree" (coded 4). The higher ratings of agreement on Item 1 and Item 2, the more possibility first-year teachers intend to remain teaching in Shanghai public primary schools. The higher ratings on Item 3, 4, and 5, the more possibility first-year teachers are willing to leave teaching in Shanghai public primary schools. After reverse-scoring items 3, 4 and 5, Cronbach's alpha was calculated as an estimate of the scale's internal consistency reliability. Item #2 was problematic as it lowered the reliability to just .530; with its removal, the 4-item scale reached an acceptable level of reliability (a = .781). Thus, the remaining analyses are based on the 4-item scale (without item #2). Averaging across the four items, the mean of anticipated teacher retention is 4.16, which suggests that, overall, the first-year teachers, on average, agreed with statements reflecting an intention to stay (and, relatedly, disagreed with statements reflecting an intention to leave) teaching in a Shanghai public primary school. See Table 11 for the descriptive statistics of the overall measure and each of the individual items prior to reverse-scoring items 3, 4, and 5.

Table 12 provides the frequencies and percentages of responses to the anticipated teacher retention items (before reverse-scoring Items 3, 4, and 5). The majority of first-year teachers "Agree" (63.5%) or "Strongly Agree" (31.4%) with staying in the same position. Few participants (less than 5%) responded they intended to relocate to private schools, private educational institutions other than private schools, or change to a different profession other than teaching.

Table 11: Descriptive statistics for the overall score and individual items measuring anticipated teacher retention (before reverse scoring Items 3, 4, and 5)

	Cron-bach's alpha	M	SD	Min	Max
Anticipated Teacher Retention (5-item Mean)	.530	3.88	.428	1.80	4.80
Anticipated Teacher Retention (4-item Mean without Item #2)	.781	4.16	.557	1.00	5.00
1. Stay in Same Position	-	4.24	.617	1	5
2. Relocate to Different Public Primary School in Shanghai	-	2.79	.764	1	5
3. Relocate to Private Primary School in Shanghai	-	2.08	.616	1	5
4. Relocate to Private Education Institution other than Private Schools	-	1.81	.721	1	5
5. Change to Different Profession other than Teaching	-	1.73	.882	1	5

Table 12: The Frequency and Percentages of Anticipated Teacher Retention Items (Before Reverse Scoring for Item 3, 4, and 5)

		Strong Disagree	Disagree	Un-decided	Agree	Strongly Agree
1. Stay in Same Position	n	3	2	16	259	128
	%	.7%	.5%	3.9%	63.5%	31.4%
2. Relocate to Different Public Primary School in Shanghai	n	24	93	240	46	5
	%	5.9%	22.8%	58.8%	11.3%	1.2%
3. Relocate to Private Primary School in Shanghai	n	49	290	61	5	3
	%	12.0%	71.1%	15.0%	1.2%	.7%
4. Relocate to Private Educ'n Instit'n other than Private Schools	n	140	217	44	4	3
	%	34.3%	53.2%	10.8%	1.0%	.7%
5. Change to Different Profession other than Teaching	n	199	145	46	12	6
	%	48.8%	35.5%	11.3%	2.9%	1.5%

Research Question 4: Relationship Between TIP Helpfulness and Teacher Self-Efficacy

Prior to conducting the multiple regression analyses to address the remaining research questions, Pearson correlations (shown in Table 13) were calculated between key variables (TIP helpfulness, teacher self-efficacy, and anticipated teacher retention) and control variables. There were three control variables in this study: gender, educational level, and major. Gender was dummy coded as "0" for male and "1" for female. Education level was dummy coded as "0" for a Bachelor's degree and as "1" for above a bachelor's degree (master's and doctoral degree). Also, major was dummy coded as "0" for education and "1" for non-education major (Chinese literature arts, applied mathematics, English, sciences, music/arts, sciences, music/arts, or others).

Table 13: Descriptive statistics and Pearson correlations between key variables in the regression models with control variables

Variables	Correlations				
	2	3	4	5	6
1. Gender (1=female)	-.650	-.540	.047	-.015	.117*
2. Degree (1=> Bachelor's)		-.054	-.072	.108*	-.071
3. Major (1= non-Education)			.161**	-.099*	.159**
4. TIP Helpfulness				-.079	.310**
5. Teacher Self-efficacy					-.142**
6. Anticipated Teacher Retention					
*p<.05; **p<.01					

Based on the results in Table 13, TIP helpfulness (*r*= .310) and teacher self-efficacy (*r*= -.142) were both significantly correlated to anticipated teacher retention. However, TIP helpfulness and teacher self-efficacy (*r*= -.079) were not statistically correlated with each other. As for control variables, female first-year teachers reported stronger levels of agreement with plans to stay teaching in Shanghai public schools than did males (*r*= .117). Teachers who held an advanced degree had higher teacher self-efficacy (*r*= .108). Teachers who did not complete

an education major perceived more helpfulness from the Shanghai TIP (r= .161) and were more likely to stay in public primary schools (r= .159). However, they had relatively lower teacher self-efficacy (r= -.099).

Research Question 4 (RQ4) examines the association between TIP helpfulness and teacher self-efficacy after controlling for gender, level of education, and major. It was designed to investigate the influence of the helpfulness of TIP on teacher self-efficacy after controlling for gender, level of education, and major.

The overall teacher self-efficacy scores were regressed on the total rating they gave regarding the helpfulness of the TIP across four components (orientation, mentoring, training, and evaluation) in which they participated. The full model was statistically significant, $F(4, 403)$= 2.453, p = .045, with level of education being the only predictor to account for a statistically significant proportion of unique variation in teacher self-efficacy (see Table 14). Those with education beyond the Bachelor's level tended to have higher levels of self-efficacy (p=.047). After controlling for gender, level of education, and major, teacher reports regarding TIP helpfulness explained less than 1% additional variance, $F(1,403)$= 1.310, p=.253, ΔR^2 = .003, and was not statistically significant. Thus, for the final research question, regarding teacher self-efficacy as a mediating variable, the condition of path "a" being statistically significant was unmet.

Table 14: Summary of simultaneous multiple linear regression results predicting teacher self-efficacy from perceptions of the helpfulness of teacher induction programs

	b	SE_b	β	t	p
Control Variables:					
Gender (0=Male)					
Female (1=Female)	-.315	1.437	-.011	-.219	.827
Level of Education (0=Bachelor's)					
Graduate Degree (1=Graduate)	3.667	1.843	.098	1.990	.047*
Major (0=Education)					
Not Education Major (1=NotEd)	-2.171	1.274	-.085	-.1.705	.089
Predictor Variable:					
Helpfulness of TIPs (Path "a")	-.793	.693	-.057	-1.145	.253

* p < .05 ** p < .01

Note: R= .154 , R^2= .024 , F(4, 403)= 2.453, p= .045

Research Question 5: Relationship Between Teacher Self-efficacy and Anticipated Teacher Retention

Research Question 5 (RQ5) is designed to examine the association between teacher self-efficacy and anticipated teacher retention after controlling for gender, level of education, and major, as well as teacher perceptions of TIP helpfulness. It was designed to test the influence of teacher self-efficacy on anticipated teacher retention after controlling for gender, level of education, major, and TIP helpfulness.

The overall anticipated teacher retention scores were regressed on the teacher self-efficacy scores (overall, across student engagement, instructional strategies, and classroom management), TIP helpfulness ratings and the three control variables. The full model was statistically significant, $F(5, 402)= 12.305$, $p< .001$, with gender, major, teacher self-efficacy and TIP helpfulness each accounting for a statistically significant proportion of unique variation in anticipated retention (see Table 15). TIP helpfulness and teacher self-efficacy together explained an additional 8.9% of the variation in anticipated retention above that accounted for by the control variables alone (4.4%), $F(2,402)= 20.581$, $p<.001$, $\Delta R^2 = .089$. However, just 1.1% of

the 8.9% additional explained variation is uniquely attributable to teacher self-efficacy, $F(1,402)= 5.025$, $p.=026$, $\Delta R^2 = .011$. Females agreed to a greater extent than males that they anticipated remaining a Shanghai public school teacher. Those who did not major in Education also agreed to a greater extent than did those who majored in Education. Those who rate TIP helpfulness higher anticipate remaining in teaching, even when teacher self-efficacy is controlled (i.e., path c' in the mediation model is significant). Moreover, in directly addressing RQ5, teacher self-efficacy (i.e., path b in the mediation model) is found to be statistically significantly related to anticipated teacher retention. However, the negative coefficient implies that, for each teacher self-efficacy increase by a value of one point by first-year teachers in Shanghai public primary schools, the dependent variable, anticipated teacher retention, would decrease by .006 points ($b= -.006$, $p=.026$). The results suggest that first-year teachers who feel more efficacious overall tend to less strongly agree with items suggesting they anticipate remaining a teacher in Shanghai public primary schools. The effect, however, of teacher self-efficacy is small, accounting for just 1.1% of the variation in anticipated retention.

Table 15: Summary of simultaneous multiple linear regression results predicting anticipated teacher retention from TIP helpfulness and teacher self-efficacy

	b	SE_b	β	t	p
Control Variables:					
Gender (0=Male)					
Female (1=Female)	.165	.072	.106	2.280	.023*
Level of Education (0=Bachelor's)					
Graduate Degree (1=Graduate)	-.054	.093	-.027	-.576	.565
Major (0=Education)					
Not Education Major (1=NotEd)	.146	.064	.108	2.273	.024*
Predictor Variables:					
Teacher self-efficacy (Path "b")	-.006	.003	-.105	-2.242	.026*
Helpfulness of TIPs (Path " c' ")	.205	.035	.278	5.874	<.001**

*$p < .05$ **$p < .01$
Note: $R= .364$, $R^2=.133$, $F(5, 402)=12.305$, $p<.001$

Research Question 6: Relationship Between TIP Helpfulness and Anticipated Teacher Retention

Research Question 6 (RQ6) examines the association between TIP helpfulness and anticipated teacher retention after controlling for gender, level of education, and major. It was designed to test the influence of the helpfulness of TIP on anticipated teacher retention after controlling for gender, level of education, and major. It does not control for teacher self-efficacy and generates path c that is later used in the test of mediation.

The overall anticipated teacher retention in Shanghai public primary schools scores were regressed on the total rating they gave regarding the helpfulness of the TIP across four components (orientation, mentoring, training, and evaluation) in which they participated. The full model was statistically significant, $F(4, 403)= 13.986$, $p < .001$, with gender, major, and TIP helpfulness ratings all accounting for statistically significant proportions of unique variation in anticipated retention (see Table 16). Females agreed to a greater extent, than males, with items measuring anticipated retention, as did those who were not education majors, as compared to those who did major in education. Directly addressing RQ6, after controlling for gender, level of education, and major, teacher reports regarding TIP helpfulness explained 7.8% additional variance, $F(1,403)= 35.779$, $p<.001$, $\Delta R^2 = .078$, and was statistically significant and is considered to be a medium effect. When TIP helpfulness rating increased by a value of one point, the anticipated teacher retention would increase by .210 point ($b= .210$, $p< .001$). Thus, for the final research question, regarding teacher self-efficacy as a mediating variable, the condition of path "c" being statistically significant (when the mediator variable was not in the model) was met.

Table 16: Summary of simultaneous multiple linear regression results predicting anticipated teacher retention from perceptions of the helpfulness of teacher induction programs

	b	SE_b	β	t	p
Control Variables:					
Gender (0=Male)					
Female (1=Female)	.167	.073	.108	2.293	.022*
Level of Education (0=Bachelor's)					
Graduate Degree (1=Graduate)	-.074	.093	-.037	-.797	.426
Major (0=Education)					
Not Education Major (1=NotEd)	.159	.064	.117	2.459	.014*
Predictor Variable:					
Helpfulness of TIPs (Path "c")	.210	.035	.284	5.982	<.001**

* p < .05 ** p < .01
Note: R= .349, R²= .122 , F(4, 403)= 13.986, p< .001

Research Question 7: Mediation

Research Question 7 (RQ7) was to examine whether there an indirect effect of the helpfulness of TIP on anticipated teacher retention via teacher self-efficacy. The research question was designed to check whether or not teacher self-efficacy can be a mediator between TIP helpfulness and anticipated teacher retention.
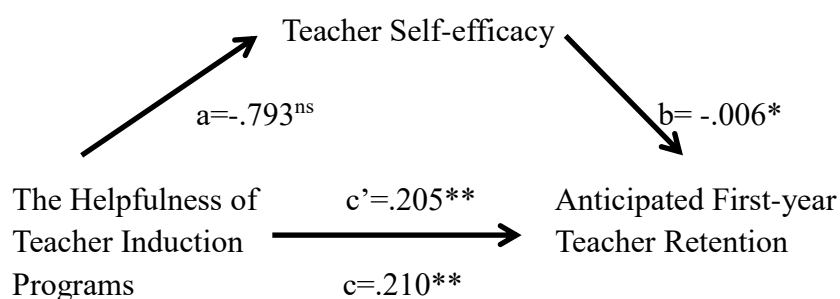
To answer RQ7, the regression analysis for RQ5 was again utilized. According to Baron and Kenny (1986), there are three steps that should be followed (p.1176). The path diagram with unstandardized regression coefficient is posted in the figure below (Figure 4).

The first step is to test that variations in levels of the independent variable (TIP helpfulness) significantly account for the variations in the mediator (teacher self-efficacy) (path a). However, as the regression shows in Table 15, the multiple regression was not statistically significant (a= -.793, SE_a = .693). The helpfulness of TIP accounted for just 0.3% of the variance in teacher self. Therefore, the first step was not established.

Then, test that variations in the mediator (teacher self-efficacy) significantly account for variations in the dependent variable (anticipated teacher retention) (path b). In Table 16, the

multiple regression was statistically significant (b= -.006, SE_b = .003). However, teacher self-efficacy accounted for just 1.1% of the variance in anticipated teacher retention and is considered to be a small effect.

When paths a and b are controlled, a previously significant relationship (path c) between the independent variable (TIP helpfulness) and dependent variable (anticipated teacher retention) is no longer significant (path c'). However, it can be noted from Table 16 (versus Table 17) that the unstandardized regression coefficient for TIP helpfulness changes little (c'= .205 versus c= .210) when teacher self-efficacy is controlled versus left uncontrolled. Path c' remains statistically significant.

Teacher Self-efficacy

a=-.793[ns]

b= -.006*

The Helpfulness of Teacher Induction Programs

c'=.205**

c=.210**

Anticipated First-year Teacher Retention

*p < .05 **p < .01; ns = not significant

Figure 4: Path Diagram with Unstandardized Coefficients

Since the result of multiple regressions did not meet the standards of Baron and Kenny (1986)'s mediation test, there is no indirect effect of the helpfulness of TIP on anticipated teacher retention via teacher self-efficacy. In other words, teacher self-efficacy is not a mediator between the helpfulness of TIP and anticipated teacher retention in first-year teachers in Shanghai public primary schools.

As further confirmation of this conclusion that there is no mediating effect, the Sobel test (using unstandardized coefficients and their standard errors) was performed to test for the indirect effect of perception of helpfulness on anticipated teacher retention. As Figure 5 shows below, the Sobel Test indicates the result is not statistically significant ($z = .993$, $p = .321$), which means there is no indirect effect of the helpfulness of TIP on anticipated teacher retention via teacher self-efficacy.

Input:		Test statistic:	Std. Error:	p-value:
a	−.793	Sobel test: 0.99322191	0.00479047	0.32060182
b	−.006	Aroian test: 0.91111906	0.00522215	0.36223264
s_a	.693	Goodman test: 1.10245379	0.00431583	0.27026444
s_b	.003	Reset all	Calculate	

Figure 5: Sobel Test to Examine Mediator

Chapter Summary

This chapter discussed how the data were prepared for the main analyses addressing the seven research questions. Dummy coding of categorical variables, reverse-coding of negatively-worded items, and calculations of composite variables for the researcher-designed instruments (TIP helpfulness and anticipated retention) were discussed. The key findings of checking statistical assumptions were presented and it was noted that removal of the four cases identified as influential ones did not alter the general pattern of results. For each research question, tables of the statistical results, based on the full dataset of 408 cases, were presented and explained. The findings are discussed in the next chapter.

Chapter 5: Discussion

The purpose of the study is to: (a) determine to what extent the formalized teacher induction programs in Shanghai are helpful for first-year teachers; (b) measure teacher efficacy and anticipated job retention of beginning teachers in Shanghai primary school; and (c) examine the degree to which these perceptions of helpfulness, teacher efficacy, and anticipated job retention are associated. This chapter discusses the results from Chapter 4, addresses limitations of the study, presents implications for Shanghai TIPs, and offers suggestions for future research. Shanghai TIPs are one-year long, mandatory programs for first-year teachers in Shanghai public primary schools. The induction programs include four main components: orientation, mentoring, professional development, and teacher evaluations. Further details about Shanghai TIPs are available in Chapter 2.

Discussion of Results

The target population of the study is first-year teachers in Shanghai public primary schools who each hold a Bachelor's or higher degree and teaching credential. According to these sampling criteria, there were 408 first-year teachers in Shanghai public primary schools that participated in this study, which is 13.6% of the target population. To ensure the sample had similar characteristics and could represent the target population, participants were described prior to answering the research questions and compared to the results found in related literature. The ratio of male teacher to female teachers in this study was 15% to 85%, which reflects the report

that "the majority of teachers in public primary schools are female and the percent of male teachers in Shanghai primary schools is about 15%" (Wu, 2018, para. 2). The percentages of participants who had bachelor's and graduate degrees in this study were 91.4% and 8.6%, respectively. In Shanghai, it is reported that 73.65% of primary school teachers hold bachelor's

degrees and 19.18% of primary school teachers hold graduate degrees (including 19% master's

and 0.18% doctorates (Wu, 2018). Thus, the percentage of study participants with graduate

degrees was lower than expected. This result indicates that a large percentage (91.4%) of first-

year teachers are college graduates with Bachelor's Degrees. The majority (67.2%) of

participants in this study were 23-25 years old. Although the age distribution of the target

population is not provided, the age distribution of the sample in this study is reasonable. It

supports the literature that the "Shanghai teaching force is young" (Wu, 2018, para. 11). Most of

participants (60%) in this study described that their periods of teaching in class was in the range

of 21-25 class teaching periods with students per week (not including the work hours in office).

The result is similar to 20 class periods of teaching with students as Shanghai TIP official

guideline suggested (Shanghai TIP). A large number of the participants in this study reported

their monthly salary (before tax) was 7,500 RMB. The result is close to the Shanghai average

monthly payment in 2017, which was 7,132 RMB (Shanghai Published, 2018). Thus, the sample

upon which this study's results are based, appears to be representative of Shanghai public

primary school teachers in terms of, gender, workload, and pay; however, the education level of

the sample is somewhat lower than expected in terms of the level of education completed.

Research Question 1 (RQ1) asks, "To what extent do teachers perceive TIPs to be

helpful?" As the results shows in the study, first-year teachers in Shanghai public primary

schools had a very high TIP participation rate. Almost all of the participants (except for one)

reported that they attended a Shanghai TIP in their first year of teaching. The result is the same

as the literature, that the "Shanghai TIP participation rate is 97%, which is higher than those in

the other areas and countries" (Zhang, Ding, &Xu, 2016). Also, this result indicates that

participating in a TIP is required for the first-year teachers in Shanghai public primary schools

and it is a partial requirement to renew their teaching credentials (Order No.55, Shanghai

Education Commission, 2013).

Secondly, the majority of the participants (except for two individuals who attended only

some of the TIP activities) attended all four types of TIP activities that the survey items inquired

about (orientation, mentoring, professional development, and teacher evaluation). The results

suggest that the Shanghai TIP programs' organization is consistent with Horn, Sterling, and

Subhan's (2002) TIP model. Horn et al. (2002) identified orientation as "intended to orient new

teachers to the community, district, curriculum, and school" (p. 8). In Shanghai TIP, orientation

includes welcoming first-year teachers, introducing the academic goals/learning and learning

philosophy of the districts, reviewing the policies, and addressing induction issues before the

new school year. Horn et al. (2002) regarded mentoring as "one in which the administration has

a mentoring program in place with specific guidelines, programs are funded, mentors are

compensated in some way, and there are specific expectations and policies regarding the

mentoring process" (p. 10). In Shanghai TIPs, mentoring consists of observation, post-

observation meeting, planning with mentors, etc.   Horn et al. (2002) defined professional

development as providing opportunities for the first-year teachers to achieve additional

knowledge, skills, and attitudes necessary for successful teaching. In Shanghai TIP, professional

development includes seminars, workshops, activities, competitions, and collaborations. Horn et

al. (2002) regarded teacher evaluation as a way for first-year teachers to know their strengths and

weaknesses. Also, teacher evaluation determines whether the first-year teachers are qualified to

be retained. In Shanghai TIP, first-year teachers are evaluated by teacher themselves, mentors,

school administrators, district administrators, and the Shanghai Municipal Office of Teacher

Education. Evaluations include attendance records, evaluating the TIP teacher handbook, class

observation evaluations, and teacher morality evaluations (such as teacher behaviors, educational policies, teacher ethics). Therefore, Horn et al.'s (2002) model fits to the study.

Thirdly, regarding Shanghai first-year teachers' perceptions of TIP helpfulness, the results of this study are that TIP helpfulness is rated relatively high. The mean of TIP helpfulness overall was 3.34 (out of 4), which falls within the range closest to the descriptor "helpful" (see Part II of the questionnaire provided in Appendix A). Also, the mean ratings for sub-items (orientation, mentoring, training, and evaluation) were all in the "helpful" range (above "not very helpful" but not reaching "very helpful"). The highest helpfulness rating was for mentoring (M= 3.49) and the next highest was for professional development (M= 3.41) which was consistent with the previous related studies that found mentoring and professional development to be regarded as the two most helpful components in TIPs (Bradley-Levine & Mosier, 2016; Clark & Byrnes, 2012; Ding, 2010; Harrison et al., 2006; Main, 2016).

To improve the perception of helpfulness of Shanghai TIPs, participants responded to open-ended questions and expected Shanghai TIPs should be more "practical," "interactive," and "efficient". "Being practical" means the Shanghai TIP should include case studies where they can prepare skills for their jobs, including describing a situation/a student, identifying an issue, analyzing a situation and finding a resolution. "Being interactive" indicates that first-year teachers look for TIPs offering them more time to communicate with peers and teacher experts. Also, "being efficient" means first-year teachers hope for less paperwork in TIPs but more opportunities to expose their horizons in observations and research studies.

Research Question 2 (RQ2) asks, "To what extent do teachers' feel efficacious regarding (a) student engagement, (b) instructional strategies, and (c) classroom management?" Three sections of teacher self-efficacy were examined in this study. The results indicate that the

average scores of each section are in the range of "some degree" to "quite a bit". Teacher self-efficacy for instructional strategies was the highest (27.02 out of 36) while teacher self-efficacy for student engagement was the lowest (26.17 out of 36). Overall, these results indicate that first-year teachers in Shanghai public primary schools, on average, have a moderately high level of teacher self-efficacy which is consistent with a previous finding that "Shanghai public primary school teachers have high agreement on teacher self-efficacy and teacher identity" (Wu, 2018, para. 7).

However, the percentage of participants who selected they feel "not at all" efficacious and "very little" efficacy in the rating of "for student engagement" was twice that of "for instructional strategies" and "for classroom management." These results regarding teacher self-efficacy are similar to those in the related literature. Ding (2010) studied teachers in mainland China and concluded that the overall teacher self-efficacy in China was relatively high but unbalanced for each section. In his study, 76.7% of teachers felt efficacious (scored as "Quite a Bit" and "A Great Deal") for instructional strategies. However, 19% of Ding's teacher participants self-reported their teacher self-efficacy for student engagement was "Very Little" and "Not at all." The results of the current study reveal that first-year teachers in Shanghai public primary schools are more confident about their ability to employ effective instructional strategies that engage the students and manage the classroom. Also, it indicates that first-year teachers may receive more professional development in instructional strategies than classroom management and student engagement in college preparation programs or teacher induction programs.

Research Question 3 (RQ3) investigates, "To what extent do teachers' plans indicate an intent to remain in the public school teaching profession?" After reversing the scores of Item 3

"thinking of relocating to a private school", Item 4 "thinking of relocating to private educational institutions other than private school", and Item 5 "thinking of changing to a different profession other than teaching", the results showed that the average for teacher anticipated teacher retention (5-item) is 3.88 out of 5. After deleted item 2,"thinking of relocating to a different public primary school", the average for teacher anticipated teacher retention (4-item) is 4.16 out of 5. It means that first-year teachers at Shanghai public primary schools have moderately high-anticipated teacher retention. The majority of participants chose "Agree" (63%) and "Strongly agree" (32%) on "thinking of staying in the same teaching position." When asked about "relocating to a private primary school", "relocating to a private educational institution other than private schools", or "relocating to a different profession other than teaching", 4% of the participants selected "agree" or "strong agree." The results reveal that a majority of first-year teachers in Shanghai public primary schools intend to stay in public schools. The results of this study show a higher anticipated teacher retention rate than what is found in a prior study about Shanghai public primary teachers. Wu (2018) studied teachers in Shanghai public primary schools and concluded that about one-third of teachers considered leaving. Based on the author's perspective and experience during the study, one possible reason for this discrepancy could be due to the fact that Wu (2018) studied teachers in Shanghai public primary schools, including those beyond their first-year of teaching.

Research Question 4 (RQ4) examines: "Is there an association between the helpfulness of TIP and teacher self-efficacy after controlling for gender, educational level, and major?" Perceptions regarding TIP helpfulness were not found to be significantly correlated to teacher self-efficacy. The multiple regressions also verified that the overall TIP helpfulness rating was not a significant predictor of teacher self-efficacy, after controlling for gender, educational level,

and major. The helpfulness of TIP accounted for less than one percent of the additional variance in teacher self-efficacy. Even though there are few research studies discussing the relationship between TIP helpfulness and teacher self-efficacy in Shanghai or Mainland China, the result of this study is inconsistent with the prior literature in other countries and areas. For example, Henry (2016) surveyed 124 beginning teachers in their 1st, 2nd, or 3rd year of the induction programs in urban schools and provided Pearson correlations showing a statistically significant direct relationship between the induction effectiveness and teacher self-efficacy. However, Henry's (2016) study defined induction effectiveness in five challenges that beginning teachers meet: planning, handling discipline, communicating with parents, and implementing school district initiatives. It is different from this study, which defines the induction program by using its main activities. Munshi (2018) studied the relationship between teacher induction programs and teacher efficacy by interviewing seven novice teachers, and the findings suggested that mentoring and professional developments are two key components in induction programs that "support their [novice teachers'] growing sense of self-efficacy as professional" (Abstract). However, Munshi's (2018) analyzed each induction components' helpfulness instead of looking at the induction program overall as a predictor of teacher self-efficacy.

In addition, based on the author's perspective and experience during the study, there are three main possible reasons that may account for this discrepancy. First, there may be some components in Shanghai TIPs having statistically significant effects on teacher self-efficacy in first-year teachers. However, because this study investigates the effect of the helpfulness of TIPs as a whole on teacher self-efficacy, these potential relationships may be masked. Secondly, first-year teachers in Shanghai public primary schools recognized the overall helpfulness of induction programs as a whole and identified that TIP experiences enrich their education philosophies and

theorems (Ding, 2010). However, the current Shanghai TIPs seem to include less practical learning, leaving the gap open rather than allowing the theorems to be translated into real class practice. Also, the teacher self-efficacy scale measures a teacher's beliefs regarding actions in class practice (Bandura, 1997). Therefore, it seems reasonable for teachers to not increase their self-efficacy through learning from Shanghai TIPs. Thirdly, the negative coefficient (not statistically significant) appears because there is a large portion of non-education major teachers in the study sample. Ding (2010) explained that non-education major teachers might feel unconfident due to not having participated in a college teacher preparation programs.

As for the control variables, results indicate that teachers who hold an advanced degree have high teacher self-efficacy, which is consistent with prior literature. Ding (2010) pointed out that teachers who hold master's degrees have relatively high teacher self-efficacy compared with those who hold bachelor's degrees.

Research Question 5 (RQ5) asks: "Is there an association between teacher self-efficacy and anticipated teacher retention after controlling for perceptions of TIP helpfulness, gender, educational level, and major?" The findings indicate that, when teacher self-efficacy increases, first-year teachers in Shanghai public primary schools anticipated teacher retention decreases. This result is inconsistent with the hypothesis.

The primary reason why teachers who have high teacher self-efficacy would be less likely to stay in teaching may be job satisfaction. Although first-year teachers felt efficacious as teachers, they may feel "unsatisfied" regarding their social status and social respect even though teaching, overall, is perceived as a moderately prestigious profession in Shanghai. Also, first-year teachers may be "very unsatisfied" with their salary. Wu (2018) reported there was "only 6% of Shanghai public primary school teachers who were satisfied with their salary" (Wu, 2018,

para 7). Thus, it stands to reason in such a situation that they may consider leaving. From this author's perspective, first-year teachers might not have or barely have a clear job prospect and career plans for their life-long teaching career. Also, the majority of first-year teachers were 23-25 years old so they may be able to be more flexible in careers allowing them to try out different jobs. Even though they have teaching skills and strategies, they may not be thinking about the long-term impacts of making teaching their career. Moreover, this data was collected in March which is about two-thirds of the way through the school year. It is the time first-year teachers slowly turn their teaching attitude from the disillusionment phase to the rejuvenation phase (New Teacher Center, 2006). The disillusionment phase is a very challenging phase for first-year teachers. They are overwhelmed with evaluations, teaching, coping with parents, and other school affairs; however, for the most parts they are uncertain as to the process itself. This may lead to negative expressions such as anxiety, stress, and disenchantment. In the rejuvenation phase, first-year teachers' teaching attitudes begin to slowly rise again. However, this phase "tends to last into spring with many ups and downs along the way" (New Teacher Center, 2006, p. 3). Therefore, it is reasonable that first-year teachers as the participants in this study have a lower retention rate even though their teacher self-efficacy is relatively high. In addition, the school rank, district resources, and school location may be considered as factors in anticipated teacher retention. For teachers who work in schools with relatively low academic ranks, who are far away from home, or in rural areas, they may have additional reasons to consider leaving.

Research Question 6 (RQ6) asked, "Is there an association between the helpfulness of TIP and anticipated teacher retention after controlling for gender, educational level, and major?" The study explored whether the perception of TIP helpfulness is significantly and positively correlated to anticipated teacher retention. The multiple regression analyses also indicated that

perception of TIP helpfulness was a statistically significant predictor of anticipated teacher retention. The helpfulness of TIPs accounted for nearly 8% of additional variance in teacher self-efficacy, which is considered to be a medium effect. In other words, the more that teachers feel TIPs are helpful, the more likely they are to stay. The results are consistent with findings in the literature that participating in TIPs positively impacts teacher retention (Allen, 2014; Huling et al., 2012; Nielsen, 2007).

There are several possible reasons why female teachers have relatively high-anticipated teacher retention as compared with male teachers. The results are the same as Ding's (2010) and Zhu's (2014) studies in Mainland China. Also, from the author's perspective, there are several reasons. At first, there are more female graduates majoring in education than males in colleges. Zhu (2014) reported that the percentage of female college students in education in Mainland China is 65.3% while just 34.7% are male students. The remarkable difference in gender in college graduates not only means that there are more females than males who choose to study education but also reveals that the expectations for females more so than males, to some extent, may be to have a stable occupation such as teaching and accounting after college graduation. In addition, males are expected to earn more than females. However, teaching in public primary schools may not pay as much as other positions. Thus, due to some or all of these reasons, it seems reasonable that the retention rate of male teachers in public primary schools is lower than it is for female teachers.

Also, teachers who are not education majors have higher anticipated teacher retention than those who are education majors. As mentioned in Chapter 3, this study dummy coded college majors as a control variable. Non-education major teachers are those participants whose college majors were Chinese, English, mathematics, science, music, arts, and others, which was

other than education. Non-education major teachers did not participate in teacher preparation

programs in college. These results are consistent with previous literature that suggested gender

and college major affect teacher retention (Ding, 2010; Struyven &Vanthournout, 2014). Beyond

those past findings, this author considered that the result might be related to the National Higher

College Entrance Exam (NCEE), namely "Gaokao," in Mainland China. NCEE is an annual

academic qualification test required of almost all high school graduates who hope to pursue an

undergraduate education. Zhang (2017) described the importance of the NCEE as "the pivotal

moment for Chinese secondary students as their scores in large part determine their future –

whether they can go to university, which institution they will be admitted and consequently what

careers await them" (para. 10). In other words, what major the candidate will learn in college is

dependent on his or her NCEE score rather than his or her application. A candidate who is

willing to learn education but who has not attained the minimum score required of education

majors cannot be accepted as an education major in college. Therefore, it is reasonable that non-

education major teachers may feel highly appreciative for the opportunity to enter and remain in

teaching.

Research Question 7 (RQ7) asked, "Is there an indirect effect of the helpfulness of TIP on

anticipated teacher retention via teacher self-efficacy?" Chapter 4 provided evidence that teacher

self-efficacy is not a mediator between the helpfulness of TIP and anticipated teacher retention in

first-year teachers in Shanghai public primary schools. The primary reason why teacher self-

efficacy is not a mediator in the model is that there is no significant relationship between the

helpfulness of teacher induction programs and teacher self-efficacy. The possible reasons for this

have been discussed above (as part of the results for Research Question 4).

Implications for Shanghai TIPs

Based on the study results, implications for improving Shanghai TIPs are addressed below. First, Shanghai TIPs may consider re-organizing the content and its orientation schedule. As the results show, orientation is the component that first-year teachers perceive as least helpful. Some responses to the open-ended questions provide reasons why TIP activities related to the orientation component did not have the rating as high as other components. For example, some responses mentioned district/school orientation might be scheduled one week before the new school year instead of being scheduled in the middle of summer/winter break. Also, some responses mentioned orientation (3-7 days) needs to involve more active learning, rather than so much direct instruction using lectures.

Secondly, those in charge of planning the Shanghai TIPs may consider offering more opportunities to first-year teachers for practical activities such as case study analysis and teacher interactions with peers and teacher experts. Although the perception of helpfulness in professional development was reported to be high, many responses to the open-ended questions strongly expressed that the first year teachers are looking for more practical training supports. The key words "case studies" and "interactions" were frequently mentioned. First-year teachers intend to improve their skills from case reading, analyzing student behaviors (student-teacher/student-student interactions) from different perspectives, sharing ideas with peers, and absorbing more ideas and teaching philosophies from teacher experts. Moreover, first-year teachers expect more interactions with peers and teacher experts other than their mentors. Some ideas mentioned in responding to the open-ended questions are: teacher salons, new teacher skill competitions, and study buddies. These activities may be beneficial for first-year teachers by, for example, releasing job anxiety, developing their teacher identities, and reducing feelings of isolation.

Thirdly, Shanghai TIPs may consider providing supports related to increasing student engagement. First-year teachers may have more activities about improving instructional strategies and classroom management; however, the results indicate that they have relatively lower teacher self-efficacy in terms of student engagement. Content related to student engagement could include helping students believe they can do well in schoolwork, assisting students to value learning, motivating those who show low interest in learning, and engaging families to support students' schoolwork. Among first-year teachers as respondents who provided suggestions for improving Shanghai TIPs, some mentioned having less paperwork in TIPs. Others suggested the TIP be extended from one year to two years.

Suggestions for Future Research

Results of the study demonstrate that the perception of Shanghai TIP helpfulness across all four components is positively related to overall anticipated teacher retention. To understand the in-depth relationship between each type of Shanghai TIP component and anticipated teacher retention, additional analyses focused on separate components should be conducted. Also, qualitative research methods should be added. For example, a phenomenological study based on in-depth interviewing may reveal additional insights as to how first year teachers experience the TIP, and, in particular, how those experiences may be linked with their sense of teaching efficacy and plans to remain as a public primary school teacher in Shanghai.

Second, the study aimed to examine whether the perception of TIP helpfulness could increase teacher self-efficacy, and in turn, raise teacher retention. Results of the study did not reveal that teacher self-efficacy is a mediator in this model. Therefore, future research may propose and test other possible mediation pathways (such as job satisfaction), to uncover potential indirect effects, in addition to what may be a direct effect, as found in this study.

Third, it is interesting to notice that teacher self-efficacy was statistically negatively correlated to anticipated teacher retention, after controlling gender, degree, and major. This means that first-year teachers who believe they are more capable in student engagement, classroom management, and instructional strategies may be less likely to be retained in Shanghai public primary schools. Future research may include in-depth studies about these first-year teachers who have high teacher self-efficacy rates.

Conclusion

With the increasing growth of student population and its increasing educational standards in Shanghai, teacher education becomes a hot topic. First-year teaches are new entries into profession. They could become a strong teaching force in the near future if they are provided efficient and sufficient support. In turn, student achievement may be positively impacted. Thus, it is necessary for educators to study the effectiveness of TIPs as perceived by Shanghai primary school teachers in terms of how helpful they find the TIPs. The purpose of the study was to investigate the relationship between the perceptions held by first-year teachers as to the helpfulness of the overall formalized Shanghai TIPs, teacher self-efficacy, and anticipated job retention of those working in Shanghai public primary schools. The study results provided strong evidence that there is positive relationship between helpfulness of Shanghai TIPs and anticipated teacher retention.

References

Adnot, M., Dee, T., Katz., & Wyckoff, J. (2016). Teacher turnover, teacher quality, and student achievement in DCPS. *CEPA Working Paper, 16*(3).

Alia, S., Muhammad, R., & Mishab, A. (2017). Induction programs for novice teachers: An initiative towards quality. *New Horizons, 11*(1), 123-134.

Allen, L. V. (2014). Connecting the continuum: A university-based induction program to improve teacher quality. *Teacher Development, 18*(1), 65-80.

Allen, M. (2000). *Teacher preparation and induction*. Retrieved from https://files.eric.ed.gov/fulltext/ED473451.pdf

Alliance for Excellent Education. (2008). *What keeps good teachers in the classroom? Understanding and reducing teacher turnover*. Washington, DC: Alliance for Excellent Education.

American Institutes for Research. (2015a). *Teacher induction and mentoring brief*. Retrieved from https://lincs.ed.gov/publications/te/mentoring.pdf

American Institutes for Research. (2015b). *Promoting teacher effectiveness: Glossary*. Retrieved from https://lincs.ed.gov/publications/te/glossary.pdf

Babaei, M., & Abednia, A. (2016). Reflective teaching and self-efficacy beliefs: Exploring relationships in the context of teaching EFL in Iran. *Australian Journal of Teacher Education 41*(9), 1-26.

Bai, M. (2018). *Ying guo jiao shi gong hui diao cha xian shi gong zuo liang da dao zhi jiao shi li zhi*. Retrieved from http://www.jyb.cn/zgjyb/201801/t20180126_945084.html

Bandura, A. (1997). *Self-efficacy: The exercise of control*. New York: W.H. Freeman.

Beijaard, D. (1995). Teachers' prior experiences and actual perceptions of professional identity. *Teachers and Teaching: Theory and Practice, 1*(2), 281-294.

Bellg, A. J., Borrelli, B., Resnick, B., Hecht, J., Minicucci, D. S., Ory, M.,... Czajkowski, S. (2004). Enhancing treatment fidelity in health behavior change studies: Best practices and recommendations from the NIH Behavior Change Consortium. *Health Psychology, 23*, 443-451.

Canrinus, E., Helms-Lorenz, M., Beijaard, D., Buitink, J., & Hofman, A. (2012). Self-efficacy, job satisfaction, motivation and commitment: Exploring the relationships between indicators of teachers' professional identity. *European Journal Psychology Education, 27*, 115-132.

Cao. L., & Zhou. Y. (2007). Xiao xue jiao shi ru zhi chu qi chang yu wen ti ji jie jue dui ce. *He Tian Shi Fan Zhuan Ke Xue Xiao Xue Bao, 27*(3), 68-69.

Crain, J. L. (2000). *The effects of a formal induction program newly-hired teachers' perceptions of self-efficacy* (Doctoral dissertation). Retrieved from ProQuest Information and Learning Company. (Accession order number: 9998068)

Chen, H. (2003). Chu ren jiao shi de shi ying yu si kao. *Xue Ke Jiao Yu, 4*, 20-25.

Chen, X. & An, G. (2016). On the new induction education system for primary and secondary teachers in Shanghai. *Teacher Education Research, 28*(2), 45-50.

Clark, S. K. (2012). The plight of the novice teacher. *The Clearing House: A Journal of Educational Strategies, Issues and Ideas, 85*(5), 197-200. doi:10.1080/00098655.2012.689783

Conway, P. (2001). Anticipatory reflection while learning to teach: From a temporally truncated to a temporally distributed model of reflection in teacher education. *Teaching and Teacher Education, 17*, 89-106.

Dangler, R. J. (2016). *An examination of new teacher perceptions of the effectiveness of various teacher induction components in increasing teacher efficacy* (Doctoral dissertation). Retrieved from ProQuest Information and Learning Company. (Accession order number: 3255634)

Darling-Hammond, L. (2000). Teacher quality and student achievement: A review of state policy evidence. *Education Policy Analysis Archives, 8*(1), 1-44.

Deangelis, K. J., & Presley, J. B. (2010). Toward a more nuanced understanding of new teacher attrition. *Education and Urban Society, 43*(5), 598-626.

Duncan, A. (2011). *The Obama administration's plan for teacher education*. Retrieved from https://www.ed.gov/sites/default/files/our-future-our- teachers.pdf

Erikson, E. H. (1986). *Identity, youth and crisis.* New York: W.W. Norton & Company.

Farrell, T. (2003). Learning to teach English language during the first year: personal influences and challenges. *Teaching and Teacher Education, 19*(1), 95-111.

Fensterwald, J. (2015). *Half of new teachers quit profession in 5 years? No true, new study says*. Retrieved from https://edsource.org/2015/half-of-new-teachers-quit-profession-in-5-years-not-true-new-study-says/83054

Foster, D. (2018). *Teacher recruitment and retention in England*. Briefing Paper. 7222.

Friedman, I., & Kass, E., (2002). Teacher self-efficacy: A classroom-organization conceptualization. *Teaching and Teacher Education, 18*, 675-686.

Gaikhorst, L., Beishuizen, J. J., Zijlstra, B. J., & Volman, M. L. (2015). Contribution of a

professional development programme to the quality and retention of teachers in an urban environment. *European Journal of Teacher Education, 38*(1), 41-57. doi:10.1080/02619768.2014.902439

Gao, X. (2008). Teachers' professional vulnerability and cultural tradition: A Chinese paradox. *Teaching and Teacher Education, 24*, 154-165.

Goodson, I. F., & Cole, A. L. (1994). Exploring the teachers' professional knowledge: Constructing identity and community. *Teacher Education Quarterly, 21*(1), 85-105

Harfitt, G. J. (2014). From attrition to retention: A narrative inquiry of why beginning teachers leave and then rejoin the profession. *Asia-Pacific Journal of Teacher Education, 43*(1), 22-35. doi:10.1080/1359866x.2014.932333

Hope, W. C. (1999). Principals' orientation and induction activities as factors in teacher retention. *The Clearing House: A Journal of Educational Strategies, Issues and Ideas, 73*(1), 54-56. doi:10.1080/00098659909599641

Horn, P. J., Sterling, H. A., & Subhan, S. (2002). *Accountability through "best practice" induction models.* Paper presented at the annual meeting of the American Association of Colleges for Teacher Education. New York.

Huling, L., Resta, V., & Yeargain, P. (2012). Supporting and retaining novice teachers. *Kappa Delta Pi Record, 48*(3), 140-143.

Ingersoll, R. M. (2004). Do teacher induction and mentoring matter? *NASSP Bulletin, 88*(638), 28-40.

Ingersoll, R. M. (2012). Beginning teacher induction: What the data tell us. *Phi Delta Kappan, 93*(8), 47-51.

Ji, M., Zhou, K., & Xia, Y. (2011). Xin jiao shi fa zhan xu qiu de jiao cha yu fen xi: Yi Shanghai

shi Hongkou qu wei li. *Shanghai Jiaoyu Keyan, 12*, 25-28.

Kenny, D. (2018). *The indirect effect*. Retrieved from http://davidakenny.net/cm/mediate.htm#IE

Klassen, R. M., & Chiu, M. M. (2010). Effects on teachers' self-efficacy and job satisfaction: Teacher gender, years of experience, and job stress. *Journal of Educational Psychology, 102*(3),741-756.

Klassen, R. M., Usher, E. L., Chong, W. H., Huan, V. S., Wong, I. Y., & Geogiou, T. (2009). Exploring the validity of the teachers' self-efficacy scale in five countries. *Contemporary Educational Psychology, 34,* 67-76.

Latham, N. I., & Vogt, W. P. (2007). Do professional development schools reduce teacher attrition? Evidence from a longitudinal study of 1,000 graduates. *Journal of Teacher Education, 58*(2), 153-167.

Lee, W. C., Chen, V. D., & Wang, L. (2017). A review of research on teacher efficacy beliefs in the learner-centered pedagogy context: Themes, trends, and issues. *Asia Pacific Education Review. 18*(4), 559-572. doi: 10.1007/s12564-017-9501-x

Leedy, P. D., & Ormrod, J. E. (2010). *Practical research: Planning and design* (9th ed.). New York City, NY: Merrill.

Lemon, N., & Garvis, S. (2017). Exploring pre-service teacher self-efficacy across three Australian universities. *Australian Art Education, 38*(1), 170-184.

Lowrey, J. (2012). *Teaching induction: A study on the effectiveness of induction programs among urban high school teacher self-efficacy* (Doctoral dissertation). Retrieved from ProQuest Information and Learning Company. (Accession order number: 3517170)

Manzar-Abbas, S., Khurshid, M., & Rizvi, S. (2018). Exploring differences among mentors' and mentees' self-efficacy beliefs at primary level education in China. *New Horizons, 12*(1), 23-40.

McAnulty, J., & Cuenca, A. (2014). Embracing institutional authority: The emerging identity of a novice teacher educator. *Studying Teacher Education, 10*(1), 36-52.

Ministry of Education. (2010). *Outline of China's national plan for medium- and long- term education reform and development.* Beijing: Ministry of Education.

Mintzes, J., Marcum, B., Messerschmidt-Yates, C., & Mark, A. (2012). Enhancing self-efficacy in elementary science teaching with professional learning communities. *Journal of Science Teacher Education, 24*, 1201-1218.

Musanti, S. I., & Pence, L. (2017). Collaboration and teacher development: unpacking resistance, constructing knowledge, and navigating identities. *The CCTC Reader on Social Justice*, 206-222.

Nagy, C. J., & Wang, N. (2007). The alternate route teachers' transition to the classroom: Preparation, support, and retention. *NASSP Bulletin, 91*(1), 98-113. doi:10.1177/0192636506299153

New Teacher Center. (2016). *New teacher development for every inning*. Retrieved from https://newteachercenter.org/wp-content/uploads/NewTeacherDevelopmentEveryInning.pdf

Ng, J. C., & Peter, L. (2009). Should I stay or should I go? Examining the career choices of alternatively licensed teachers in urban schools. *The Urban Review, 42*(2), 123-142. doi:10.1007/s11256-009-0120-7

Nielsen, D. C., Barry, A. L., & Addison, A. B. (2007). A model of a new-teacher induction program and teacher perceptions of beneficial components. *Action in Teacher Education,*

28(4), 14-24. doi:10.1080/01626620.2007.10463425

Noi, L. A., Kwok, D., & Goh, K. (2016). Assessing teachers' professional identity in a postsecondary institution in Singapore. *The Online Journal of New Horizons in Education, 6*(4), 38-51.

Odell, S. J., & Ferraro, D. P. (1992). Teacher mentoring and teacher retention. *Journal of Teacher Education, 43*(3), 200-204. doi:10.1177/0022487192043003006

Paine L., Fang Y., Wilson S. (2003). Entering a culture of teaching: Teacher induction in Shanghai. In Britton E., Paine L., Pimm D., & Raizen S. (Eds), *Comprehensive Teacher Induction* (pp. 20-82). New York: Springer.

Perrow, M. (2013). "Welcome to the real world": Navigating the gap between best teaching practices and current reality. *Studying Teacher Education, 9*(3), 284-297.

Ren, S. (2016). *The implementation research of Shanghai "standardized training programs for new teachers" in base school* (Master thesis). Retrieved from http://kns.cnki.net/KCMS/detail/detail.aspx?dbcode=CMFD&dbname=CMFD201701&filename=1016126006.nh&v=MTgwMzZyV00xRnJDVVJMT2ZadWRzRnl2aFdydktWRjI2R0xLNkdOSE1xWkViUElSOGVYMUx1eFlTN0RoMVQzcVQ

Renard, L. (2003). Setting new teachers up for failure or success. *Educational Leadership* (May), 62-64. Retrieved from http://jan.ucc.nau.edu/~coesyl-p/principle13-article1.pdf

Reynolds, A., Ross, S. M., & Rakow, J. H. (2002). Teacher retention, teaching effectiveness, and professional preparation: A comparison of professional development school and non-professional development school graduates. *Teaching and Teacher Education, 18*(3), 289-303. doi:10.1016/s0742-051x(01)00070-1

Ronfeldt, M., Lankford, H., Loeb, S., & Wyckoff, J. (2011). *How teacher turnover harms student*

achievement. NBER Working Paper No. 17176.

Salleh, H., & Tan, C. (2013). Novice teachers learning from others: Mentoring in Shanghai

schools. *Australian Journal of Teacher Education, 38*(3), 152-164.

Saffold, F. (2005). Increasing self-efficacy through mentoring. *Academic Exchange Quarterly,
9*(4), 13-16.

Sandholtz, J. H., & Ringstaff, C. (2014). Inspiring instructional change in elementary school

science: The relationship between enhanced self-efficacy and teacher practices. *Journal of

Science Teacher Education, 25*, 729-751. doi: 10.1007/s10972-014-9393-0

Savas, A., Bozgeyik, Y., & Eser, I. (2014). A study on the relationship between teacher efficacy

and burnout. *European Journal of Educational Research, 3*(4), 159-166.

Scott, L.D. (1995). Successful beginning teachers: A developmental model of support and

assessment. *Teacher Education Quarterly, 22*(4), 93-105.

Shanghai Municipal Education Commission (2013). *Education statistics 2013*. Shanghai:

Shanghai Education.

Shanghai Municipal Government (2016). *The 13th five-year plan for Shanghai education reform

and development*.

Shakuna, K. S., Mohamad, N., & Ali, A. B. (2016). Professional development of teachers scale

(DDTS): Using confirmatory factor analysis. *International Journal of Science and

Research, 5*(8), 1510-1515. doi:10.21275/ART20161270

Shanghai Educational Municipal Commission: Shanghai Teacher Professional Development

Program Leading Group. (Eds.). (2017). *Effective strategies for new teacher standardized

training*. Shanghai: East China Normal University Press.

Shearn, N. W. (2007). *Sources of efficacy for first-year teachers* (Doctoral dissertation). Retrieved from ProQuest Information and Learning Company. (Accession order number: 3289293)

Skaalvik. E., & Skaalvik, S. (2016). Teacher stress and teacher self-efficacy as predictors of engagement, emotional exhaustion, and motivation to leave the teaching profession. *Creative Education, 7*, 1785-1799.

Smith, T. M., & Ingersoll, R. M. (2004). What are the effects of induction and mentoring on beginning teacher turnover? *American Educational Research Journal, 41*(3), 681-714.

Struyven, K., & Vanthournout, G. (2014). Teachers' exit decisions: An investigation into the reasons why newly qualified teachers fail to enter the teaching profession or why those who do not enter do not continue teaching. *Teaching and Teacher Education, 43,* 37-45.

Srivastava, S., Tiwari, G., & Srivastava, A. P. (2016). Examining correlations between school teacher's self-efficacy and their job involvement. *Scholege International Journal of Management & Development, 3*(12), 194-203.

Tatar, N., & Buldur, S. (2013). Improving preservice science teachers' self-efficacy about the use of alternative assessment: Implication for theory and practice. *Journal of Baltic Science Education, 12*(4), 452-464.

Liberation Daily. (2017, Dec 13). *The Shanghai kindergarten teacher gap.* Retrieved form http://www.mnw.cn/edu/news/1900604.html

Tschannen-Moran, M., & Woolfolk Hoy, A. (2001). Teacher efficacy: Capturing and elusive construct. *Teaching and Teacher Education*, 17, 783-805.

Tschannen-Moran, M., & Woolfolk Hoy, A. (n.d.). *Teacher sense of efficacy scale*. Retrieved form http://wmpeople.wm.edu/site/page/mxtsch/researchtools

Tsui, A. B. (2004). Understanding expertise in teaching. *Understanding Expertise in Teaching*, 245-282. doi:10.1017/cbo9781139524698.011

Uztosun, M. S. (2016). Pre-service and in-service English teachers' efficacy beliefs about teaching English at primary schools. *Elementary Education Online, 15*(4), 1191-1205. doi: http://dx.doi.org/10.17051/io.2016.80068

Weldon, P. (2018). Early career teacher attrition in Australia: Evidence definition, classification and measurement. *Australian Journal of Education, 62*(1), 61-78.

Wiesman, J. (2016). Exploring novice and experienced teachers' perceptions of motivational constructs with adolescent students. *American Secondary Education, 44*(2), 4-20.

Wong, H. K., Britton, T., & Ganser, T. (2005). What the world can teach us about new teacher induction. *Phi Delta Kappan, 86*(5), 379-384. doi:10.1177/003172170508600509

Wu, G. (2018). *Shanghai primary and secondary school teachers occupational status and policy suggestions*. Retrieved from http://news.sina.com.cn/c/2014-03-10/080529668179.shtml

Xia, Z. (2018). Review on the normalized induction manual for Shanghai primary and secondary school trainee teacher. *Journal of Schooling Studies, 15*(2), 55-65.

Yin, H., Lee, J. C., Jin, Y., & Zhang, Z. (2013). The effect of trust on teacher empowerment: The mediation of teacher efficacy. *Educational Studies, 39*(1), 13-28. doi: 10.1080/03055698.2012.666339

Yopp, R. H., & Young, B. L. (1999). A model for beginning teacher support and assessment. *Action in Teacher Education, 21*(1), 24-36.

Yost. D. (2006). Reflection and self-efficacy: Enhancing the retention of qualified teachers from a teacher education perspective. *Teacher Education Quarterly (Fall)*, 59-76.

Zakeri, A., Rahmany, R., & Labone, E. (2016). Teachers' self- and collective efficacy: The case of novice English language teachers. *Journal of Language Teaching and Research, 7*(1), 158-167.

Zhang, M., Ding, X., & Xu, J. (2016). *Developing Shanghai's teachers.* National Center on Education and Economy, Report.

Zhang, P. (2017). *Gaokao: How one exam can set the course of a student's life in China*. Retrieved from https://www.scmp.com/news/china/society/article/2097512/gaokao-how-one-exam-can-set-course-students-life-china

Zhao, C. (2003). *The study on teachers' growth* (Doctoral dissertation). Retrieved from CNKI. (Accession: G451)

Zhu, J. (2014). *The disparity between male and female students*. Retrieved from http://m.sohu.com/n/420587402/?pvid=000115_3w

APPENDIX A: QUESTIONNAIRE IN ENGLISH

Survey: Teacher Induction Programs, Teacher Efficacy, and Anticipated Teacher Retention in Shanghai Public Primary Schools

Part I: Demographic Question

Please check the best answer to each question based on your real situation.

1. Your age.
   (A) 23-25
   (B) 26-30
   (C) 31-35
   (D) 36-40
   (E) 41-45
   (F) 46-50

2. You gender.
   (A) Male
   (B) Female

3. Education level. What is the highest level of education you completed?
   (A) Bachelor's Degree
   (B) Master's Degree
   (C) Doctoral Degree

4. Major(s). What is your major(s) in university? Select all that apply.
   (A) Education
   (B) Chinese Literature Arts
   (C) Applied Mathematics
   (D) English
   (E) Science (Physics, Chemistry, Biology, etc.)
   (F) Music/Arts
   (G) Others: _____(please specify)

5. Subject. What subject are you teaching in primary schools?
   (A) Chinese
   (B) Mathematics
   (C) English
   (D) Music/Arts
   (E) Physical Education
   (F) Science
   (G) Morality and Laws (or Morality and Social Science)
   (H) Computer science technology
   (I) Labor skills and technology
   (J) Others: _____ (please specify)

7. Salary. What is your salary per month?
   (A) Below 3,500 Yuan
   (B) 3,500 – 5,000 Yuan
   (C) 5,001 – 7,500 Yuan
   (D) 7,501-10,000 Yuan
   (E) Above 10,000Yuan

8. How many class periods do you have per week? (one class period = 35 minutes)
   (A) 5-10
   (B) 11-15
   (C) 16-20
   (D) 21-25
   (E) 26-30
   (F) 31-35
   (G) 36-40

Part II: The Helpfulness of Formalized Teacher Induction Programs

Please think about the Teacher Induction Program (TIP) you participated in within your first year of teaching. Based on the definitions of the four Teacher Induction Program components listed below, consider whether each was or was not part of what you experienced. If that aspect was included as part of your TIP, then indicate how helpful you found it to be. If that aspect was not included as part of your TIP, select the "N/A" option on the right. Then think about the TIP, as a whole and rate how helpful it was for you. Place an "X" or check mark in each of the cells to indicate your selections.

Definitions of TIP Components
Orientation is defined as "intended to orient new teachers to the community, district, curriculum, and school" (Horn et al., 2002, p. 8). It could be welcoming first-year teachers, introducing the academic goals/learning and learning philosophy of the districts, reviewing the policies, and addressing induction issues before the new school year.

Mentoring is defined as help ease the first-year teachers transition from a university student learning to teach to a full-time teacher in the classroom" (Wallin & Boggan, 2015). It could be class observation, post-observation meeting, planning with mentors, etc.

Professional Development is "providing opportunities for novice teachers to gain additional knowledge, skills, and attitudes necessary for successful teaching" ((Horn et al., 2002, p. 10). It includes seminars, workshops, activities, competitions, and collaborations.

Evaluation is a way through which teachers come to know their strengths and weaknesses (Horn et al., 2002). It is applied by teacher themselves, mentors, school administrators, district administrators, and the Shanghai Municipal Office of Teacher Education. It includes attending program activities, recording training manual, class observation evaluations, and teacher morality evaluation. As a part of TIP, evaluation is limited to the first-year teachers being evaluated.

	Did you participate in this type of induction component?		If so, how helpful was it?					
	1 *Yes*	0 *No*	0 *Not at all*	1 *Of Little help*	2 *Some-what help-ful*	3 *Help-ful*	4 *Very helpful*	N/A: *Not part of my TIP*
Orientation								
Mentoring								
Professional development								
Teacher evaluation								
Overall (the TIP, as a whole)								

Optional: If you would like to comment on any aspect of the TIP as you experienced it, feel free to do so in the space provided below.

Part III: Teacher Sense of Efficacy Scale

Teacher Beliefs

This questionnaire is designed to help us gain a better understanding of the kinds of things that create challenges for teachers. Your answers are confidential.

Directions: Please indicate your opinion about each of the questions below by marking any one of the nine responses in the columns on the right side, ranging from (1) "None at all" to (9) "A Great Deal" as each represents a degree on the continuum.

Please respond to each of the questions by considering the combination of your current ability, resources, and opportunity to do each of the following in your present position.

	None at all		Very Little		Some Degree		Quite A Bit		A Great Deal
1. How much can you do to control disruptive behavior in the classroom?	1	2	3	4	5	6	7	8	9
2. How much can you do to motivate students who show low interest in school work?	1	2	3	4	5	6	7	8	9
3. How much can you do to calm a student who is disruptive or noisy?	1	2	3	4	5	6	7	8	9
4. How much can you do to help your students value learning?	1	2	3	4	5	6	7	8	9
5. To what extent can you craft good questions for your students?	1	2	3	4	5	6	7	8	9
6. How much can you do to get children to follow classroom rules?	1	2	3	4	5	6	7	8	9
7. How much can you do to get students to believe they can do well in school work?	1	2	3	4	5	6	7	8	9
8. How well can you establish a classroom management system with each group of students?	1	2	3	4	5	6	7	8	9
9. To what extent can you use a variety of assessment strategies?	1	2	3	4	5	6	7	8	9
10. To what extent can you provide an alternative explanation or example when students are confused?	1	2	3	4	5	6	7	8	9
11. How much can you assist families in helping their children do well in school?	1	2	3	4	5	6	7	8	9
12. How well can you implement alternative teaching strategies in your classroom?	1	2	3	4	5	6	7	8	9

Part IV: Teacher Anticipated Retention

Please check how much you agree with the following sentences.

	Strongly Disagree (1)	Disagree (2)	Undecided (3)	Agree (4)	Strongly Agree (5)
1. I am thinking of staying in the **same** teaching position that I am currently in.					
2. I am thinking of relocating to a different **public** primary school.					
3. I am thinking of relocating to a **private** primary school.					
4. I am thinking of relocating to a **private** educational institution other than private schools.					
5. I am thinking of changing to a **different profession** (other than teaching).					

APPENDIX B: QUESTIONNAIRE IN MANDARIN

上海公办小学教师入职教育、教学效能及留职意向调查问卷

第一部分 基本信息

请在与您情况最相符的选项中打勾。
1. 您的年龄：
    （A）23-25
    （B）26-30
    （C）31-35
    （D）36-40
    （E）41-45
    （F）46-50

2. 您的性别：
    （A）男
    （B）女

3. 您的学历。您所完成的最高教育学历是什么？
    （A）本科
    （B）硕士研究生
    （C）博士研究生

4. 您的专业。您的大学专业是什么？请选择所有符合的选项。
    （A）教育
    （B）汉语言文学
    （C）应用数学
    （D）英语
    （E）科学类（物理、化学、生物等）
    （F）音乐／艺术
    （G）其他：＿＿＿＿＿＿＿＿＿＿＿(请具体说明)

5. 科目。您在小学所教的科目是什么？
    （A）语文
    （B）数学
    （C）英语
    （D）音乐／美术
    （E）体育
    （F）自然
    （G）道德与法制（或品德与社会）
    （H）信息科技
    （I）劳动技术
    （J）其他：＿＿＿＿＿＿＿＿＿＿＿(请具体说明)

6．月收入。请问您的月收入（税前）大约是？

  （A）3500 元以下
  （B）3500−5000 元
  （C）5001−7500 元
  （D）7501−10000 元
  （E）10000 元以上

7．您每周的课时总量是_____课时？（按照一课时＝35 分钟计算）
 （A）5−10
 （B）11−15
 （C）16−20
 （D）21−25
 （E）26−30
 （F）31−35
 （G）36−40

第二部分 教师入职培训感知

　　请您回想一下你参与过的入职第一年的教师培训项目。根据以下的教师培训要素定义，请回忆您是否参与过这些项目？如果参与过，那么您认为这（些）项目对你有多大的帮助？请在相应的项目中打勾。如果没有参与过所列举的项目，请选择右侧的"没有"选项。

定义：

1. 新教师入职动员大会：指向新教师介绍周边社区，所在学区，所在学校和课程情况。新教师入职动员大会的内容涵盖新教师迎新，介绍学科／教学目标，介绍教育理念，学习相关政策，以及介绍新教师入职培训的相关事项。
2. 导师带教：指导师通过带教方式帮助新教师从实习教师成长为合格教师。导师带教内容包括帮助新教师制定教学计划，讲课听课，以及帮助新教师对上课内容进行反思。
3. 培训：指为新教师提供学习更多知识，技能和提升教学态度的机会。培训内容包括出席研讨会，听讲座，参加活动，系列比赛，和同行交流。
4. 教师考评：通过教师考评使新教师认识到自己的优势和不足。教师考评由教师自评，导师评价，学校及区领导评价，最后由上海教师教育办公室认定的方式进行。评价依据相关培训活动出勤，见习教师规范化手册填写，校级学科公开课汇报评价表，以及师德技能专业测评。

	你是否参与过？		如果参与过，他们对你有多大帮助？					
	1 是	0 否	0 完全没有帮助	1 帮助不大	2 有点帮助	3 有帮助	4 非常有帮助	N/A: 没有参与
新教师入职动员大会								
导师带教								
培训								
教师考评								
项目总评								

其他：若您对所参加的新教师入职培训有任何其他的评价，请在下框中填写。

第三部分 教师效能

教师自我效能调研问卷

要求：请阅读以下问题，根据您的观点在右侧选择的九个选项中选择相对应的选项。选项从（1）完全不能到（9）完全可以程度递增。请根据您的当前能力、资源和机会回答以下问题并在右侧选择相应回答。

本问卷旨在帮助我们更好的了解教师面临的机遇与挑战。您的所有回答都将被保密。

	完全不能		偶尔		一般		经常		完全可以
1. 我能掌控课堂中学生干扰教学的行为	①	②	③	④	⑤	⑥	⑦	⑧	⑨
2. 我能协助学习兴趣低落的学生，提高他的学习动机。	①	②	③	④	⑤	⑥	⑦	⑧	⑨
3. 我能使吵闹或干扰上课的学生安静下来。	①	②	③	④	⑤	⑥	⑦	⑧	⑨
4. 我能帮助学生了解学习的重要。	①	②	③	④	⑤	⑥	⑦	⑧	⑨
5. 我能在课堂中对学生发问好的问题。	①	②	③	④	⑤	⑥	⑦	⑧	⑨
6. 我能让学生遵循课堂规范。	①	②	③	④	⑤	⑥	⑦	⑧	⑨
7. 我能协助学生建立信心，完成学校作业。	①	②	③	④	⑤	⑥	⑦	⑧	⑨
8. 我能针对不同性质的班级，建立不同的班级管理方式。	①	②	③	④	⑤	⑥	⑦	⑧	⑨
9. 我能够使用多元化的教学评量策略。	①	②	③	④	⑤	⑥	⑦	⑧	⑨
10. 当学生没听懂时，我能换种方式解说或举例。	①	②	③	④	⑤	⑥	⑦	⑧	⑨
11. 我能协助帮助他们的孩子学习地更好。	①	②	③	④	⑤	⑥	⑦	⑧	⑨
12. 我能采用多元的教学策略。	①	②	③	④	⑤	⑥	⑦	⑧	⑨

第四部分 工作保留意向

您是否有如下考虑？请在相应的项目中打勾。

	完全不同意	不同意	不确定	同意	完全同意
我希望继续留任现岗位。					
我希望到其他公办小学工作。					
我希望到私立小学工作。					
我希望到私立教育机构工作（非私立学校）。					
我希望换个行业工作。					

APPENDIX C: INTRODUCTION TO THE RESEARCH STUDY AND INFORMED CONSENT

DETAILS

You are invited to participate in a research study: Perceptions of First-Year Shanghai Public Primary School Teachers. My name is Xiaotian Han and I am a doctoral candidate at the University of the Pacific, Benerd School of Education. You were selected as a possible participant in this study because you are a first-year teacher in Shanghai public primary school. Responding to survey items online is estimated to take at most 10 minutes of your time to complete.

The purpose of the research is to gather teacher perspectives regarding teacher induction program activities in which first year teachers may have participated; learn what first year teachers believe regarding classroom management, instructional strategies and student engagement; and learn about their career plans.

The risks involved for participants are minimal and do not exceed those typically encountered in daily life. Responding to items about Teacher Induction Programs you may have participated in and to items about your teaching beliefs may evoke some feelings for you (ranging from good to bad, depending on what your experience has been). You may feel anxious while responding to items about your future career plans. Please note that you may discontinue participating in the survey at any time by simply closing your browser without pressing submit. At no time are you asked to provide your name or anything that would allow you to be identified. In other words, you will respond to the survey anonymously and no attempt is made to determine your identity.

You may find it beneficial to reflect on your first year as a public primary school teacher and consider what steps to take in your future. Another potential benefit of participating in the study is that you have an opportunity to be selected in a random drawing to receive one of five $10 Starbucks gift card (worth 70 yuan in China). Whether you answer all the items on the survey or not, at the end of the survey, after pressing submit, you will be provided a link to a separate survey where you can enter your email address to enter the drawing. Email addresses for those who wish to participate in the drawing are temporarily stored in a separate file unconnected to the survey data itself. After the drawing, the file of email addresses will be deleted.

If you have any questions about the research at any time, please contact me at (+1) 209-684-8281, or my faculty advisor Dr. Rachelle Kisst Hackett, rhackett@pacific.edu. If you have any questions about your rights as a participation in a research project, please contact the Office of Research and Sponsored Programs, University of the Pacific (+1) 209-946-3903.

Your participation is entirely voluntary and your decision whether to participate will involve no penalty or loss of benefits to which you are otherwise entitled. If you decide to participate, you are free to discontinue participation at any time without penalty or loss of benefits to which you are otherwise entitled.

By completing and submitting this survey you indicate that you have read and understand the information provided above, that your participation is completely voluntary, that you may withdraw your consent at any time and discontinue participation at any time without penalty or loss of benefits to which you are otherwise entitled, that you may make a copy of this page (serving as a consent form) to keep for your records, and that you are not waiving any legal claims, rights or remedies.

If you would like to participate, please continue. If you do not wish to participate, simply close your browser. Thank you for taking the time to read and consider this invitation.

调研简介

即知情同意书 (In
Mandarin)

您已被邀请参加本次调研。调研内容是关于上海市公立小学初任教师感知的调研。我是美国太平洋大学伯纳德教育学院的博士研究生韩笑天。您被邀请参加本次调研是因为您是上海公立小学的一名新教师。完成本次网上调研的时间长度大约为 10 分钟。

本次调研的目的是为了了解新教师对于参加新教师培训活动的感想，了解新教师对于课堂管理，教学方法和学生参与的想法，以及了解新教师的未来发展计划。

参与者可能遭遇的风险非常小，并且完全不会对日常生活产生影响。回答关于可能参与过的新教师培训活动问题时可能引发心理变化（从好到坏，取决于您的培训经历）。您也可能会对回答关于未来事业发展计划的问题感到焦虑。但是，请不必担心，您可以在回答问卷问题中途的任何时候选择关闭页面，不提交问卷。填写问卷过程中，您不会被要求填写姓名以及任何有可能泄露您个人资料的信息。换言之，您所填写的所有问卷回答都是匿名，因此您可以放心不会在本次调研中泄露您的信息。

本次调研可能帮助您反思在公立学校的初次任教并帮助您考虑未来下一步发展计划。此外，本次调研中，参与者有机会获得价值 70 元人民币的星巴克礼品卡一张。奖励随机抽取，只有五张。抽奖规则：无论您是否回答了问卷中的所有问题，在问卷的最后，您需要点击一个独立链接并提供您的邮箱地址。所有邮箱地址会被独立储存并不会影响之前的问卷结果。抽奖结束后，所有邮箱信息将被立即删除。

如果您对于本次调研有任何问题，请联系我（+1）209-684-8281，或者联系我的导师 Dr. Rachelle Kisst Hackett, rhackett@pacific.edu. 如果您对于参与者的权利有任何疑问，请联系美国太平洋大学研究和资助项目办公室 IRB，（+1）209- 946-3903。如果您由于参加本次调研而受到意外伤害，请及时就医，使用医保支付就医款，然后和美国太平洋大学研究和资助项目办公室联系。

本次调研参与为您的自愿参与。无论您是否愿意参与本次调研，都不会涉及任何形式的处罚。如果您决定开始本次的问卷调研，您也有权利在调研中途的任何时候选择不再继续，中途退出不会涉及任何形式的处罚。

完成问卷填写并提交表示您知道并理解了以上的信息：本次调研为自愿参与，您可以在任何时候退出并终止参与而不涉及任何形式的处罚或损失。您可以保存此页面（知情同意书）作为您的记录保存。您有保留上诉和申请补偿的权利。

若您愿意参与，请点击"继续"。若您不愿意参与，请关闭页面。感谢您的宝贵时间。

APPENDIX D: ASSUMPTIONS CHECK RESULTS

First, the regression of anticipated teacher retention on TIP helpfulness and teacher self-efficacy was produced, after controlling gender, major, and degree level. The correlations among these five variables is shown in Table 17. All tolerance values are more than .17 and all VIF values are less than 6, suggesting that multicollinearity is not a concern.

Table 17: Collinearity statistics associated with the regression of Anticipated Teacher Retention on TIP Helpfulness and Teacher Self-efficacy, after controlling gender, major, and degree level

						Colliearity Statistics	
						Tolerance	VIF
Model							
(Constant)							
TIP Helpfulness						.964	1.037
Teacher Self-efficacy						.976	1.024
Female whether or not a female teacher						.990	1.011
NonEducation Not Education major						.961	1.040
Graduate Graduate Degree						.979	1.021

Secondly, whether the residuals are normally distributed was checked in this study by generating a histogram and a p-p plot. As shown in Figure 6, normality of the residuals is reasonable to assume given that the shape of the distribution does not greatly deviate from the

superimposed normal curve. Also, the p-p Plot of the residuals in Figure 7 approaches that of a
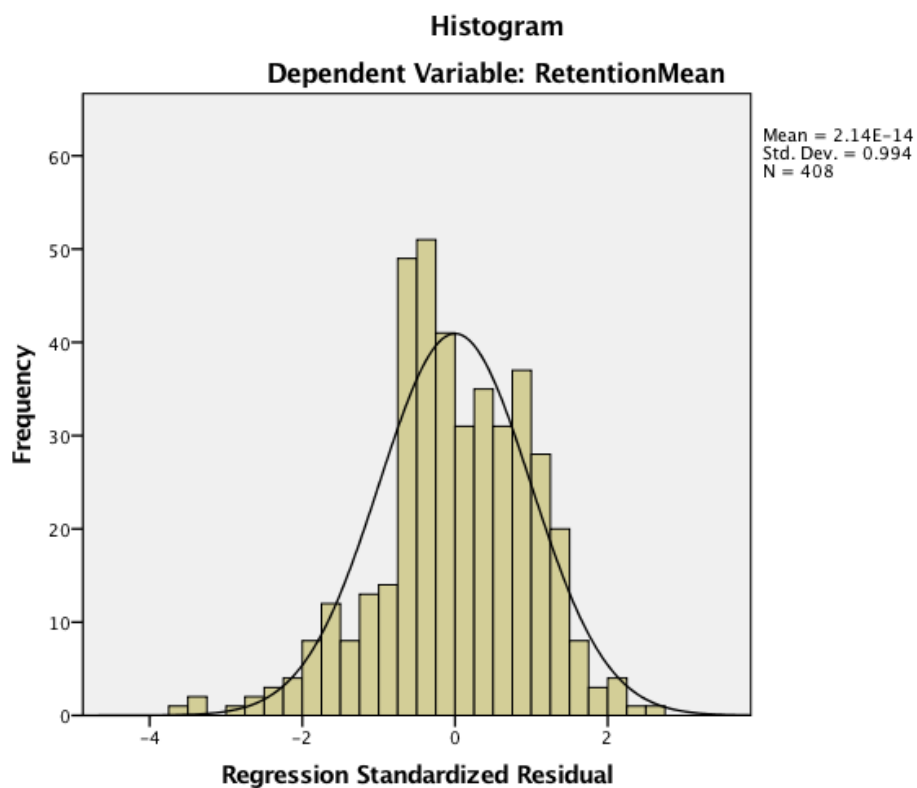
straight line, which supports the normality assumption.

Figure 6: Testing for the Normality of Residuals Through Visual Inspection of the Histogram
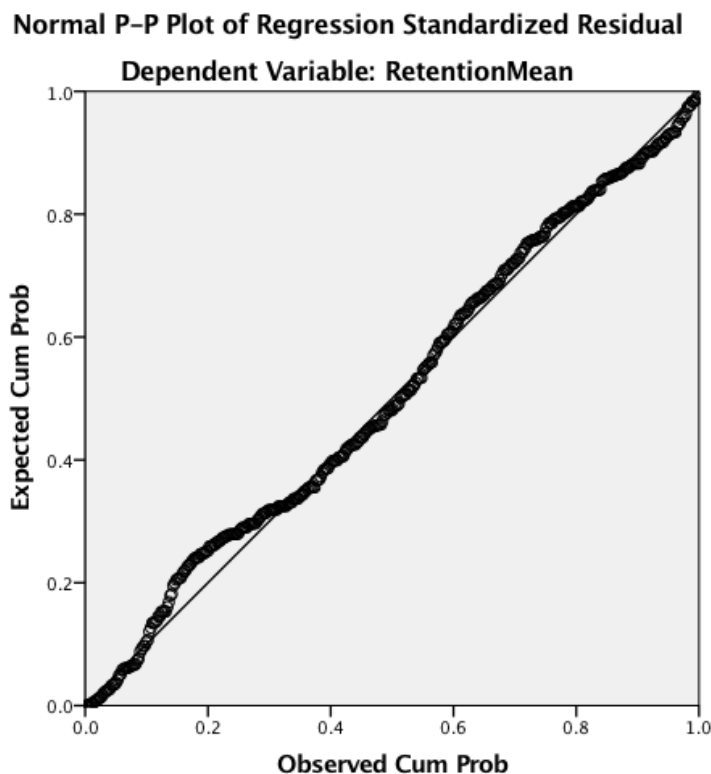
Normal P-P Plot of Regression Standardized Residual

Dependent Variable: RetentionMean

Figure 7: Testing for the Normality of Residuals Through Visual Inspection of the p-p Plot

Thirdly, in checking for linear relationships between the predictors and outcome, scatterplots were generated of the unstandardized residuals by the unstandardized predicted values (Figure 8) and by each of the predictors in the model separately (Figures 9 through 13). Then lowess (or loess) fit lines were added. The lowess lines in these figures approach a straight line near the level where the y-value equals zero. The results of these figures indicate that the variables in the model (x's) are linearly related to the outcome (y) as assumed. In addition, visual inspection of these figures is helpful for checking homoscedasticity (as evidenced by a rectangular rather than fan shaped distribution of the points in the scatterplots).
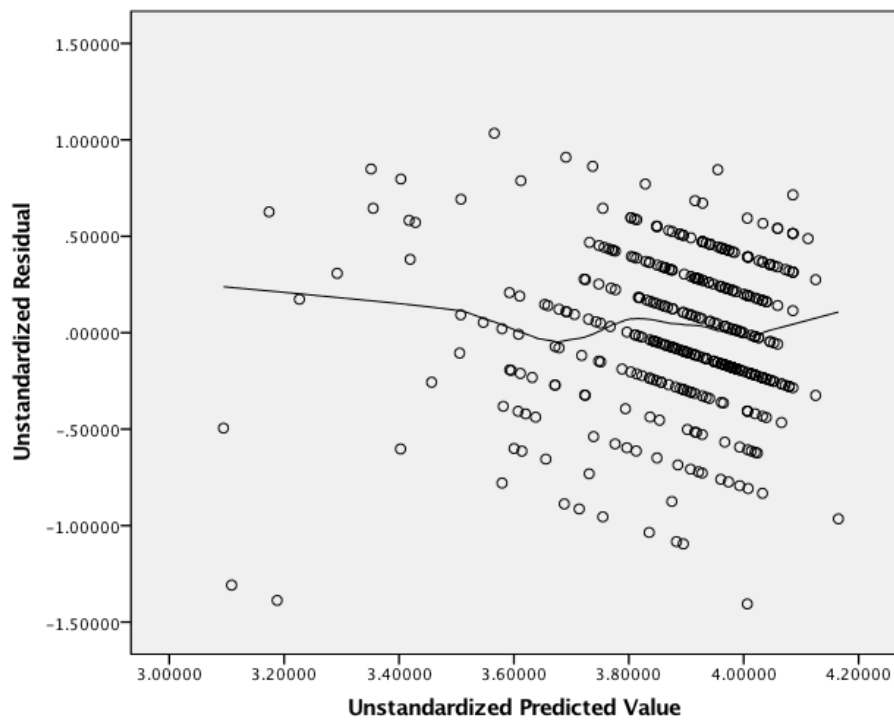
Figure 8: Scatterplot of the Unstandardized Residuals of Anticipated Teacher Retention
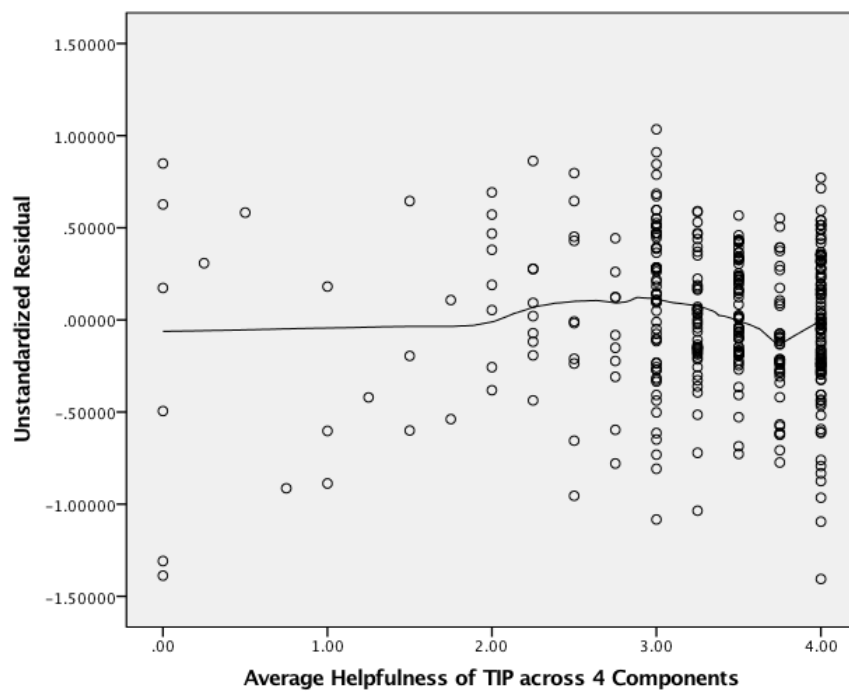

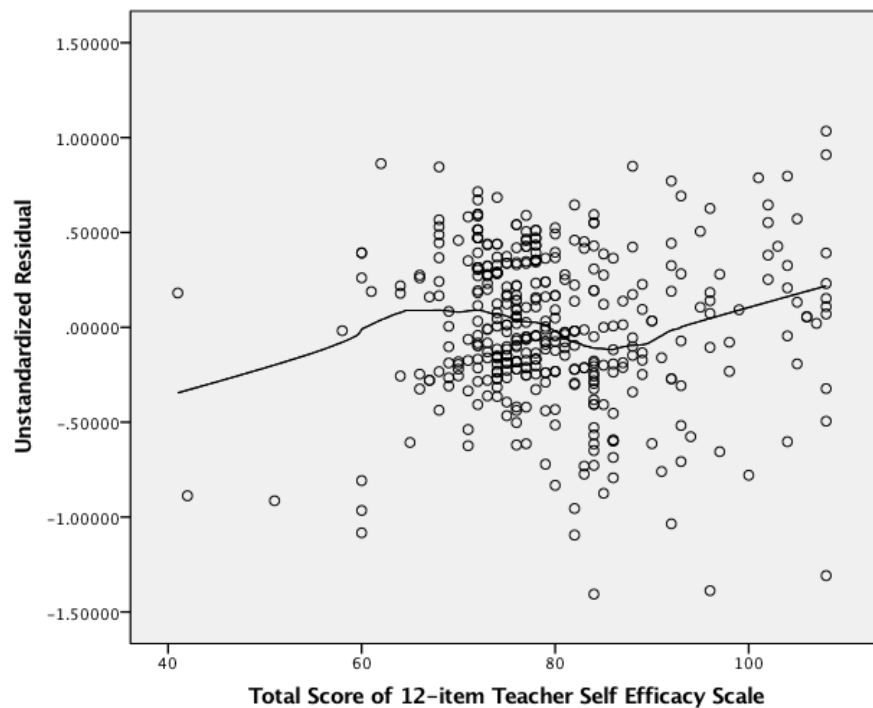Figure 9: Scatterplot of the Unstandardized Residuals of TIP Helpfulness

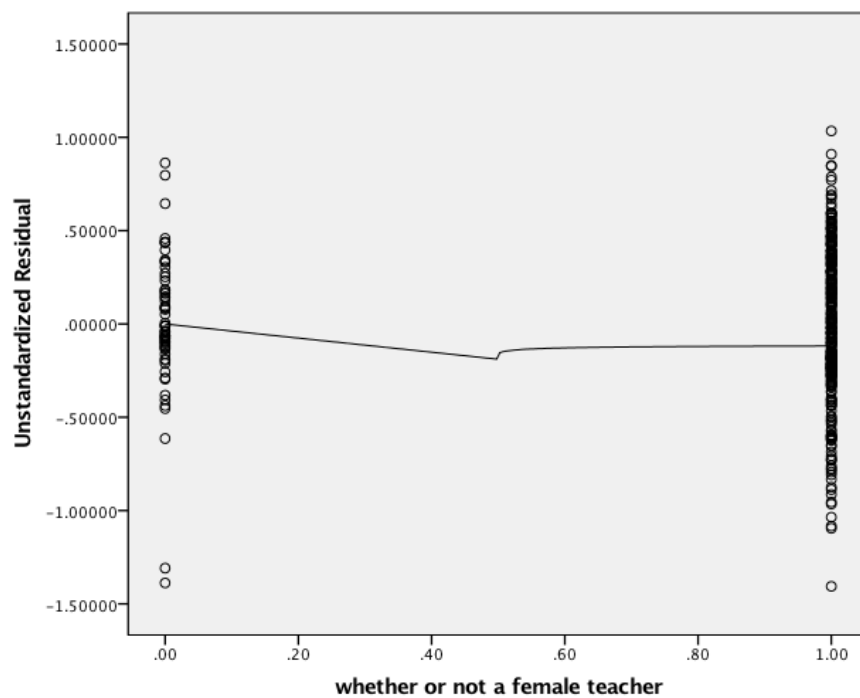Figure 10: Plot of the Unstandardized Residuals of Teacher Self-efficacy

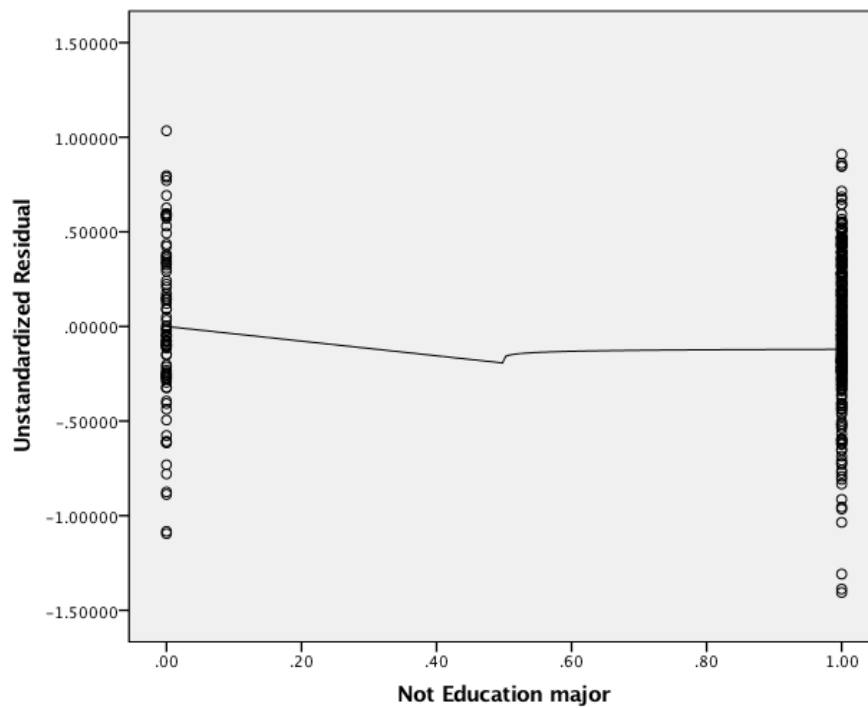Figure 11: Plot of the Unstandardized Residuals of Gender (Control Variable)

Figure 12: Plot of the Unstandardized Residuals of Major (Control Variable)
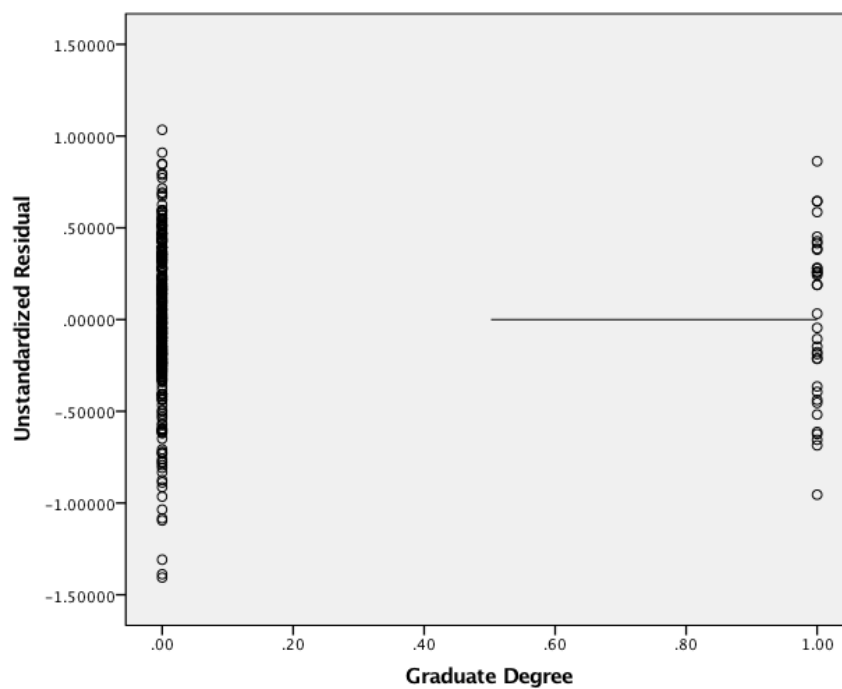

Figure 13: Plot of the Unstandardized Residuals of Degree (Control Variable)

Then, the assumption of homoscedasticity was more formally checked by comparing the amount of variation in the residuals for different levels based on the predicted values. The results are displayed in Figure 14 and Table 18. As shown in the table, for the lowest category of predicted values, the variance of the residuals is .123 versus .259, for the highest category. Since the ratio of the highest to lowest variance is under 10, homoscedasticity remains a reasonable assumption.
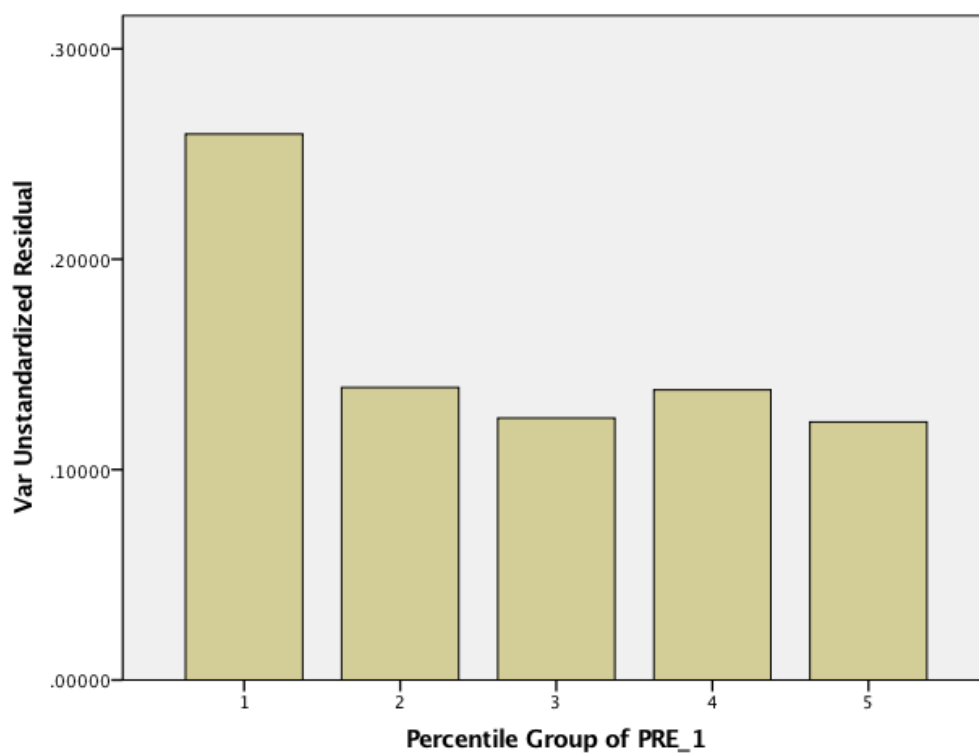

Figure 14: Comparison of the Variance of Residuals, by Predicted Anticipated Teacher Retention Categorized into 5 Groups

Table 18: Comparison of the Variance of Residuals, by Predicted Anticipated Teacher Retention

NPRE_1 Percentile Group of PRE_1	Mean	N	Std. Deviation	Variance
1	-0.0164371	81	0.50938366	.259
2	0.0514671	83	0.37282648	.139
3	0.011809	80	0.35280367	.124
4	-0.0279915	83	0.37130043	.138
5	-0.0192814	81	0.35028789	.123
Total	.0000000	408	0.39486223	.156

Last, values for distance, leverage and influence were investigated to diagnose unusual cases. When testing the assumptions underlying the use of multiple linear regression, four cases were repeatedly found to be "influential" given their values across various indices. These four cases (15, 19, 20, and 116) were removed from the dataset and the multiple regressions related to RQ4, RQ5, RQ6, and RQ7) were re-ran. Since the pattern of results remained similar (in terms of which paths were and were not statistically significant), I have chosen to only report the results based on the full set of cases (without the 4 removed). Examples of the similarities include the following: Path c' with all cases= .157** changes to Path c'= .085** with 4 less cases; Path a with all cases= $-.793^{ns}$ changes to Path a = $-.959^{ns}$ with 4 less cases; the Sobel Test will all cases Z= .005 (p= .276) changes to the Sobel Test Z= .005 (p= .217).